

SPECIALS

TAILOR MADE

STANDARD



The new Connectivity and Housing technology catalogue: more than 3,500 products out of ESCHA standard product range with 213 product novelties. Also new: »The Cable Catalogue« with the right cable qualities overview for your application.

You need more than standard? Custom-made solutions are our strength. Give us a call!

Catalogue 2013

Industrial Ethernet M12x1

Junction connector + feed-through connection: Extension of the Profinet-range and connectors for sercos-applications

68 | 76

Industrial Ethernet

New connector line M8x1 for EtherCAT-applications

130

Valve connectors

Housing-style A with straight cable outlet | Double-valve connector
Adapter Valve_M12x1

140

Cable catalogue

ESCHA Standard-cable qualities
Applications, resistance, features, approvals, and much more.

181

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Germany



ESCHA: the company

ESCHA has stood for competence and quality in connectivity and housing technology for more than 25 years. We develop and manufacture connectivity that stands up to the industrial requirements of automation as well as numerous other application areas.

Through our innovative strength and a highly in-depth production, we realize industry-related special solutions and custom-made products on a daily basis.

Our claim is, let our customer experience the extraordinary. Getting pleasure from service, innovation and technology are our roadmap to economic success; social responsibility and sustainable budgeting are our benchmark.

www.escha.de



ESCHA: Connector- and Housing technology

... as an entire **standard-programme** robust, with highest protection classes (IP67 | IP68 | IP69K), 360° shielded, bus capable, drag chain- and robot suitable, oil-, chemicals resistant

... for **special requirements** resistant to detergents, high-pressure- and steam-jet cleaning, and high temperatures, special data transmission features, quick connectivity

... **custom-made solutions** modified standard products for your application – quick, flexible and professional – individual product development beginning with the idea through design, tool-making up to series production



ESCHA: worldwide

Our base is Halver/Germany. Here, we develop and manufacture with more than 500 employees. We guarantee high availability and consistent quality of our products worldwide through licensed production in China, USA, and Mexico.

ESCHA connectivity- and housing technology is at your disposal worldwide via a network of sales partners.

Since June 2009, ESCHA has had the status of Authorized Economic Operator. This AEO-Certification provides us with customs-law simplifications and guarantees our customers high security standards within the entire international supply chain. We are committed to the Code of Conduct of the Bundesverband Materialwirtschaft, Einkauf und Logistik e.V. (BME) (Federal Association Material Management, Purchasing and Logistics).





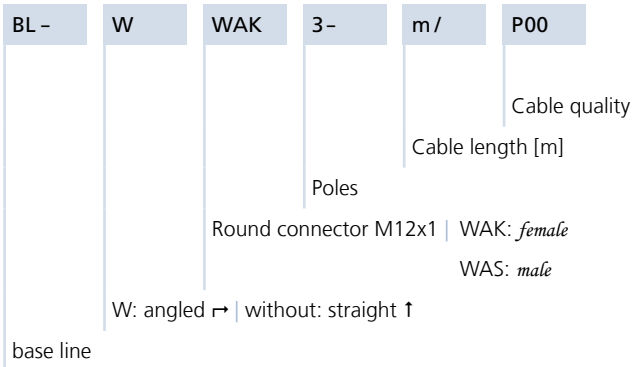
	Actuator-/Sensor round connectors	Description	Version	Page
M12x1	base line	Our Base-Round Connector Line: high standard, optimized costs.	BL: $f \mid m \mid \uparrow \mid \curvearrowright$	06 - 07
			BL: junction cable	08 - 09
M12x1	Automation Line	The Automation Line combines all au- timation requirements in one product: halogen-, PVC-, silicon-free, drag-chain adapted, weld-field immune, fire resistant, chemicals-, oil-, microbes- and hydrolysis resistant, tight according IP67, IP69K and UL approved.	AL: $f \mid \uparrow \mid \curvearrowright$	10 - 11
			AL: $f \mid \uparrow \mid \curvearrowright \mid \text{LED}$	12 - 13
			AL: $m \mid \uparrow \mid \curvearrowright$	14 - 15
			AL: thread type	16 - 17
			AL: junction cable	18 - 23
			AL: $f \mid \uparrow \mid \curvearrowright \mid \bigcirc$	24 - 25
			AL: $m \mid \uparrow \mid \curvearrowright \mid \bigcirc$	26 - 27
			AL: junction cable $\bigcirc$	28 - 31
M12x1	Field-wireable			32 - 33
M12x1	Flanges	Round connectors for device installation with wires, solder- or print contacts for PCB assembly.	Front-wall mounting	34 - 35
			Back-wall mounting	36 - 37
			Technical drawings	38 - 39
M12x1	Built-in connector Feed-through connection			40 - 41
M12x1	Quick-turn connection	Quick-turn connection Sealinged according to IP67, compatible with all M12x1 threads, safe locking, high cohesion.	SV: $f \mid \uparrow \mid \curvearrowright$	42 - 43
			SV: $m \mid \uparrow \mid \curvearrowright$	44 - 45
			SV: junction cable	46 - 47
M12x1	with defined tourque	M12x1 with integrated torque control- system. Tightend and Sealinged by hand: “tight when it rotates freely”.	NM: $f \mid \uparrow \mid \curvearrowright$	48 - 49
			NM: $m \mid \uparrow \mid \curvearrowright$	50 - 51
			NM: junction cable	52 - 53
M12x1	Food & Beverage	PVC-round connector with stainless-steel coupling-nut for F&B industries.	FB: $f \mid m \mid \uparrow \mid \curvearrowright$	54 - 55
			FB: junction cable	56 - 57
M12x1	Food & Beverage plus	Resistant to sour/alkaline cleaning-, dis- infectants agents, PVC-free, IP67/IP69K.	FB: $f \mid m \mid \uparrow \mid \curvearrowright$	58 - 59
			FB: junction cable	60 - 61
M12x1	High temperature-proof	Up to +150°C permanent operating temp. +200°C maximum operating temperature.	HT: $f \mid m \mid \uparrow \mid \curvearrowright$	62 - 63
			HT: junction cable	64 - 65
M12x1	Round connectors for bus-applications	Industrial Ethernet Profinet	IE: $m \mid \uparrow \mid \curvearrowright \mid \img alt="field-wireable icon"/>$ 4/D 8/X	66 - 67
			IE: junctions Feed-trought conn.	68 - 69
			IE: RJ45	70 - 71
			IE: junction cable	72 - 73
			IE: flanges	74 - 75
			IE: $m \mid \uparrow \mid \curvearrowright \mid \img alt="field-wireable icon"/>$ 4/D	76 - 77
			IE: RJ45	78 - 79
			IE: junction cable	80 - 81
		Industrial Ethernet sercos	IE: flanges	82 - 83
			PB: $f \mid m \mid \uparrow \mid \curvearrowright \mid$	84 - 85
			PB: junction cable	86 - 87
			PB: flanges	88 - 89
			CD: $f \mid m \mid \uparrow \mid \curvearrowright \mid$	90 - 91
			CD: junction cable	92 - 93
			CD: flanges	94 - 95
			IE PB CD	96 - 97

f = female | m = male | $\uparrow$ = straight | $\curvearrowright$ = angled | $\bigcirc$ = shielded | LED = display for operating voltage and switching conditions | thread type = grip with thread | = field-wireable



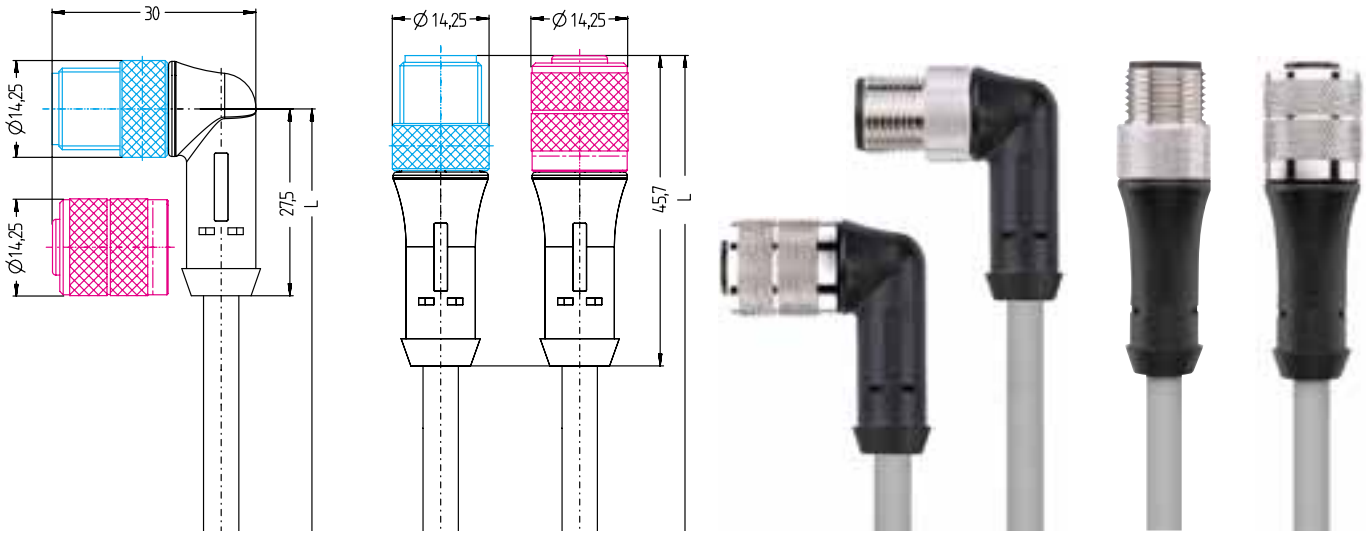
		Description	Version	Page
M8x1 Ø8snap	Automation Line	All Automation Line advantages for M8x1 Ø8 snap (snap-in design). This extensive productline permanently offers you what you look for. If not, give us a call! Modifications of standard products are our strength.	AL_M8x1: $f \mid \uparrow \mid \curvearrowright \mid \text{LED}$	98 - 99
			AL_M8x1: $m \mid \uparrow \mid \curvearrowright$	104 - 105
			AL_M8x1: junction cable	108 - 111
			AL_M8x1: $f \mid m \mid \uparrow \mid \curvearrowright \mid \bigcirc$	112 - 113
			AL_M8x1: junction cable $\bigcirc$	114 - 115
			AL_Ø8snap: $f \mid \uparrow \mid \curvearrowright \mid \text{LED}$	100 - 101
			AL_Ø8snap: $f \mid \uparrow \mid \curvearrowright \mid$ with locking-ring	102 - 103
			AL_Ø8snap: $m \mid \uparrow \mid \curvearrowright$	106 - 107
M8x1	Field-wireable			116 - 117
M8x1 Ø8snap	Flanges			118 - 119
M8x1 Ø8snap	Insertion connector			120 - 121
M8x1	Food & Beverage plus	Resistant to sour/alkaline cleaning-, disinfectants agents, PVC-free, IP67/IP69K.	FB: M8x1: $f \mid m \mid \uparrow \mid \curvearrowright$	122 - 123
			FB: M8x1: junction cable	124 - 125
M8x1	High temperature-proof	Up to +150°C permanent operating temp. +200°C maximum operating temperature.	HT: M8x1: $f \mid m \mid \uparrow \mid \curvearrowright$	126 - 127
			HT: M8x1: junction cable	128 - 129
M8x1	for bus-applications	Industrial Ethernet EtherCAT	IE: M8x1: $f \mid m \mid \uparrow \mid \curvearrowright$	130 - 131
			IE: M8x1 RJ45: junction cable	132 - 133
M16x0.75		I/O-junction box connecting cable	$f \mid \uparrow \mid \curvearrowright \mid \img alt="field-wireable icon"/>$	134 - 135
M23x1		I/O-junction box connecting cable	$f \mid \uparrow \mid \curvearrowright \mid \img alt="field-wireable icon"/>$	136 - 137
Valve connectors		The new valve-connector generation: minimum of instalation space, 24V _{AC/DC} , 230V _{AC/DC} , protective circuits and an all-around clearly visible LED.	Type A	138 - 139
			Type A straight cable outlet	140 - 141
			Double-valve connector Adapter	142 - 145
			Type B BI	146 - 147
			Type C CI	148 - 149
			junction cable	150 - 151
			Type MB_ M8x1	152 - 153
			Type	154 - 155
Junctions	2-way junction-box-systems		Type S55 M8x1/M12x1	156 - 157
			Type S89 M8x1/M12x1	158 - 159
			M12x1	160 - 161
			M8x1/Ø8 snap/M12x1	162 - 163
			M8x1/M12x1	164 - 165
I/O-junction boxes	T-junction			
Accessories	M12x1	M8x1/Ø8 snap		
Techn. information	Cablequalities	Standards, certifications, IP, technical data, wiring instructions, cable qualitys, colour guide, AWG vs. mm²...		
Address register	Representatives abroad, Representatives Germany, License productions, Headquarters			

f = female | m = male | $\uparrow$ = straight | $\curvearrowright$ = angled | $\bigcirc$ = shielded | LED = display for operating voltage and switching conditions | thread type = grip with thread | = field-wireable

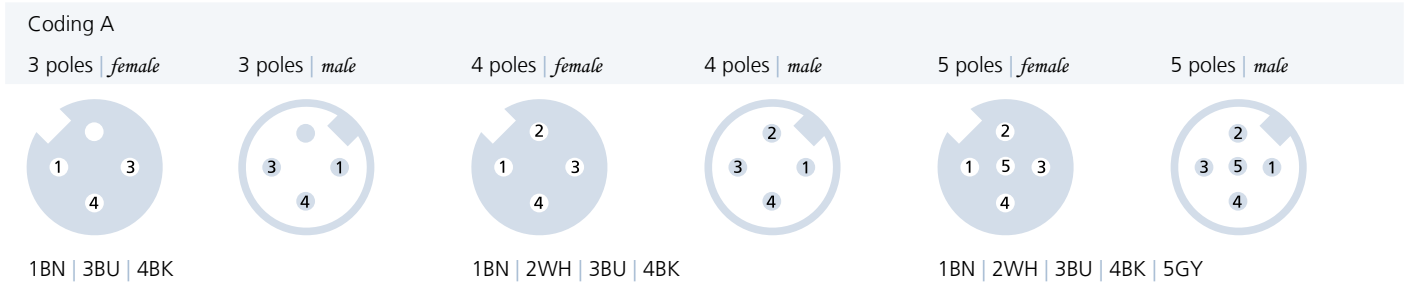


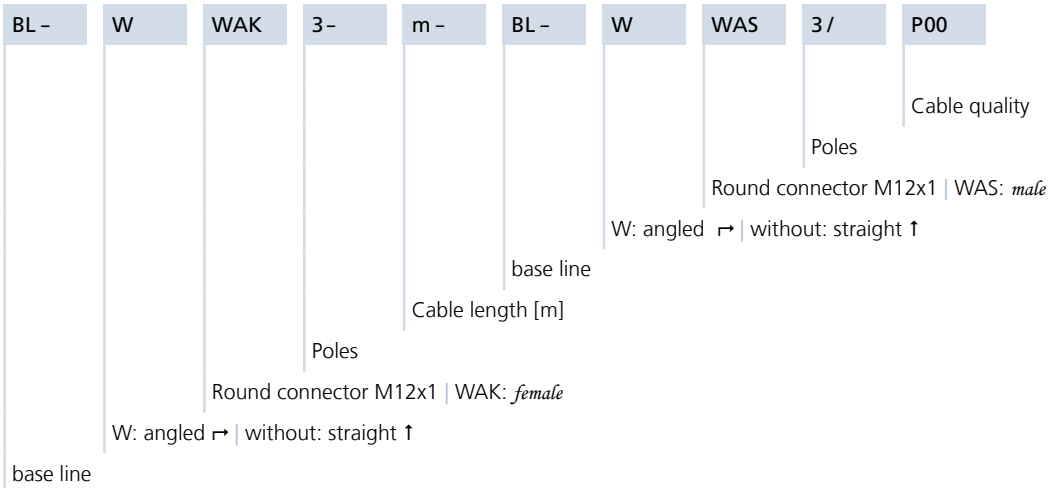
Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
BL_M12x1	f ↑	PUR S370 [®]	3	BL-WAK3-m/S370	8047935	8047871	8048461
			4	BL-WAK4-m/S370	8048462	8047872	8048463
			5	BL-WAK4.5-m/S370	8048467	8047874	8048468
		PVC P00	3	BL-WAK3-m/P00	8048554	8047903	8048483
			4	BL-WAK4-m/P00	8048555	8047904	8048484
			5	BL-WAK4.5-m/P00	8048742	8047906	8048743
		PVC P01 [®]	3	BL-WAK3-m/P01	8050937	8050938	8050939
			4	BL-WAK4-m/P01	8050941	8050940	8050942
			5	BL-WAK4.5-m/P01	8050946	8050947	8050948
	f ↗	PUR S370 [®]	3	BL-WWAK3-m/S370	8050702	8047876	8050703
			4	BL-WWAK4-m/S370	8050704	8047877	8050537
			5	BL-WWAK4.5-m/S370	8050709	8047879	8050710
		PVC P00	3	BL-WWAK3-m/P00	8050793	8047908	8050794
			4	BL-WWAK4-m/P00	8050298	8047909	8050536
			5	BL-WWAK4.5-m/P00	8050799	8047911	8050803
		PVC P01 [®]	3	BL-WWAK3-m/P01	8050952	8050953	8050954
			4	BL-WWAK4-m/P01	8050955	8050956	8050957
			5	BL-WWAK4.5-m/P01	8050961	8050962	8050963
	m ↑	PUR S370 [®]	3	BL-WAS3-m/S370	8048464	8047881	8048465
			4	BL-WAS4-m/S370	8048173	8047882	8048466
			5	BL-WAS4.5-m/S370	8048469	8047884	8048470
		PVC P00	3	BL-WAS3-m/P00	8050815	8047913	8050818
			4	BL-WAS4-m/P00	8050821	8047914	8050823
			5	BL-WAS4.5-m/P00	8050311	8047916	8050831
		PVC P01 [®]	3	BL-WAS3-m/P01	8050931	8050932	8050933
			4	BL-WAS4-m/P01	8050934	8050935	8050936
			5	BL-WAS4.5-m/P01	8050970	8050971	8050972
	m ↗	PUR S370 [®]	3	BL-WWAS3-m/S370	8050717	8047886	8050718
			4	BL-WWAS4-m/S370	8050719	8047887	8050720
			5	BL-WWAS4.5-m/S370	8050723	8047889	8050724
		PVC P00	3	BL-WWAS3-m/P00	8050837	8047918	8050839
			4	BL-WWAS4-m/P00	8050297	8047919	8050840
			5	BL-WWAS4.5-m/P00	8050864	8047921	8050867
		PVC P01 [®]	3	BL-WWAS3-m/P01	8050976	8050977	8050978
			4	BL-WWAS4-m/P01	8050979	8050980	8050981
			5	BL-WWAS4.5-m/P01	8050985	8050986	8050987

Other versions and cable-lengths are available upon request.



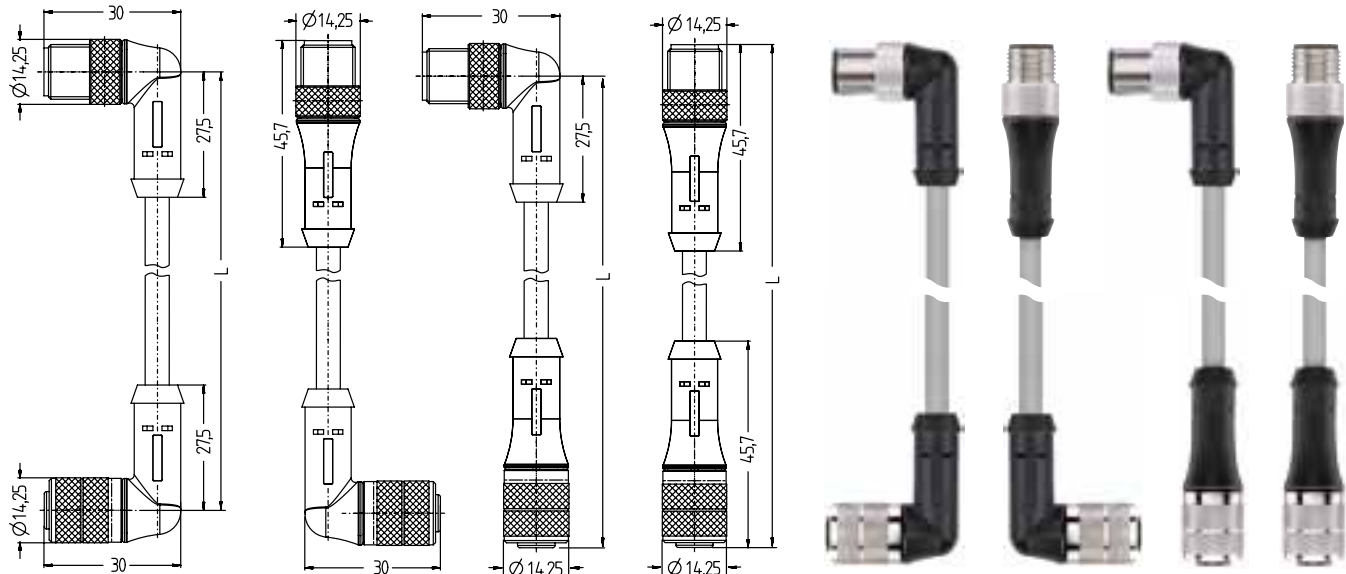
baseLine M12x1		
Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
Current load [Imax]	3, 4, 5	4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carriers	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts (<i>female</i>)	CuSn, gold-plated
	Contacts (<i>male</i>)	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles



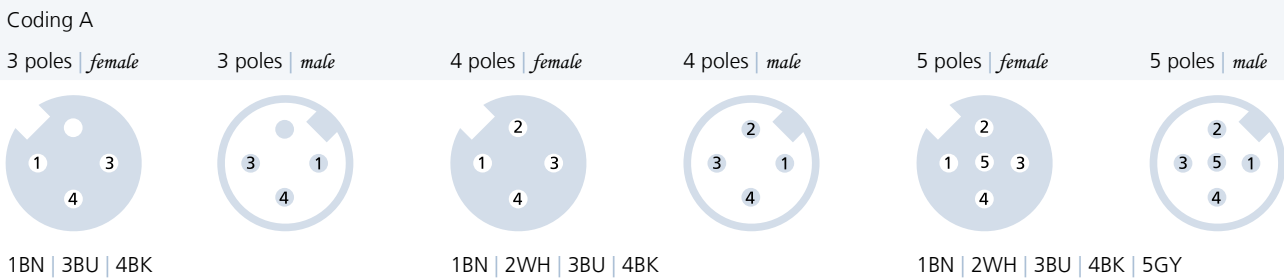


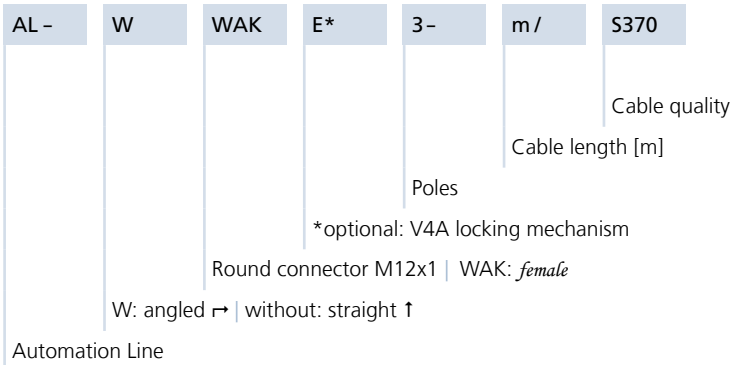
Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	5m	10m
BL_M12x1	<i>f</i> ↑ __ <i>m</i> ↑	PUR S370 [®]	3	BL-WAK3-m-BL-WAS3/S370	8052002	8047937	8047798	
			4	BL-WAK4-m-BL-WAS4/S370	8052003	8050728	8047892	
			5	BL-WAK4.5-m-BL-WAS4.5/S370	8052005	8050136	8047893	
		PVC P00	3	BL-WAK3-m-BL-WAS3/P00	8052016	8050870	8047923	
			4	BL-WAK4-m-BL-WAS4/P00	8052017	8050871	8047924	
			5	BL-WAK4.5-m-BL-WAS4.5/P00	8052018	8048906	8047925	
		PVC P01 [®]	3	BL-WAK3-m-BL-WAS3/P01	8052030	8050992	8050993	
			4	BL-WAK4-m-BL-WAS4/P01	8052031	8050995	8050996	
			5	BL-WAK4.5-m-BL-WAS4.5/P01	8052033	8050998	8050999	
	<i>f</i> ↑ __ <i>m</i> ↗	PUR S370 [®]	3	BL-WAK3-m-BL-WWAS3/S370	8052009	8050736	8047897	
			4	BL-WAK4-m-BL-WWAS4/S370	8052010	8050738	8047898	
			5	BL-WAK4.5-m-BL-WWAS4.5/S370	8052011	8050740	8047899	
		PVC P00	3	BL-WAK3-m-BL-WWAS3/P00	8052022	8050892	8047929	
			4	BL-WAK4-m-BL-WWAS4/P00	8052023	8050894	8047930	
			5	BL-WAK4.5-m-BL-WWAS4.5/P00	8052024	8050896	8047931	
		PVC P01 [®]	3	BL-WAK3-m-BL-WWAS3/P01	8052038	8051010	8051011	
			4	BL-WAK4-m-BL-WWAS4/P01	8052039	8051013	8051014	
			5	BL-WAK4.5-m-BL-WWAS4.5/P01	8052040	8051016	8051017	
	<i>f</i> ↗ __ <i>m</i> ↑	PUR S370 [®]	3	BL-WWAK3-m-BL-WAS3/S370	8052012	8050742	8047900	
			4	BL-WWAK4-m-BL-WAS4/S370	8052013	8050744	8047901	
			5	BL-WWAK4.5-m-BL-WAS4.5/S370	8052014	8050746	8047902	
		PVC P00	3	BL-WWAK3-m-BL-WAS3/P00	8052025	8047957	8047932	
			4	BL-WWAK4-m-BL-WAS4/P00	8052026	8050903	8047933	
			5	BL-WWAK4.5-m-BL-WAS4.5/P00	8052029	8050911	8047934	
		PVC P01 [®]	3	BL-WWAK3-m-BL-WAS3/P01	8052041	8051019	8051020	
			4	BL-WWAK4-m-BL-WAS4/P01	8052042	8051022	8051023	
			5	BL-WWAK4.5-m-BL-WAS4.5/P01	8052043	8051025	8051026	
	<i>f</i> ↗ __ <i>m</i> ↗	PUR S370 [®]	3	BL-WWAK3-m-BL-WWAS3/S370	8052006	8050730	8047894	
			4	BL-WWAK4-m-BL-WWAS4/S370	8052007	8050732	8047895	
			5	BL-WWAK4.5-m-BL-WWAS4.5/S370	8052008	8050734	8047896	
		PVC P00	3	BL-WWAK3-m-BL-WWAS3/P00	8052019	8050886	8047926	
			4	BL-WWAK4-m-BL-WWAS4/P00	8052020	8050888	8047927	
			5	BL-WWAK4.5-m-BL-WWAS4.5/P00	8052021	8050890	8047928	
		PVC P01 [®]	3	BL-WWAK3-m-BL-WWAS3/P01	8052034	8051001	8051002	
			4	BL-WWAK4-m-BL-WWAS4/P01	8052035	8051004	8051005	
			5	BL-WWAK4.5-m-BL-WWAS4.5/P01	8052036	8051007	8051008	

Other versions and cable-lengths are available upon request.



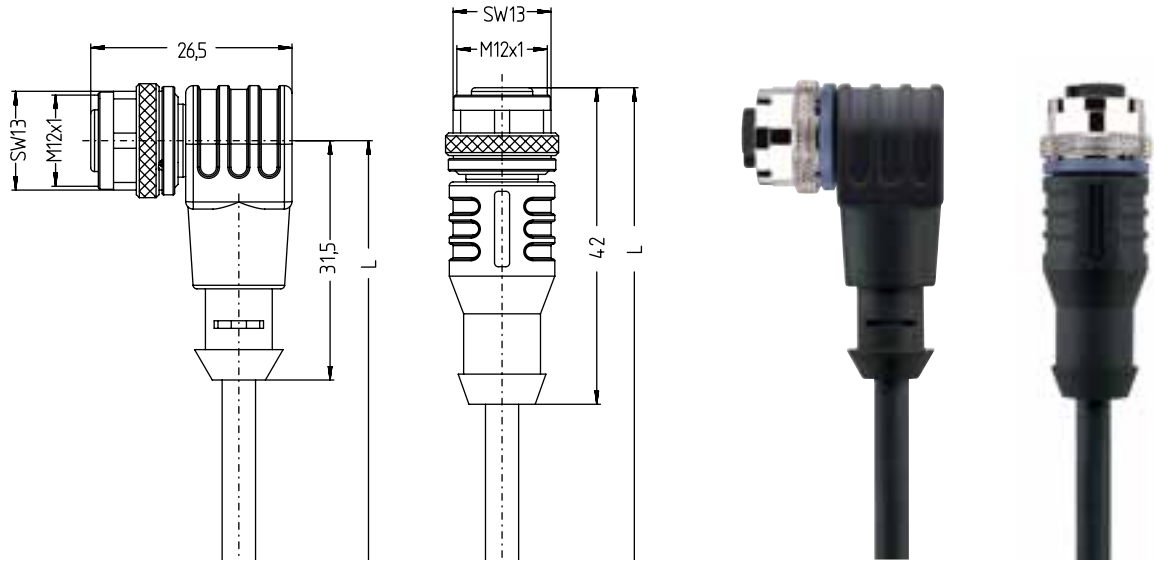
baseLine M12x1 junction cable		
Technical data		
Rated voltage [Umax]	Poles	Value
	3, 4	250V
Current load [Imax]	5	60V
	3, 4, 5	4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts (<i>female</i>)	CuSn, gold-plated
	Contacts (<i>male</i>)	CuZn, gold-plated
Ambient temperature	Locking mechanism	CuZn, nickel-plated
		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles





Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_M12x1	<i>f</i> ↑	PUR S370 [®]	3	AL-WAK3-m/S370	8043798	8043799	8043800
			4	AL-WAK4-m/S370	8043811	8043812	8043813
			4+PE	AL-WAK5-m/S370	8045034	8045035	8046043
			5	AL-WAK4.5-m/S370	8043823	8043824	8043825
			8	AL-WAK8-m/S370	8046903	8046904	8046905
		PVC P00	12	AL-WAK12-m/S370	8046918	8046920	8046921
			3	AL-WAK3-m/P00	8051043	8051044	8051045
			4	AL-WAK4-m/P00	8049341	8051055	8051056
			4+PE	AL-WAK5-m/P00	8051077	8051078	8051079
			5	AL-WAK4.5-m/P00	8051067	8051068	8051069
			8	AL-WAK8-m/P00	8051089	8051090	8051091
		PVC P01 [®]	12	AL-WAK12-m/P00	8051101	8051102	8051103
			3	AL-WAK3-m/P01	8051250	8051251	8051252
			4	AL-WAK4-m/P01	8051262	8051263	8051264
			4+PE	AL-WAK5-m/P01	8051286	8051287	8051288
			5	AL-WAK4.5-m/P01	8051274	8051275	8051276
	<i>f</i> ↗	PUR S370 [®]	8	AL-WAK8-m/P01	8051298	8051299	8051300
			12	AL-WAK12-m/P01	8051310	8051311	8051312
			3	AL-WWAK3-m/S370	8043801	8043802	8043803
			4	AL-WWAK4-m/S370	8043814	8043815	8043816
			4+PE	AL-WWAK5-m/S370	8046021	8046022	8046023
		PVC P00	5	AL-WWAK4.5-m/S370	8043826	8043827	8043828
			8	AL-WWAK8-m/S370	8046906	8046907	8046908
			12	AL-WWAK12-m/S370	8046923	8046924	8046925
			3	AL-WWAK3-m/P00	8051046	8051047	8051048
			4	AL-WWAK4-m/P00	8049342	8049343	8051057
			4+PE	AL-WWAK5-m/P00	8051080	8051081	8051082
		PVC P01 [®]	5	AL-WWAK4.5-m/P00	8049344	8051070	8051071
			8	AL-WWAK8-m/P00	8051092	8051093	8051094
			12	AL-WWAK12-m/P00	8051104	8051105	8051106
			3	AL-WWAK3-m/P01	8051253	8051254	8051255
			4	AL-WWAK4-m/P01	8051265	8051266	8051267
			4+PE	AL-WWAK5-m/P01	8051289	8051290	8051291
			5	AL-WWAK4.5-m/P01	8051277	8051278	8051279
			8	AL-WWAK8-m/P01	8051301	8051302	8051303
			12	AL-WWAK12-m/P01	8051313	8051314	8051315

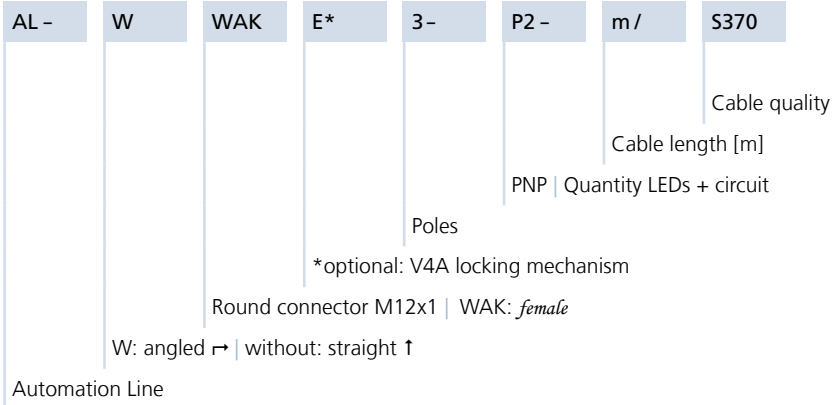
Other versions and cable-lengths are available upon request.



Automation Line® M12x1 *female*

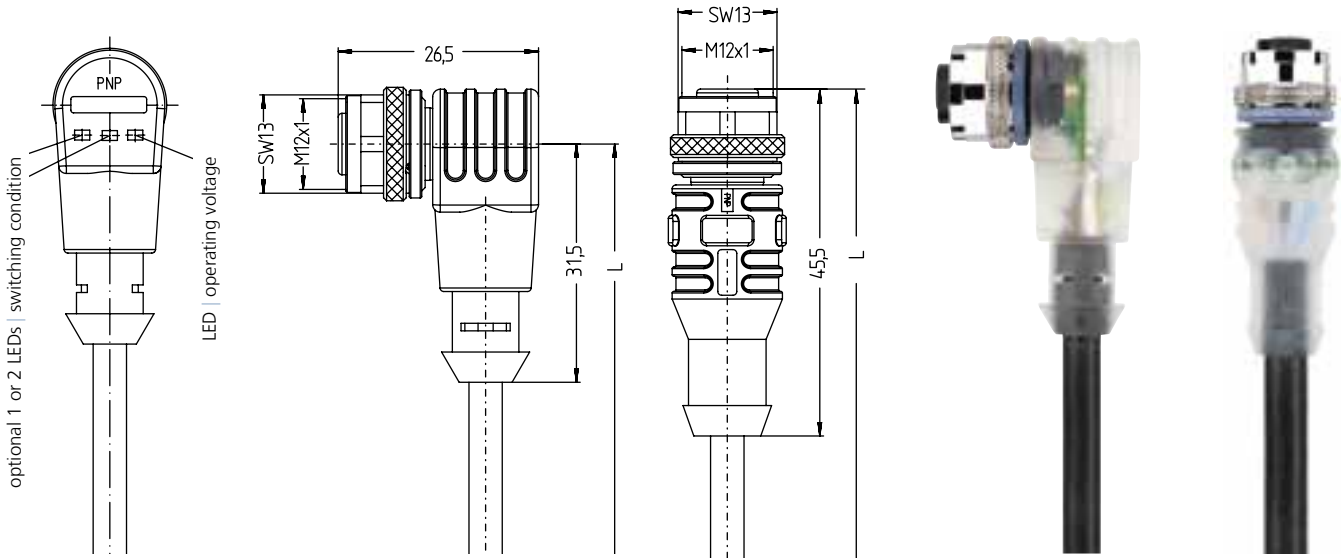
Technical data	Poles	Value
Rated voltage [U _{max}]	3, 4	250V
	4+PE, 5	60V
	8, 12	30V
Current load [I _{max}]	3, 4, 4+PE, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Coding A <i>female</i>					
3 poles	4 poles	4 poles+PE	5 poles	8 poles	12 poles
1BN 3BU 4BK	1BN 2WH 3BU 4BK	1BN 2WH 3BU 4BK 5GNYE	1BN 2WH 3BU 4BK 5GY	1WH 2BN 3GN 4YE 5GY 6PK 7BU 8RD	1BN 2BU 3WH 4GN 5PK 6YE 7BK 8GY 9RD 10VT 11GYPK 12RDBU



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m			
					2m	5m	10m	
AL_M12x1	f ↑	LED 2	PUR S370 [®]	3	AL-WAK3P2-m/S370	8044524	8045592	8047386
				4	AL-WAK4P2-m/S370	8048938	8048114	8048116
		LED 2	PVC P00	3	AL-WAK3P2-m/P00	8052508	8052509	8052510
	LED 2	4		AL-WAK4P2-m/P00	8052514	8052515	8052516	
	LED 2	PVC P01 [®]	3	AL-WAK3P2-m/P01	8052511	8052512	8052513	
	LED 2		4	AL-WAK4P2-m/P01	8052517	8052518	8052519	
	f ↗	LED 2	PUR S370 [®]	3	AL-WWAK3P2-m/S370	8044219	8045217	8044523
				LED 2	4	AL-WWAK4P2-m/S370	8045237	8045238
		LED 3	4	AL-WWAK4P3-m/S370	8044220	8044565	8044566	
	LED 3.1	4	AL-WWAK4P3.1-m/S370	8045911	8045912	8045913		
	LED 3.2	4	AL-WWAK4P3.2-m/S370	8045914	8045915	8045916		
	LED 3	PVC P00	4+PE	AL-WWAK5P3-m/S370	8044221	8045218	8045219	
	LED 3.1		4+PE	AL-WWAK5P3.1-m/S370	8045917	8045918	8045919	
	LED 2		3	AL-WWAK3P2-m/P00	8051121	8051119	8051120	
	LED 2	4	AL-WWAK4P2-m/P00	8051122	8051123	8051124		
	LED 3	4	AL-WWAK4P3-m/P00	8051125	8051126	8051127		
	LED 3.1	4	AL-WWAK4P3.1-m/P00	8051128	8051129	8051130		
	LED 3.2	4	AL-WWAK4P3.2-m/P00	8051131	8051132	8051133		
	LED 3	PVC P01 [®]	4+PE	AL-WWAK5P3-m/P00	8051134	8051135	8051136	
	LED 3.1		4+PE	AL-WWAK5P3.1-m/P00	8051137	8051138	8051139	
	LED 2		3	AL-WWAK3P2-m/P01	8051328	8051329	8051330	
	LED 2	4	AL-WWAK4P2-m/P01	8051331	8051332	8051333		
	LED 3	4	AL-WWAK4P3-m/P01	8051334	8051335	8051336		
	LED 3.1	4	AL-WWAK4P3.1-m/P01	8051337	8051338	8051339		
	LED 3.2	4	AL-WWAK4P3.2-m/P01	8051340	8051341	8051342		
	LED 3	4+PE	AL-WWAK5P3-m/P01	8051343	8051344	8051345		
	LED 3.1	4+PE	AL-WWAK5P3.1-m/P01	8051346	8051347	8051348		

Other versions and cable-lengths are available upon request.

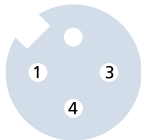


Automation Line® M12x1 *female* LED

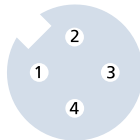
Technical data	Poles	Value
Rated voltage [Umax]	3, 4, 4+PE	10...24Vdc
Current load [Imax]	3, 4, 4+PE	4A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, transparent
	Contact carriers	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Coding A | *female*

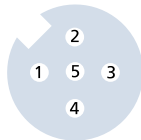
3 poles 4 poles 4 poles+PE



1BN | 3BU | 4BK



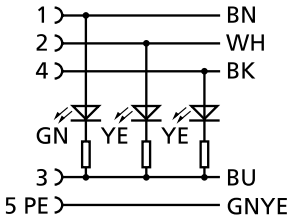
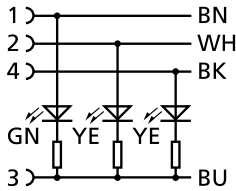
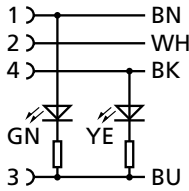
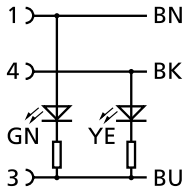
1BN | 2WH | 3BU | 4BK



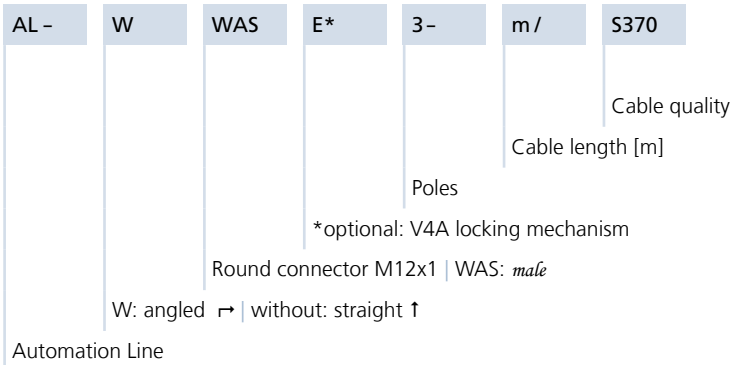
1BN | 2WH | 3BU | 4BK | 5GNYE

LED-versions

3P2 4P2 4P3 5P3

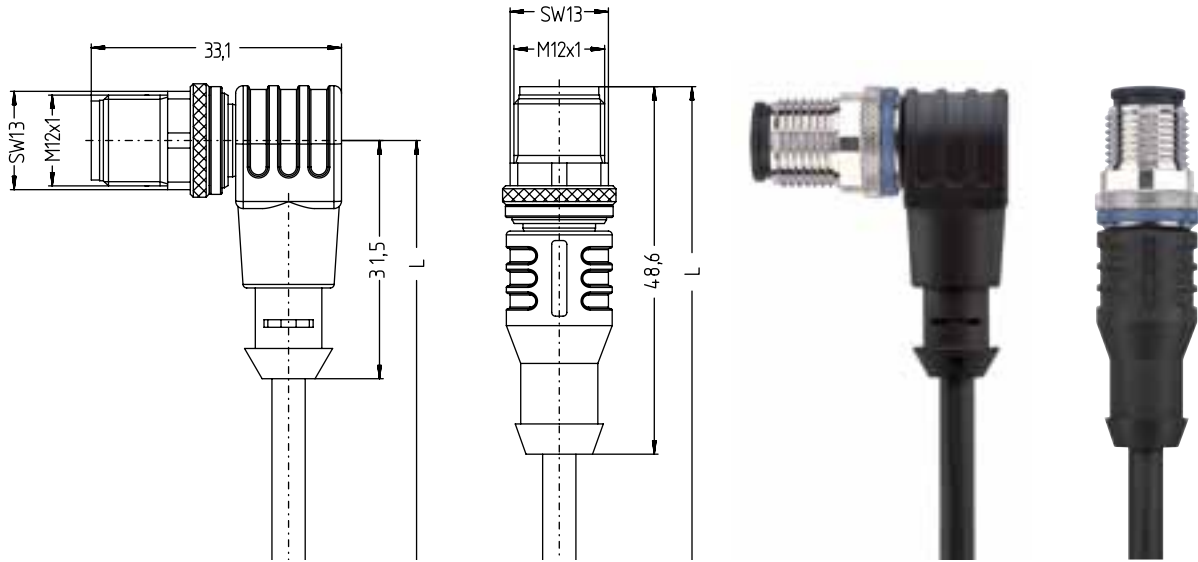


3.1 = GN/RD/YE | 3.2 = GN/WH/YE



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_M12x1	<i>m</i> ↑	PUR S370 ®	3	AL-WAS3-m/S370	8043804	8043805	8043806
			4	AL-WAS4-m/S370	8043817	8043818	8043819
			4+PE	AL-WAS5-m/S370	8046024	8046026	8046027
			5	AL-WAS4.5-m/S370	8043829	8043830	8043831
			8	AL-WAS8-m/S370	8046909	8046910	8046911
			12	AL-WAS12-m/S370	8046926	8046927	8046928
		PVC P00	3	AL-WAS3-m/P00	8051049	8051050	8051051
			4	AL-WAS4-m/P00	8049339	8051058	8051059
			4+PE	AL-WAS5-m/P00	8051083	8051084	8051085
			5	AL-WAS4.5-m/P00	8051072	8051073	8049345
			8	AL-WAS8-m/P00	8051095	8051096	8051097
			12	AL-WAS12-m/P00	8051107	8051108	8051109
		PVC P01 ®	3	AL-WAS3-m/P01	8051256	8051257	8051258
			4	AL-WAS4-m/P01	8051268	8051269	8051270
			4+PE	AL-WAS5-m/P01	8051292	8051293	8051294
			5	AL-WAS4.5-m/P01	8051280	8051281	8051282
			8	AL-WAS8-m/P01	8051304	8051305	8051306
			12	AL-WAS12-m/P01	8051316	8051317	8051318
	<i>m</i> ↗	PUR S370 ®	3	AL-WWAS3-m/S370	8043808	8043809	8043810
			4	AL-WWAS4-m/S370	8043820	8043821	8043822
			4+PE	AL-WWAS5-m/S370	8046028	8046029	8046030
			5	AL-WWAS4.5-m/S370	8043832	8043833	8043834
			8	AL-WWAS8-m/S370	8046912	8046913	8046914
			12	AL-WWAS12-m/S370	8046929	8046930	8046931
		PVC P00	3	AL-WWAS3-m/P00	8051052	8051053	8051054
			4	AL-WWAS4-m/P00	8051869	8051870	8051871
			4+PE	AL-WWAS5-m/P00	8051086	8051087	8051088
			5	AL-WWAS4.5-m/P00	8051074	8051075	8051076
			8	AL-WWAS8-m/P00	8051098	8051099	8051100
			12	AL-WWAS12-m/P00	8051110	8051111	8051112
		PVC P01 ®	3	AL-WWAS3-m/P01	8051259	8051260	8051261
			4	AL-WWAS4-m/P01	8051271	8051272	8051273
			4+PE	AL-WWAS5-m/P01	8051295	8051296	8051297
			5	AL-WWAS4.5-m/P01	8051283	8051284	8051285
			8	AL-WWAS8-m/P01	8051307	8051308	8051309
			12	AL-WWAS12-m/P01	8051319	8051321	8051320

Other versions and cable-lengths are available upon request.



Automation Line®

M 12x1 *male*

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE, 5	60V
	8, 12	30V
Current load [Imax]	3, 4, 4+PE, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carriers	TPU, BK
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Coding A <i>male</i>					
3 poles	4 poles	4 poles+PE	5 poles	8 poles	12 poles
1BN 3BU 4BK	1BN 2WH 3BU 4BK	1BN 2WH 3BU 4BK 5GNYE	1BN 2WH 3BU 4BK 5GY	1WH 2BN 3GN 4YE 5GY 6PK 7BU 8RD	1BN 2BU 3WH 4GN 5PK 6YE 7BK 8GY 9RD 10VT 11GYPK 12RDBU

AL -

W

WAK

E*

G

4-

m /

S370

Cable quality

Cable length [m]

Poles

Grip with thread for protective tubing

*optional: V4A locking mechanism

Round connector M12x1 | WAK: *female*

WAS: *male*

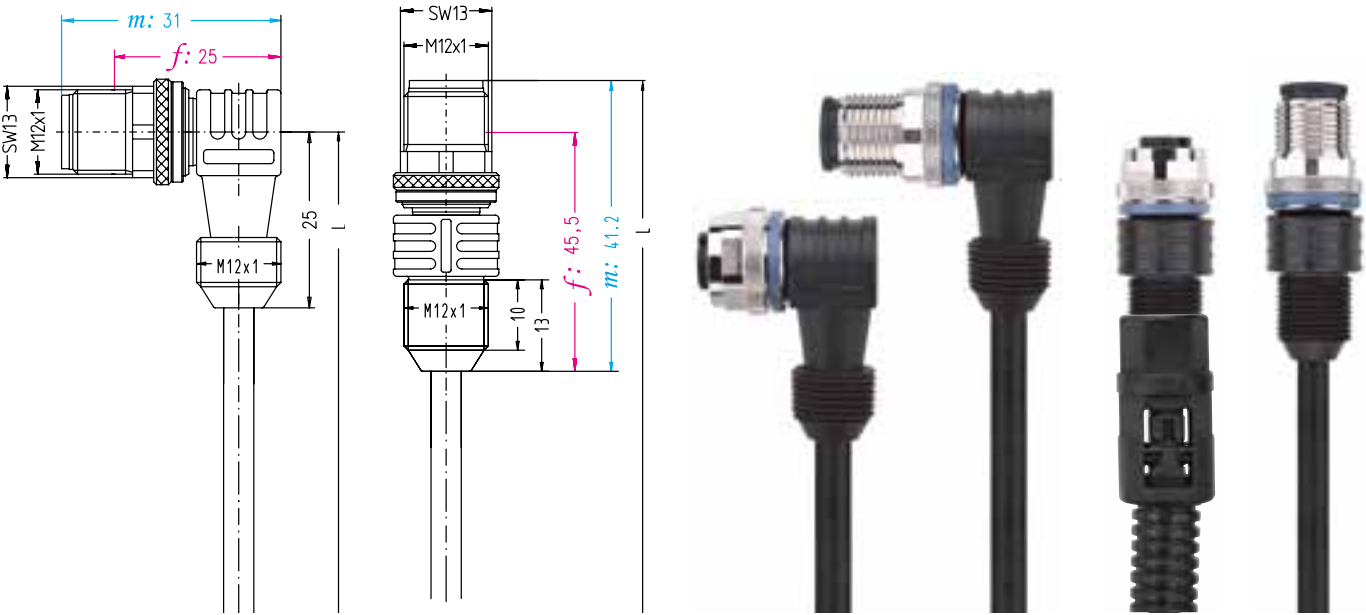
W: angled ↗ | without: straight ↑

Automation Line



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M12x1	f ↑ G	PUR S370 [®]	4	AL-WAKG4-m/S370	8052820	8052821	8052822
		PVC P00	4	AL-WAKG4-m/P00	8052823	8052824	8052825
		PVC P01 [®]	4	AL-WAKG4-m/P01	8052826	8052827	8052828
	f ↗ G	PUR S370 [®]	4	AL-WWAKG4-m/S370	8052829	8052830	8052831
		PVC P00	4	AL-WWAKG4-m/P00	8052832	8052833	8052834
		PVC P01 [®]	4	AL-WWAKG4-m/P01	8052835	8052836	8052837
	m ↑ G	PUR S370 [®]	4	AL-WASG4-m/S370	8052838	8052839	8052840
		PVC P00	4	AL-WASG4-m/P00	8052841	8052842	8052843
		PVC P01 [®]	4	AL-WASG4-m/P01	8052844	8052845	8052846
	m ↗ G	PUR S370 [®]	4	AL-WWASG4-m/S370	8052847	8052848	8052849
		PVC P00	4	AL-WWASG4-m/P00	8052850	8052851	8052852
		PVC P01 [®]	4	AL-WWASG4-m/P01	8052853	8052854	8052855
Other versions and cable-lengths are available upon request.							

Protective tubings can be found under accessories page 172.



Automation Line® M12x1 grip with thread

Technical data	Poles	Value
Rated voltage [Umax]	4	250V
Current load [Imax]	4	4A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Material	Grip	TPU, BK
	Contact carriers	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Coding A

4 poles | *female*

4 poles | *male*

2

1

3

4

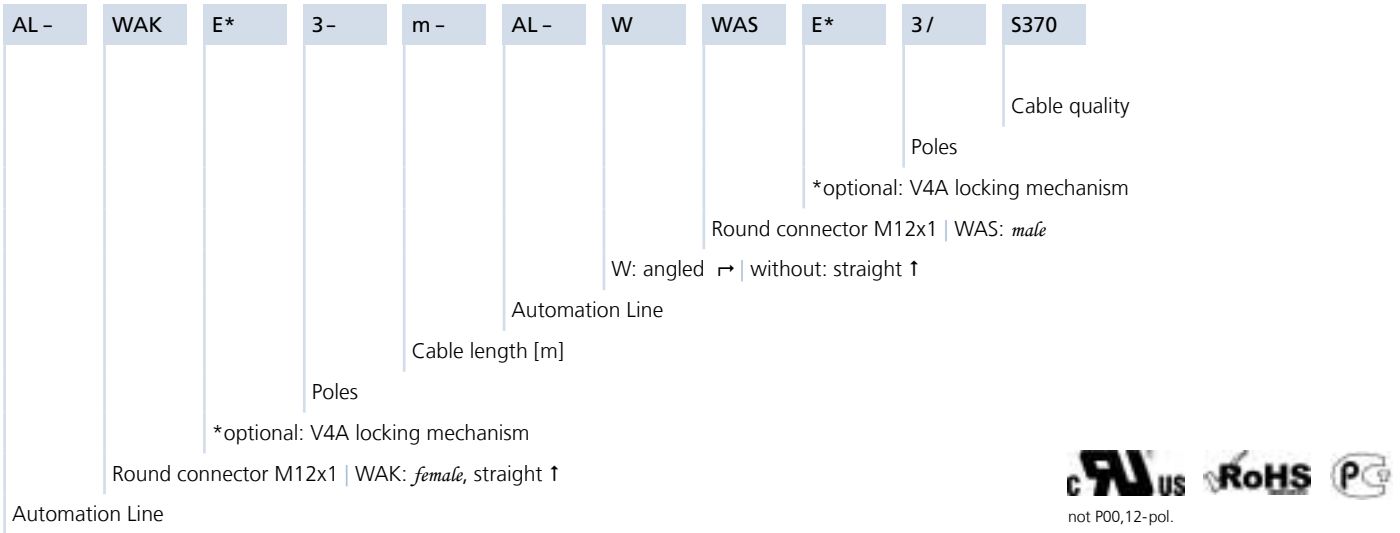
2

3

1

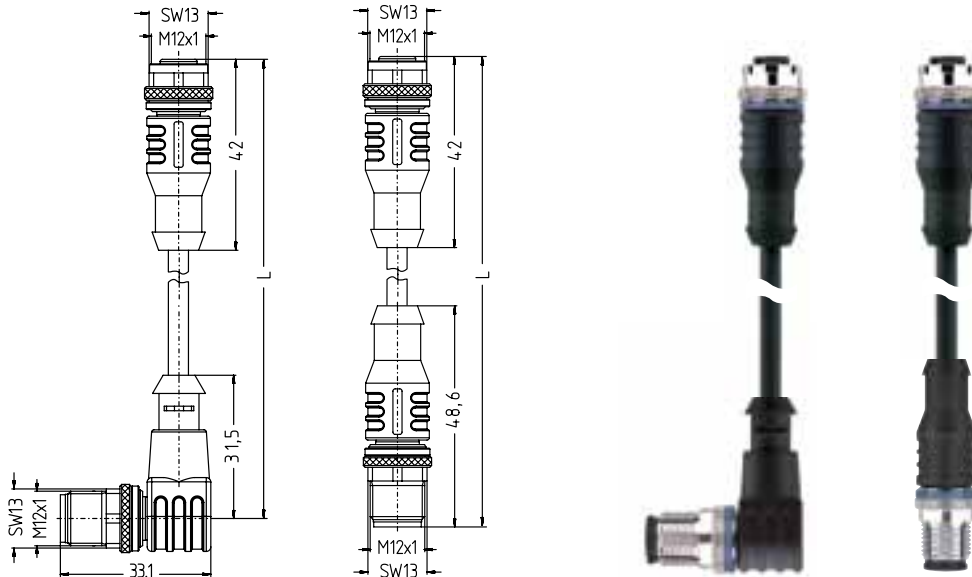
4

1BN | 2WH | 3BU | 4BK



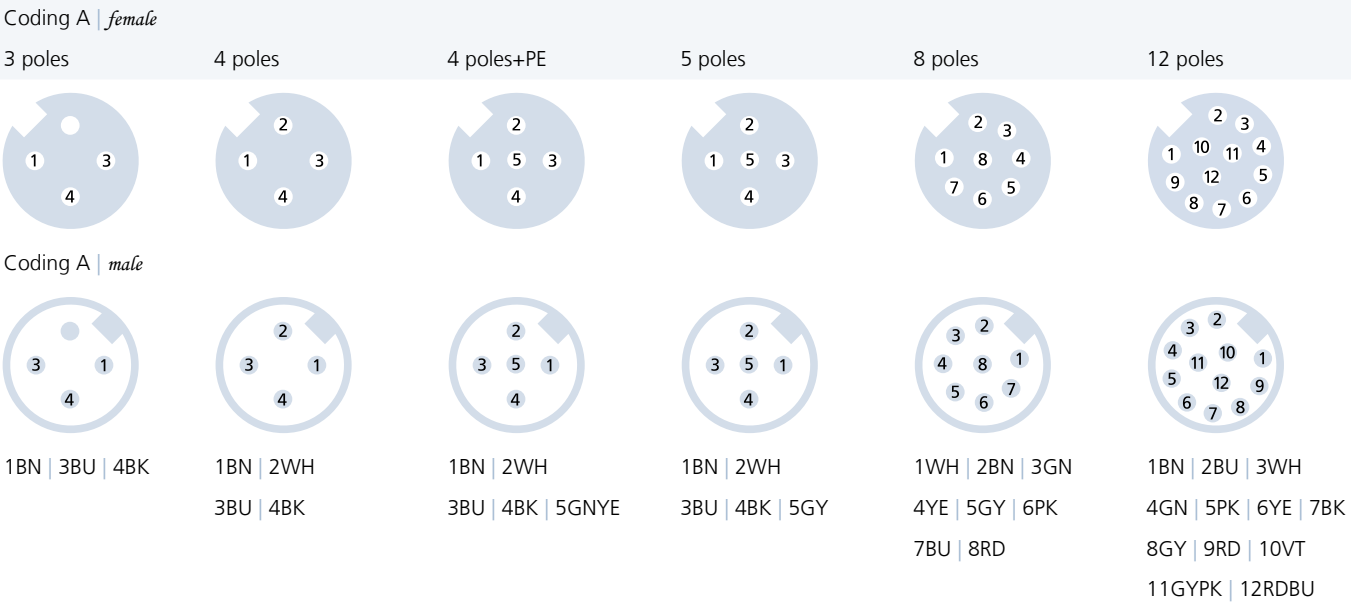
Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_M12x1	<i>f</i> ↑ __ <i>m</i> ↑	PUR S370 [®]	3	AL-WAK3-m-AL-WAS3/S370	8044858	8044029	8044030
			4	AL-WAK4-m-AL-WAS4/S370	8044813	8044041	8044042
			4+PE	AL-WAK5-m-AL-WAS5/S370	8046647	8046031	8046032
			5	AL-WAK4.5-m-AL-WAS4.5/S370	8050226	8044053	8044054
			8	AL-WAK8-m-AL-WAS8/S370	8049781	8046932	8046933
			12	AL-WAK12-m-AL-WAS12/S370	8051872	8046944	8046945
		PVC P00	3	AL-WAK3-m-AL-WAS3/P00	8051459	8051460	8051461
			4	AL-WAK4-m-AL-WAS4/P00	8051471	8051472	8051473
			4+PE	AL-WAK5-m-AL-WAS5/P00	8051495	8051496	8051497
			5	AL-WAK4.5-m-AL-WAS4.5/P00	8051483	8051484	8051485
			8	AL-WAK8-m-AL-WAS8/P00	8051507	8051508	8051509
			12	AL-WAK12-m-AL-WAS12/P00	8051519	8051520	8051521
	<i>f</i> ↑ __ <i>m</i> ↗	PVC P01 [®]	3	AL-WAK3-m-AL-WAS3/P01	8051667	8051668	8051669
			4	AL-WAK4-m-AL-WAS4/P01	8051679	8051680	8051681
			4+PE	AL-WAK5-m-AL-WAS5/P01	8051703	8051704	8051705
			5	AL-WAK4.5-m-AL-WAS4.5/P01	8051691	8051692	8051693
			8	AL-WAK8-m-AL-WAS8/P01	8051715	8051716	8051717
			12	AL-WAK12-m-AL-WAS12/P01	8051727	8051728	8051729
		PUR S370 [®]	3	AL-WAK3-m-AL-WWAS3/S370	8051873	8044035	8044036
			4	AL-WAK4-m-AL-WWAS4/S370	8051874	8044047	8044048
			4+PE	AL-WAK5-m-AL-WWAS5/S370	8046056	8046037	8046038
			5	AL-WAK4.5-m-AL-WWAS4.5/S370	8051875	8044059	8044060
			8	AL-WAK8-m-AL-WWAS8/S370	8051876	8046938	8046939
			12	AL-WAK12-m-AL-WWAS12/S370	8051877	8046950	8046951
	PVC P00	PVC P00	3	AL-WAK3-m-AL-WWAS3/P00	8051465	8051466	8051467
			4	AL-WAK4-m-AL-WWAS4/P00	8051477	8051478	8051479
			4+PE	AL-WAK5-m-AL-WWAS5/P00	8051501	8051502	8051503
			5	AL-WAK4.5-m-AL-WWAS4.5/P00	8051489	8051490	8051491
			8	AL-WAK8-m-AL-WWAS8/P00	8051513	8051514	8051515
			12	AL-WAK12-m-AL-WWAS12/P00	8051525	8051526	8051527
	PVC P01 [®]	PVC P01 [®]	3	AL-WAK3-m-AL-WWAS3/P01	8051673	8051674	8051675
			4	AL-WAK4-m-AL-WWAS4/P01	8051685	8051686	8051687
			4+PE	AL-WAK5-m-AL-WWAS5/P01	8051709	8051710	8051711
			5	AL-WAK4.5-m-AL-WWAS4.5/P01	8051697	8051698	8051699
			8	AL-WAK8-m-AL-WWAS8/P01	8051721	8051722	8051723
			12	AL-WAK12-m-AL-WWAS12/P01	8051733	8051734	8051735

Other versions and cable-lengths are available upon request.



Automation Line® M12x1 junction cable

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE, 5	60V
	8, 12	30V
Current load [Imax]	3, 4, 4+PE, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles



AL –

W

WAK

E*

3 –

m –

AL –

W

WAS

E*

3 /

S370

Cable quality

Poles

*optional: V4A locking mechanism

Round connector M12x1 | WAS: *male*

W: angled ↗ | without: straight ↑

Automation Line

Cable length [m]

Poles

*optional: V4A locking mechanism

Round connector M12x1 | WAK: *female*

W: angled ↗ | without: straight ↑

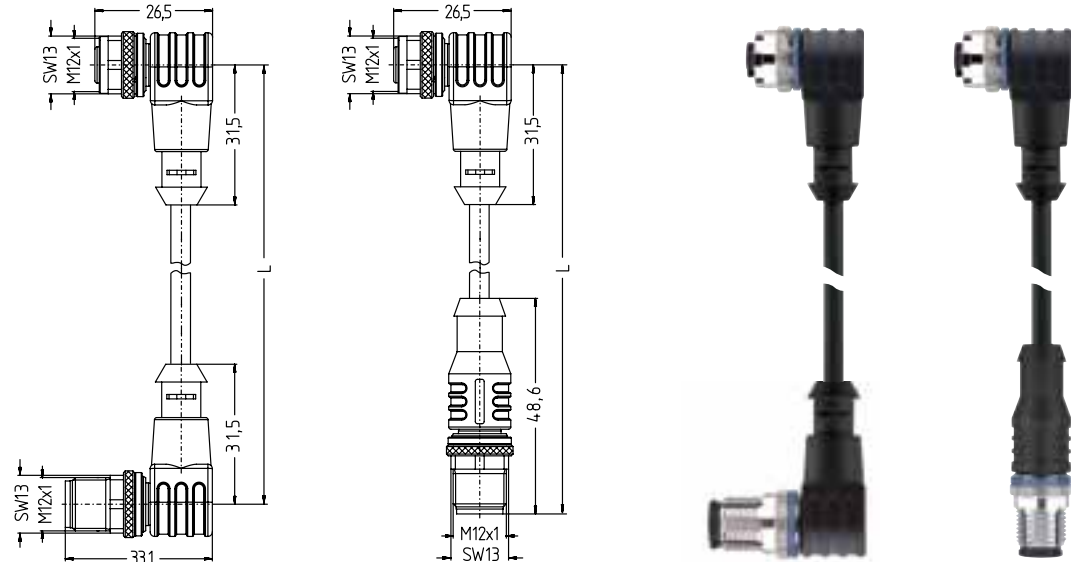
Automation Line



not for P00, 12-poles.

Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	5m	10m
AL_M12x1	<i>f</i> ↗ <i>m</i> ↑	PUR S370 [®]	3	AL-WWAK3-m-AL-WAS3/S370	8047133	8044038	8044039	
			4	AL-WWAK4-m-AL-WAS4/S370	8044664	8044050	8044051	
			4+PE	AL-WWAK5-m-AL-WAS5/S370	8046055	8046040	8046041	
			5	AL-WWAK4.5-m-AL-WAS4.5/S370	8050444	8044062	8044063	
			8	AL-WWAK8-m-AL-WAS8/S370	8048889	8046941	8046942	
			12	AL-WWAK12-m-AL-WAS12/S370	8051878	8046953	8046954	
		PVC P00	3	AL-WWAK3-m-AL-WAS3/P00	8051468	8051469	8051470	
			4	AL-WWAK4-m-AL-WAS4/P00	8051480	8051481	8051482	
			4+PE	AL-WWAK5-m-AL-WAS5/P00	8051504	8051505	8051506	
			5	AL-WWAK4.5-m-AL-WAS4.5/P00	8051492	8051493	8051494	
			8	AL-WWAK8-m-AL-WAS8/P00	8051516	8051517	8051518	
			12	AL-WWAK12-m-AL-WAS12/P00	8051528	8051529	8051530	
	<i>f</i> ↗ <i>m</i> ↗	PVC P01 [®]	3	AL-WWAK3-m-AL-WAS3/P01	8051676	8051677	8051678	
			4	AL-WWAK4-m-AL-WAS4/P01	8051688	8051689	8051690	
			4+PE	AL-WWAK5-m-AL-WAS5/P01	8051712	8051713	8051714	
			5	AL-WWAK4.5-m-AL-WAS4.5/P01	8051700	8051701	8051702	
			8	AL-WWAK8-m-AL-WAS8/P01	8051724	8051725	8051726	
			12	AL-WWAK12-m-AL-WAS12/P01	8051736	8051737	8051738	
		PUR S370 [®]	3	AL-WWAK3-m-AL-WWAS3/S370	8049108	8044032	8044033	
			4	AL-WWAK4-m-AL-WWAS4/S370	8051879	8044044	8044045	
			4+PE	AL-WWAK5-m-AL-WWAS5/S370	8051881	8046034	8046035	
			5	AL-WWAK4.5-m-AL-WWAS4.5/S370	8051880	8044056	8044057	
			8	AL-WWAK8-m-AL-WWAS8/S370	8051882	8046935	8046936	
			12	AL-WWAK12-m-AL-WWAS12/S370	8051883	8046947	8046948	
	PVC P00	PVC P00	3	AL-WWAK3-m-AL-WWAS3/P00	8051462	8051463	8051464	
			4	AL-WWAK4-m-AL-WWAS4/P00	8051474	8051475	8051476	
			4+PE	AL-WWAK5-m-AL-WWAS5/P00	8051498	8051499	8051500	
			5	AL-WWAK4.5-m-AL-WWAS4.5/P00	8051486	8051487	8051488	
			8	AL-WWAK8-m-AL-WWAS8/P00	8051510	8051511	8051512	
			12	AL-WWAK12-m-AL-WWAS12/P00	8051522	8051523	8051524	
	PVC P01 [®]	PVC P01 [®]	3	AL-WWAK3-m-AL-WWAS3/P01	8051671	8051670	8051672	
			4	AL-WWAK4-m-AL-WWAS4/P01	8051682	8051683	8051684	
			4+PE	AL-WWAK5-m-AL-WWAS5/P01	8051706	8051707	8051708	
			5	AL-WWAK4.5-m-AL-WWAS4.5/P01	8051694	8051695	8051696	
			8	AL-WWAK8-m-AL-WWAS8/P01	8051718	8051719	8051720	
			12	AL-WWAK12-m-AL-WWAS12/P01	8051730	8051731	8051732	

Other versions and cable-lengths are available upon request.



Automation Line® M12x1 junction cable

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE, 5	60V
	8, 12	30V
Current load [Imax]	3, 4, 4+PE, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carriers	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Coding A | *female*

3 poles

4 poles

4 poles+PE

5 poles

8 poles

12 poles

Coding A | *male*

1BN | 3BU | 4BK

1BN | 2WH
3BU | 4BK

1BN | 2WH
3BU | 4BK | 5GNYE

1BN | 2WH
3BU | 4BK | 5GY

1WH | 2BN | 3GN
4YE | 5GY | 6PK
7BU | 8RD

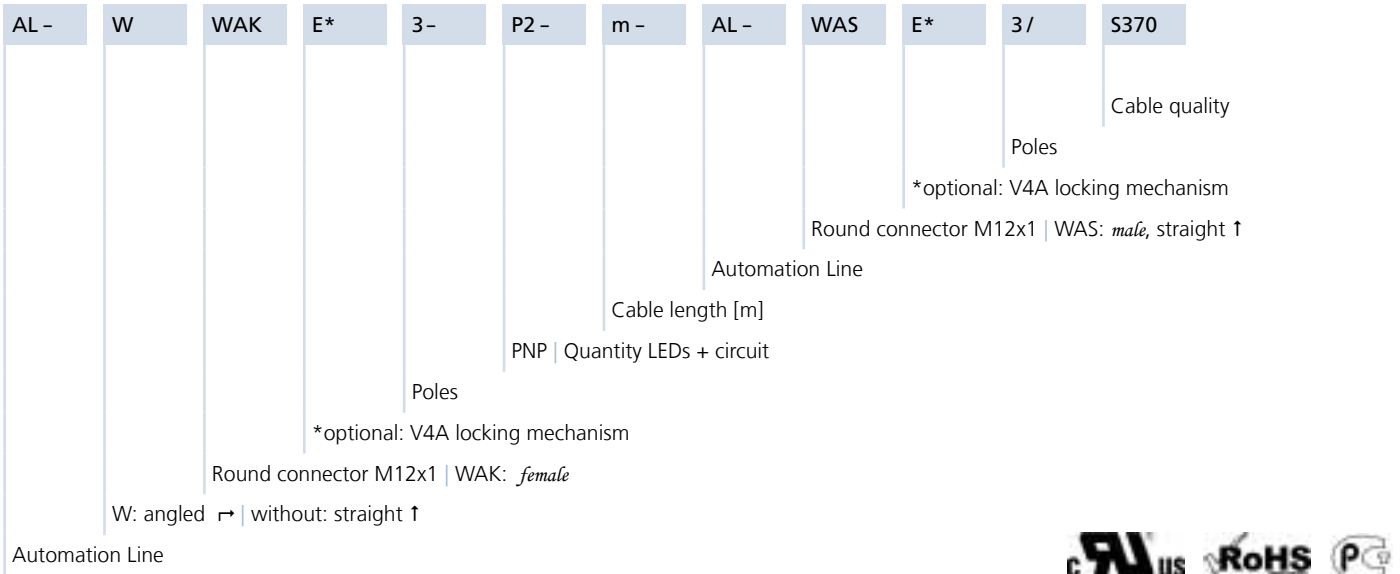
1BN | 2BU | 3WH
4GN | 5PK | 6YE | 7BK
8GY | 9RD | 10VT
11GYPK | 12RDBU

M 12x1

Automation Line®

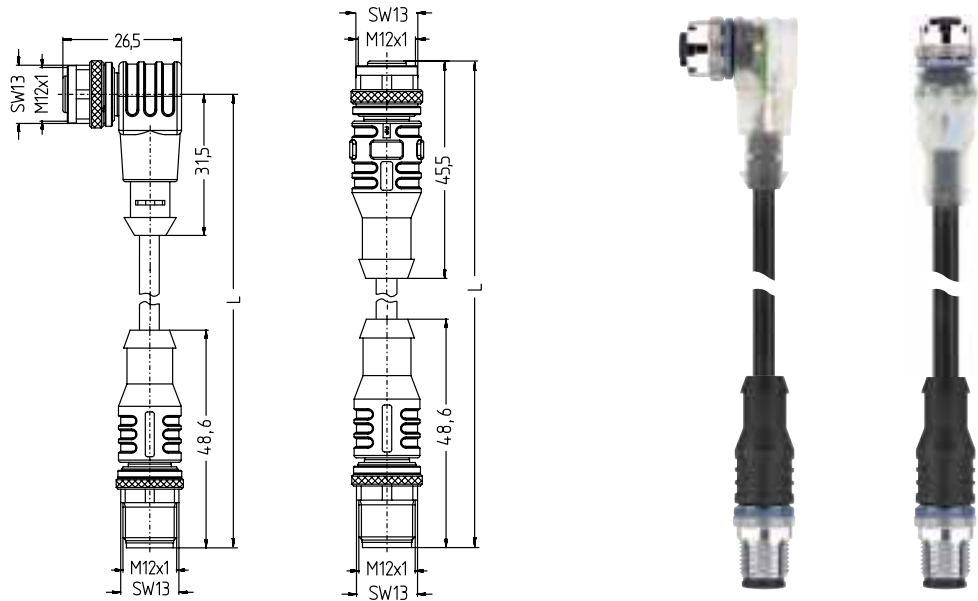
20

21



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m10m
AL_M12x1	<i>f</i> ↑ LED2 __ <i>m</i> ↑	PUR S370 [®]	3	AL-WAK3P2-m-AL-WAS3/S370	8052751	80498958049896
	LED2		4	AL-WAK4P2-m-AL-WAS4/S370	8049946	80520648052065
	LED2	PVC P00	3	AL-WAK3P2-m-AL-WAS3/P00	8052745	80527478052746
	LED2		4	AL-WAK4P2-m-AL-WAS4/P00	8052520	80525218052522
	LED2	PVC P01 [®]	3	AL-WAK3P2-m-AL-WAS3/P01	8052749	80527488052750
	LED2		4	AL-WAK4P2-m-AL-WAS4/P01	8052523	80525248052525
	<i>f</i> ↗ LED2 __ <i>m</i> ↑	PUR S370 [®]	3	AL-WWAK3P2-m-AL-WAS3/S370	8048160	80455798045503
	LED2		4	AL-WWAK4P2-m-AL-WAS4/S370	8043925	80459208045921
	LED3		4	AL-WWAK4P3-m-AL-WAS4/S370	8049739	80459238045924
	LED3.1		4	AL-WWAK4P3.1-m-AL-WAS4/S370	8051884	80459268045927
	LED3.2		4	AL-WWAK4P3.2-m-AL-WAS4/S370	8048140	80459298045930
	LED3		4+PE	AL-WWAK5P3-m-AL-WAS5/S370	8051885	80455818045583
	LED3.1		4+PE	AL-WWAK5P3.1-m-AL-WAS5/S370	8045017	80456618045662
	LED2	PVC P00	3	AL-WWAK3P2-m-AL-WAS3/P00	8051537	80515388051539
	LED2		4	AL-WWAK4P2-m-AL-WAS4/P00	8051540	80515418051542
	LED3		4	AL-WWAK4P3-m-AL-WAS4/P00	8051543	80515458051544
	LED3.1		4	AL-WWAK4P3.1-m-AL-WAS4/P00	8051546	80515478051548
	LED3.2		4	AL-WWAK4P3.2-m-AL-WAS4/P00	8051549	80515508051551
	LED3		4+PE	AL-WWAK5P3-m-AL-WAS5/P00	8051552	80515538051554
	LED3.1		4+PE	AL-WWAK5P3.1-m-AL-WAS5/P00	8051555	80515568051557
	LED2	PVC P01 [®]	3	AL-WWAK3P2-m-AL-WAS3/P01	8051745	80517468051747
	LED2		4	AL-WWAK4P2-m-AL-WAS4/P01	8051748	80517498051750
	LED3		4	AL-WWAK4P3-m-AL-WAS4/P01	8051751	80517528051753
	LED3.1		4	AL-WWAK4P3.1-m-AL-WAS4/P01	8051754	80517558051756
	LED3.2		4	AL-WWAK4P3.2-m-AL-WAS4/P01	8051757	80517588051759
	LED3		4+PE	AL-WWAK5P3-m-AL-WAS5/P01	8051760	80517618051762
	LED3.1		4+PE	AL-WWAK5P3.1-m-AL-WAS5/P01	8051763	80517648051765

Other versions and cable-lengths are available upon request.

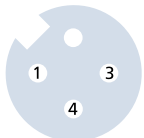


Automation Line® M12x1 junction cable

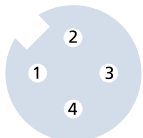
Technical data	Poles	Value
Rated voltage [U _{max}]	3, 4, 4+PE	10...24V _{DC}
Current load [I _{max}]	3, 4, 4+PE	4A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK LED-version: TPU, transparent
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Coding A

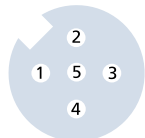
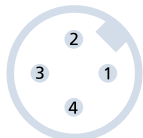
3 poles | *female*3 poles | *male*4 poles | *female*4 poles | *male*4 poles+PE | *female*4 poles+PE | *male*



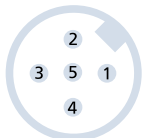
1BN | 3BU | 4BK



1BN | 2WH | 3BU | 4BK

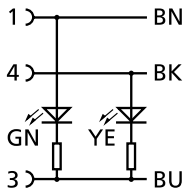


1BN | 2WH | 3BU | 4BK | 5GNYE

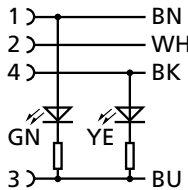


LED-versions

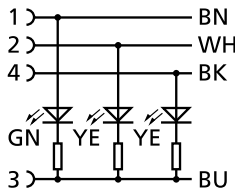
3P2



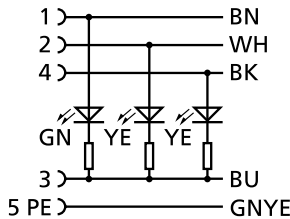
4P2



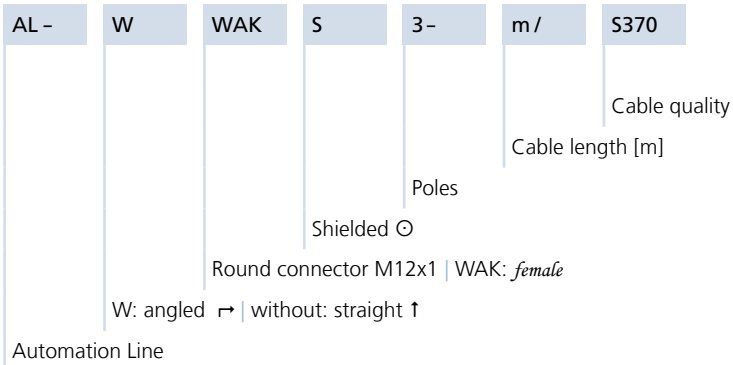
4P3



5P3

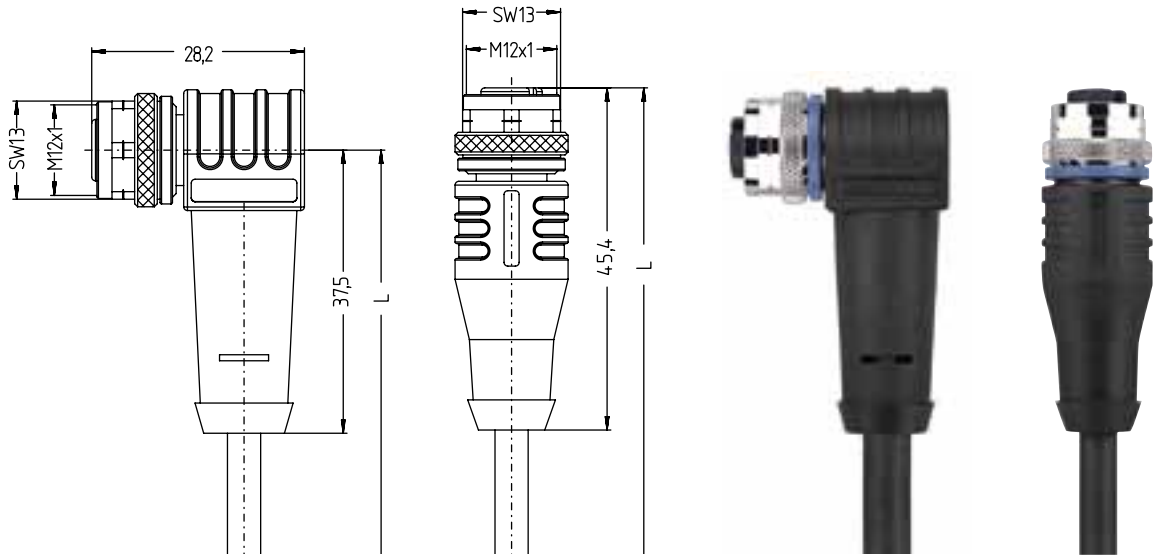


3.1 = GN/RD/YE | 3.2 = GN/WH/YE



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M12x1 ☉	f ↑	PUR S370 [®]	3	AL-WAKS3-m/S370	8046217	8046218	8046219
			4	AL-WAKS4-m/S370	8046229	8046230	8046231
			5	AL-WAKS4.5-m/S370	8045557	8046239	8046240
			8	AL-WAKS8-m/S370	8046990	8046991	8046992
			12	AL-WAKS12-m/S370	8047001	8047002	8047003
		PVC P00	3	AL-WAKS3-m/P00	8051164	8051165	8051166
			4	AL-WAKS4-m/P00	8051176	8051177	8051178
			5	AL-WAKS4.5-m/P00	8051188	8051189	8051190
		PVC P01 [®]	8	AL-WAKS8-m/P00	8051200	8051201	8051202
			12	AL-WAKS12-m/P00	8051212	8051213	8051214
			3	AL-WAKS3-m/P01	8051374	8051375	8051376
			4	AL-WAKS4-m/P01	8051386	8051387	8051388
	f ↗	PUR S370 [®]	5	AL-WAKS4.5-m/P01	8051398	8051399	8051400
			8	AL-WAKS8-m/P01	8051410	8051411	8051412
			12	AL-WAKS12-m/P01	8051422	8051423	8051424
			3	AL-WWAKS3-m/S370	8046220	8046221	8046222
			4	AL-WWAKS4-m/S370	8046232	8045279	8045280
		PVC P00	5	AL-WWAKS4.5-m/S370	8045558	8046242	8046243
			8	AL-WWAKS8-m/S370	8046993	8046994	8046995
			12	AL-WWAKS12-m/S370	8047004	8047005	8047006
		PVC P01 [®]	3	AL-WWAKS3-m/P00	8051167	8051168	8051169
			4	AL-WWAKS4-m/P00	8051179	8051180	8051181
			5	AL-WWAKS4.5-m/P00	8051191	8051192	8051193
			8	AL-WWAKS8-m/P00	8051203	8051204	8051205
	12		AL-WWAKS12-m/P00	8051216	8051217	8051218	
	3		AL-WWAKS3-m/P01	8051377	8051378	8051379	
	4		AL-WWAKS4-m/P01	8051389	8051390	8051391	
	5		AL-WWAKS4.5-m/P01	8051401	8051402	8051403	
		8	AL-WWAKS8-m/P01	8051413	8051414	8051415	
		12	AL-WWAKS12-m/P01	8051425	8051426	8051427	

Other versions and cable-lengths are available upon request.

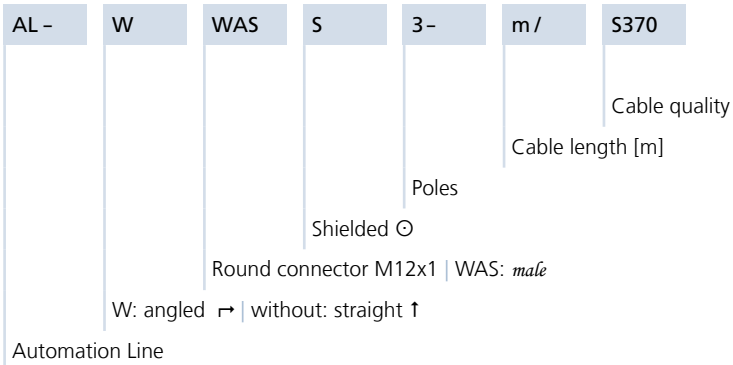


Automation Line M12x1 shielded female

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
	8, 12	30V
Current load [Imax]	3, 4, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

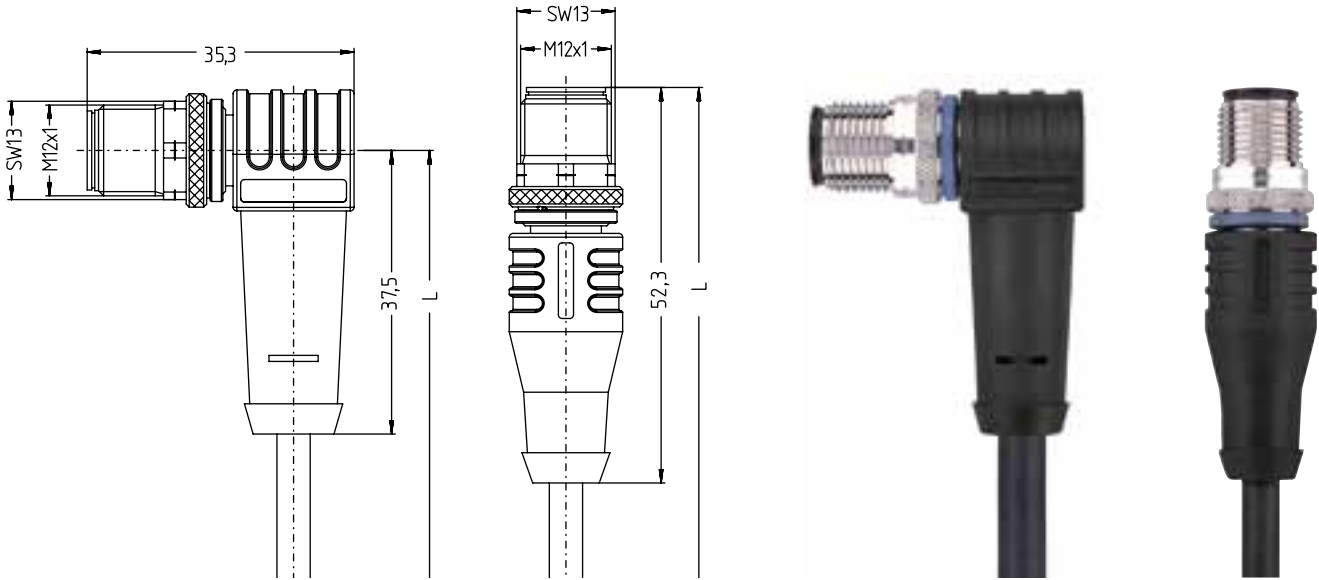
Coding A female

3 poles	4 poles	5 poles	8 poles	12 poles
1BN 3BU 4BK	1BN 2WH 3BU 4BK	1BN 2WH 3BU 4BK 5GY	1WH 2BN 3GN 4YE 5GY 6PK 7BU 8RD	1BN 2BU 3WH 4GN 5PK 6YE 7BK 8GY 9RD 10VT 11GYPK 12RDBU



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M12x1 ☉	<i>m</i> ↑	PUR S370 [®]	3	AL-WASS3-m/S370	8046223	8046224	8046225
			4	AL-WASS4-m/S370	8046233	8046234	8046235
			5	AL-WASS4.5-m/S370	8045559	8046244	8046245
			8	AL-WASS8-m/S370	8046807	8046996	8046997
			12	AL-WASS12-m/S370	8047007	8047008	8047009
		PVC P00	3	AL-WASS3-m/P00	8051170	8051171	8051172
			4	AL-WASS4-m/P00	8051182	8051183	8051184
			5	AL-WASS4.5-m/P00	8051194	8051195	8051196
			8	AL-WASS8-m/P00	8051206	8051207	8051208
			12	AL-WASS12-m/P00	8051219	8051220	8051221
		PVC P01 [®]	3	AL-WASS3-m/P01	8051380	8051381	8051382
			4	AL-WASS4-m/P01	8051392	8051393	8051394
			5	AL-WASS4.5-m/P01	8051404	8051405	8051406
			8	AL-WASS8-m/P01	8051416	8051417	8051418
			12	AL-WASS12-m/P01	8051428	8051429	8051430
	<i>m</i> ↗	PUR S370 [®]	3	AL-WWASS3-m/S370	8046226	8046227	8046228
			4	AL-WWASS4-m/S370	8046236	8046237	8046238
			5	AL-WWASS4.5-m/S370	8045560	8044617	8044618
			8	AL-WWASS8-m/S370	8046998	8046999	8047000
			12	AL-WWASS12-m/S370	8047010	8047011	8047012
		PVC P00	3	AL-WWASS3-m/P00	8051173	8051174	8051175
			4	AL-WWASS4-m/P00	8051185	8051186	8051187
			5	AL-WWASS4.5-m/P00	8051198	8051197	8051199
			8	AL-WWASS8-m/P00	8051209	8051210	8051211
			12	AL-WWASS12-m/P00	8051222	8051223	8051224
		PVC P01 [®]	3	AL-WWASS3-m/P01	8051383	8051384	8051385
			4	AL-WWASS4-m/P01	8051395	8051396	8051397
			5	AL-WWASS4.5-m/P01	8051407	8051408	8051409
			8	AL-WWASS8-m/P01	8051419	8051420	8051421
			12	AL-WWASS12-m/P01	8051431	8051432	8051433

Other versions and cable-lengths are available upon request.

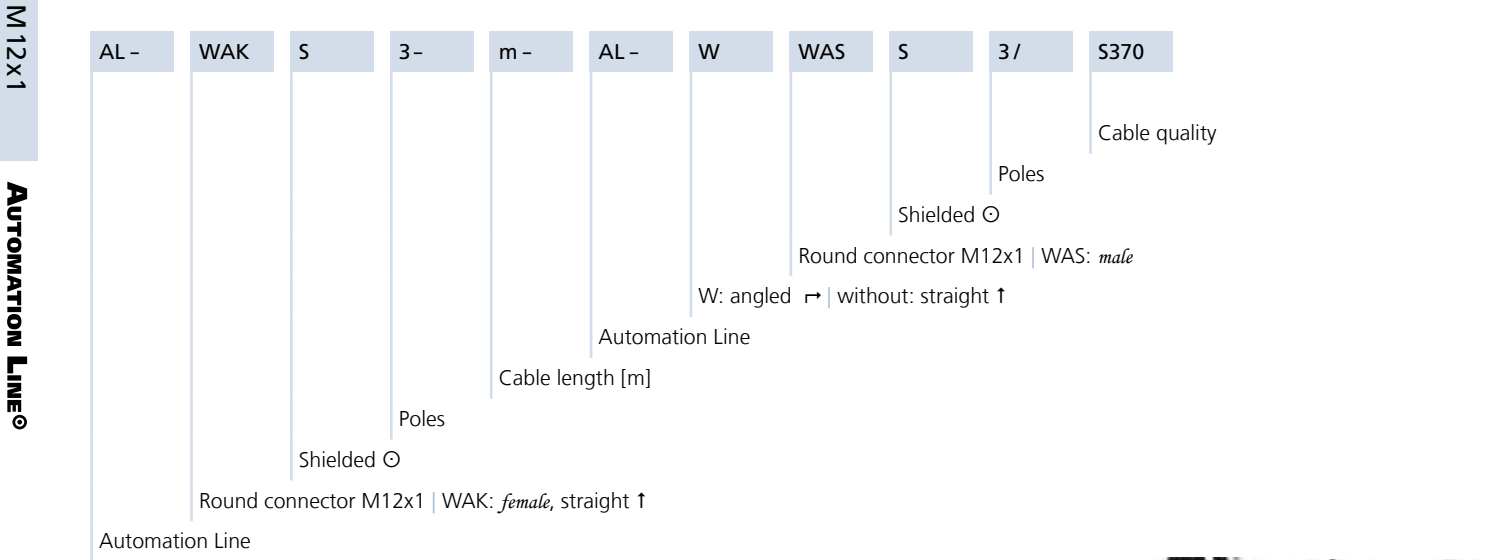


Automation Line® M12x1 shielded ☉ | male

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
	8, 12	30V
Current load [Imax]	3, 4, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

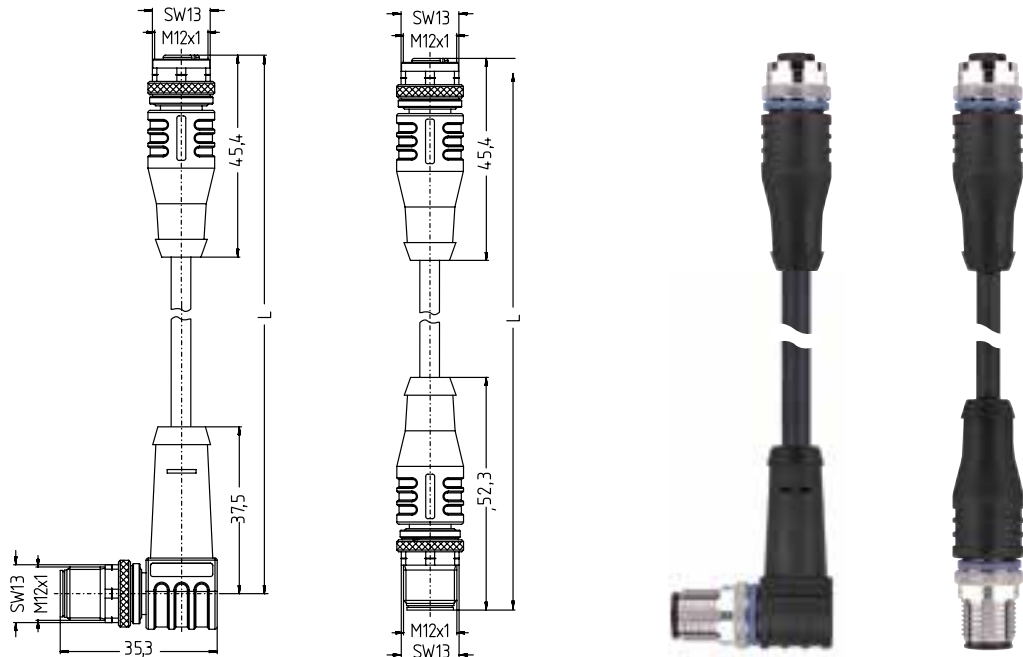
Coding A | male

3 poles	4 poles	5 poles	8 poles	12 poles
1BN 3BU 4BK	1BN 2WH 3BU 4BK	1BN 2WH 3BU 4BK 5GY	1WH 2BN 3GN 4YE 5GY 6PK 7BU 8RD	1BN 2BU 3WH 4GN 5PK 6YE 7BK 8GY 9RD 10VT 11GYPK 12RDBU



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m10m
AL_M12x1 ☉	<i>f</i> ↑__ <i>m</i> ↑	PUR S370 [®]	3	AL-WAKS3-m-AL-WASS3/S370	8051886	80462708046271
			4	AL-WAKS4-m-AL-WASS4/S370	8048241	80462828046283
			5	AL-WAKS4.5-m-AL-WASS4.5/S370	8047973	80462948046295
			8	AL-WAKS8-m-AL-WASS8/S370	8051887	80469688047013
			12	AL-WAKS12-m-AL-WASS12/S370	8051888	80470248047025
		PVC P00	3	AL-WAKS3-m-AL-WASS3/P00	8051582	80515838051584
			4	AL-WAKS4-m-AL-WASS4/P00	8051594	80515958051596
			5	AL-WAKS4.5-m-AL-WASS4.5/P00	8051606	80516078051608
			8	AL-WAKS8-m-AL-WASS8/P00	8051618	80516198051620
			12	AL-WAKS12-m-AL-WASS12/P00	8051630	80516318051632
		PVC P01 [®]	3	AL-WAKS3-m-AL-WASS3/P01	8051790	80517918051792
			4	AL-WAKS4-m-AL-WASS4/P01	8051802	80518038051804
			5	AL-WAKS4.5-m-AL-WASS4.5/P01	8051814	80518158051816
			8	AL-WAKS8-m-AL-WASS8/P01	8051826	80518278051828
			12	AL-WAKS12-m-AL-WASS12/P01	8051838	80518398051840
	<i>f</i> ↑__ <i>m</i> ↗	PUR S370 [®]	3	AL-WAKS3-m-AL-WWASS3/S370	8051889	80462768046277
			4	AL-WAKS4-m-AL-WWASS4/S370	8048802	80462888046289
			5	AL-WAKS4.5-m-AL-WWASS4.5/S370	8051890	80463008046301
			8	AL-WAKS8-m-AL-WWASS8/S370	8051891	80470188047019
			12	AL-WAKS12-m-AL-WWASS12/S370	8051892	80470308047031
		PVC P00	3	AL-WAKS3-m-AL-WWASS3/P00	8051588	80515898051590
			4	AL-WAKS4-m-AL-WWASS4/P00	8051600	80516018051602
			5	AL-WAKS4.5-m-AL-WWASS4.5/P00	8051612	80516138051614
			8	AL-WAKS8-m-AL-WWASS8/P00	8051624	80516258051626
			12	AL-WAKS12-m-AL-WWASS12/P00	8051636	80516378051638
		PVC P01 [®]	3	AL-WAKS3-m-AL-WWASS3/P01	8051796	80517978051798
			4	AL-WAKS4-m-AL-WWASS4/P01	8051808	80518098051810
			5	AL-WAKS4.5-m-AL-WWASS4.5/P01	8051820	80518218051822
			8	AL-WAKS8-m-AL-WWASS8/P01	8051832	80518338051834
			12	AL-WAKS12-m-AL-WWASS12/P01	8051844	80518458051846

Other versions and cable-lengths are available upon request.

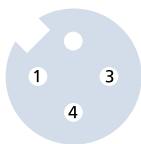


Automation Line® M12x1 junction cable | shielded ☉

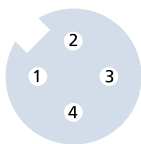
Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
	8, 12	30V
Current load [Imax]	3, 4, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Coding A | *female*

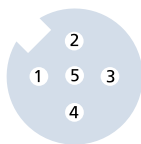
3 poles



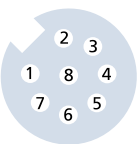
4 poles



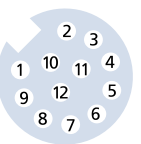
5 poles



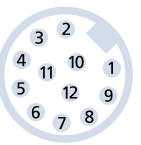
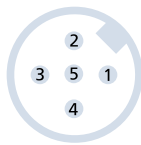
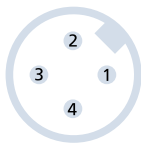
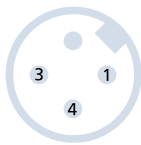
8 poles



12 poles



Coding A | *male*



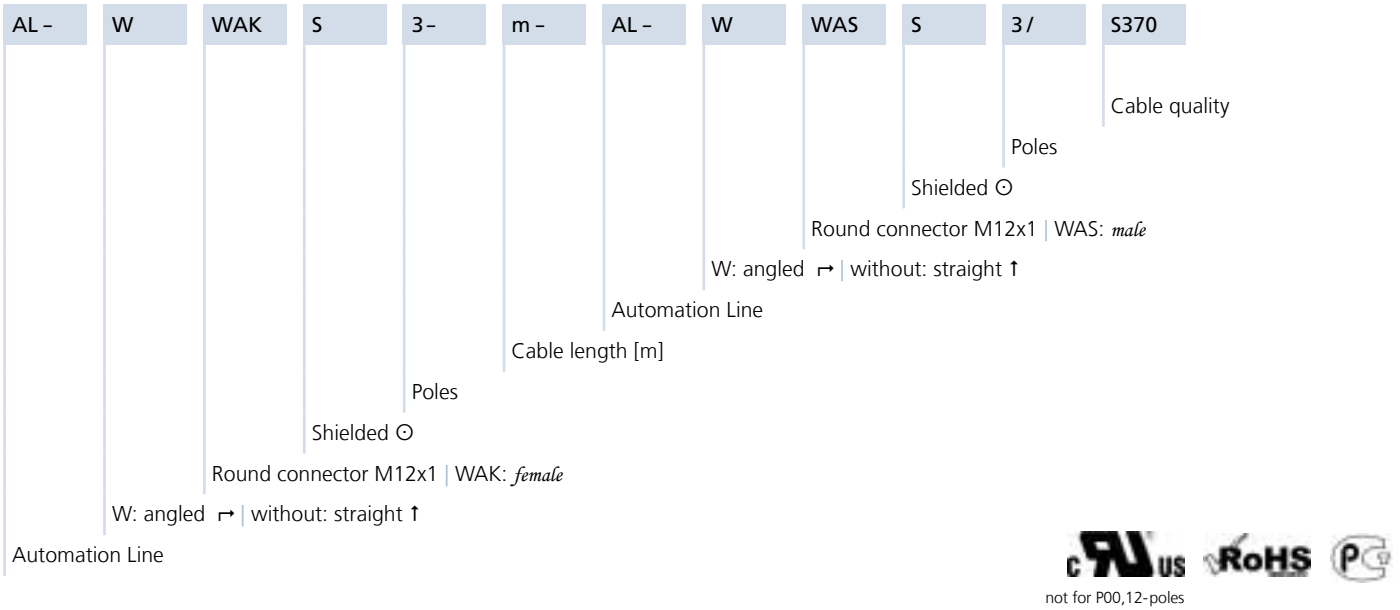
1BN | 3BU | 4BK

1BN | 2WH
3BU | 4BK

1BN | 2WH
3BU | 4BK | 5GY

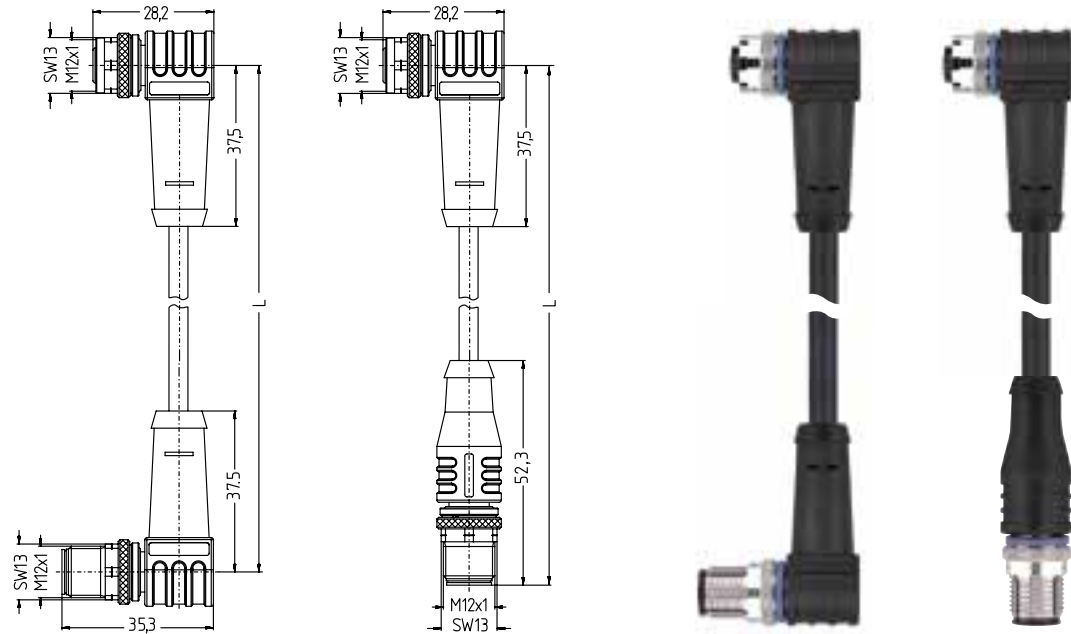
1WH | 2BN | 3GN
4YE | 5GY | 6PK
7BU | 8RD

1BN | 2BU | 3WH | 4GN | 5PK | 6YE
7BK | 8GY | 9RD | 10VT 11GYPK | 12RDBU



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m10m
AL_M12x1 Ⓞ	<i>f</i> ↗ <i>m</i> ↑	PUR S370 ®	3	AL-WWAKS3-m-AL-WASS3/S370	8051904	80462798046280
			4	AL-WWAKS4-m-AL-WASS4/S370	8049426	80462918046292
			5	AL-WWAKS4.5-m-AL-WASS4.5/S370	8051897	80463038046304
			8	AL-WWAKS8-m-AL-WASS8/S370	8051898	80470218047022
			12	AL-WWAKS12-m-AL-WASS12/S370	8051899	80470338047034
	PVC P00		3	AL-WWAKS3-m-AL-WASS3/P00	8051591	80515928051593
			4	AL-WWAKS4-m-AL-WASS4/P00	8051603	80516048051605
			5	AL-WWAKS4.5-m-AL-WASS4.5/P00	8051615	80516168051617
			8	AL-WWAKS8-m-AL-WASS8/P00	8051627	80516288051629
			12	AL-WWAKS12-m-AL-WASS12/P00	8051639	80516408051641
	PVC P01 ®		3	AL-WWAKS3-m-AL-WASS3/P01	8051799	80518008051801
			4	AL-WWAKS4-m-AL-WASS4/P01	8051811	80518128051813
			5	AL-WWAKS4.5-m-AL-WASS4.5/P01	8051823	80518248051825
			8	AL-WWAKS8-m-AL-WASS8/P01	8051835	80518368051837
			12	AL-WWAKS12-m-AL-WASS12/P01	8051847	80518488051849
	<i>f</i> ↗ <i>m</i> ↗	PUR S370 ®	3	AL-WWAKS3-m-AL-WWASS3/S370	8051900	80462738046274
			4	AL-WWAKS4-m-AL-WWASS4/S370	8051901	80462858046286
			5	AL-WWAKS4.5-m-AL-WWASS4.5/S370	8051902	80462978046298
			8	AL-WWAKS8-m-AL-WWASS8/S370	8048908	80470158047016
			12	AL-WWAKS12-m-AL-WWASS12/S370	8051903	80470278047028
	PVC P00		3	AL-WWAKS3-m-AL-WWASS3/P00	8051585	80515868051587
			4	AL-WWAKS4-m-AL-WWASS4/P00	8051597	80515988051599
			5	AL-WWAKS4.5-m-AL-WWASS4.5/P00	8051609	80516108051611
			8	AL-WWAKS8-m-AL-WWASS8/P00	8051621	80516228051623
			12	AL-WWAKS12-m-AL-WWASS12/P00	8051633	80516348051635
	PVC P01 ®		3	AL-WWAKS3-m-AL-WWASS3/P01	8051793	80517948051795
			4	AL-WWAKS4-m-AL-WWASS4/P01	8051805	80518068051807
			5	AL-WWAKS4.5-m-AL-WWASS4.5/P01	8051817	80518188051819
			8	AL-WWAKS8-m-AL-WWASS8/P01	8051829	80518308051831
			12	AL-WWAKS12-m-AL-WWASS12/P01	8051841	80518428051843

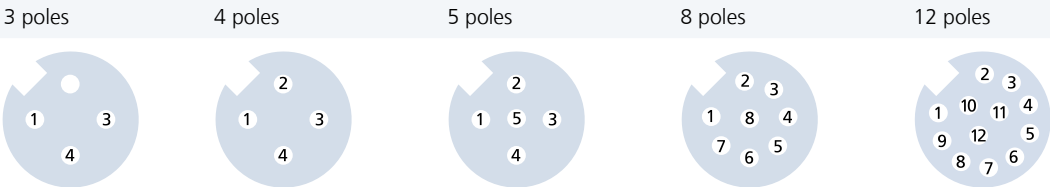
Other versions and cable-lengths are available upon request.



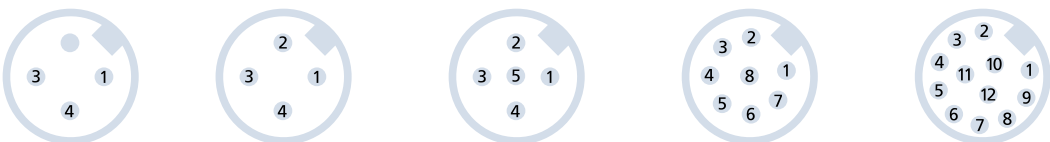
Automation Line® M12x1 junction cable | shielded Ⓞ

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
	8, 12	30V
Current load [Imax]	3, 4, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

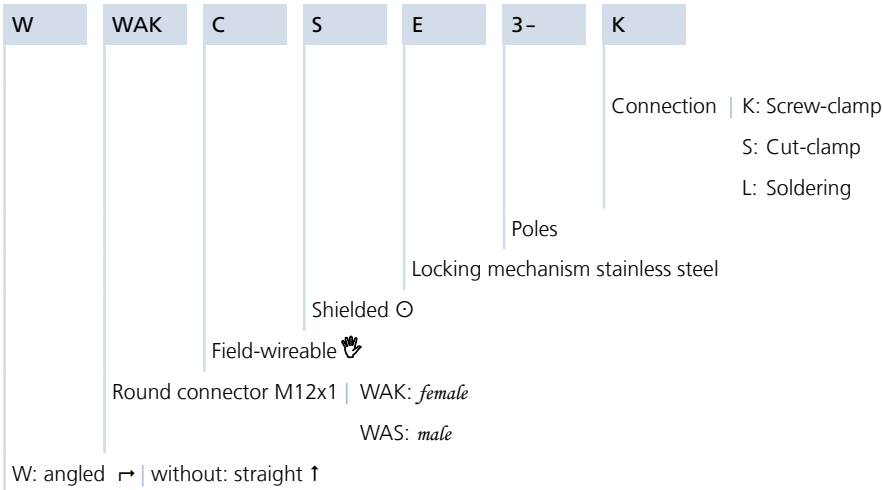
Coding A | *female*



Coding A | *male*

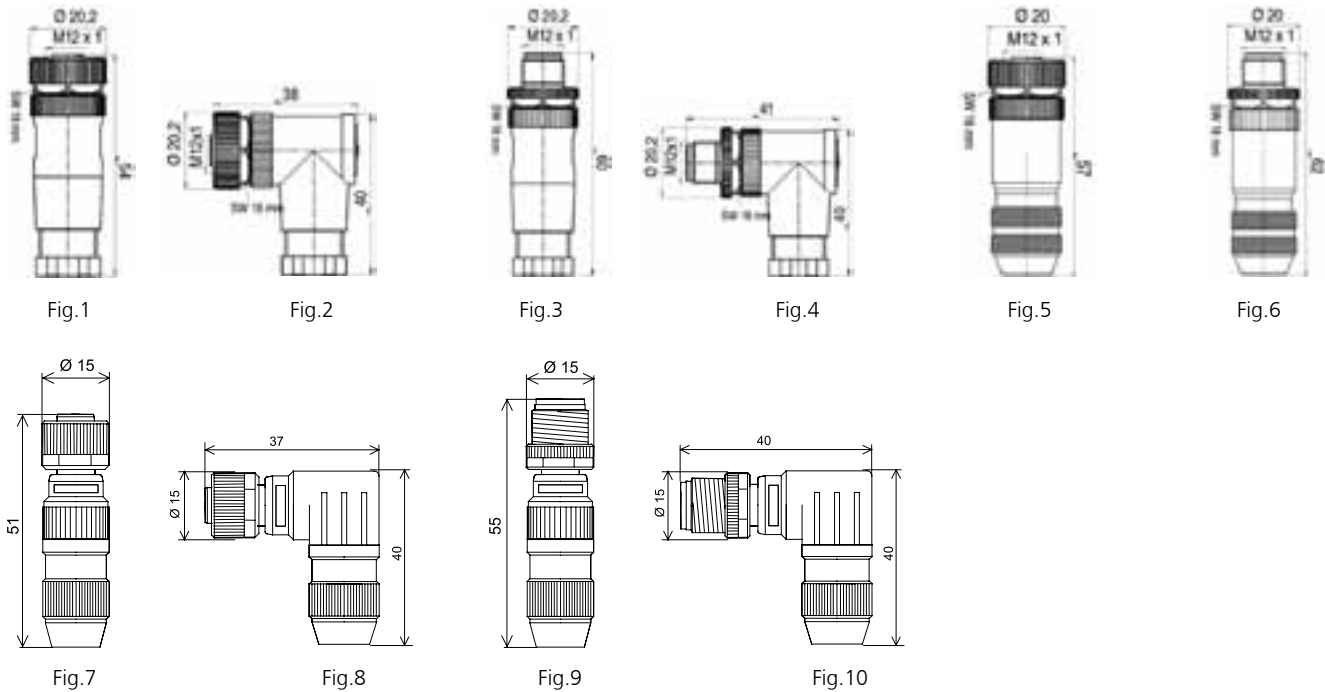


- 1BN | 3BU | 4BK
- 1BN | 2WH
3BU | 4BK
- 1BN | 2WH
3BU | 4BK | 5GY
- 1WH | 2BN | 3GN
4YE | 5GY | 6PK
7BU | 8RD
- 1BN | 2BU | 3WH | 4GN | 5PK | 6YE
7BK | 8GY | 9RD | 10VT 11GYPK | 12RDBU

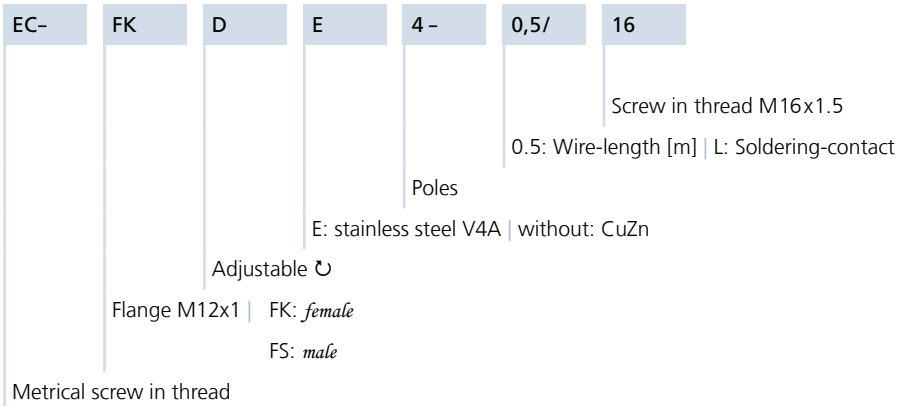


Product line	Version	Connection	Figure	Poles	Type-designation	Order-No.
M12x1	Screw-clamp	f ↑	Fig. 1	4	WAKC4K	8004811
				5	WAKC5K	8004815
				8	WAKC8K	8021862
		f ↗	Fig.2	4	WWAKC4K	8004808
				5	WWAKC5K	8004809
				8	WWAKC8K	8041146
		m ↑	Fig. 3	4	WASC4K	8004804
				5	WASC5K	8004805
				8	WASC8K	8021863
		m ↗	Fig. 4	4	WWASC4K	8004806
				5	WWASC5K	8004807
				8	WWASC8K	8052219
	Cut-clamp	f ↑ ○	Fig. 5	4	WAKCS4K	8035253
				5	WAKCS5K	8035254
				8	WAKCS8K	8035193
		m ↑ ○	Fig. 6	4	WASCS4K	8035251
				5	WASCS5K	8035252
				8	WASCS8K	8035192
		f ↑	Fig. 7	3	WAKC3S	8019714
				4	WAKC4S	8019718
				4	WWAKC3S	8019715
		f ↗	Fig. 8	3	WWAKC3S	8019715
				4	WWAKC4S	8019719
				4	WWAKC4S	8019719
	Soldering	m ↑	Fig. 9	3	WASC3S	8019712
				4	WASC4S	8019716
				4	WWASC3S	8019713
		m ↗	Fig. 10	3	WWASC3S	8019713
				4	WWASC4S	8019717
				4	WWASC4S	8019717
		f ↑	Fig. 1	12	WAKC12L	8031858
				12	WWAKC12L	8031859
				12	WWAKC12L	8031859
		f ↗	Fig. 2	12	WWAKC12L	8031859
				12	WWAKC12L	8031859
				12	WWAKC12L	8031859
		m ↑	Fig. 3	12	WASC12L	8031860
				12	WWASC12L	8031861
				12	WWASC12L	8031861
		m ↗	Fig. 4	12	WWASC12L	8031861
				12	WWASC12L	8031861
				12	WWASC12L	8031861
		f ↑ ○	Fig. 5	12	WAKCS12L	8052220
				12	WAKCS12L	8052220
				12	WAKCS12L	8052220
		m ↑ ○	Fig. 6	12	WASCS12L	8037435
				12	WASCS12L	8037435
				12	WASCS12L	8037435

Other versions are available upon request.

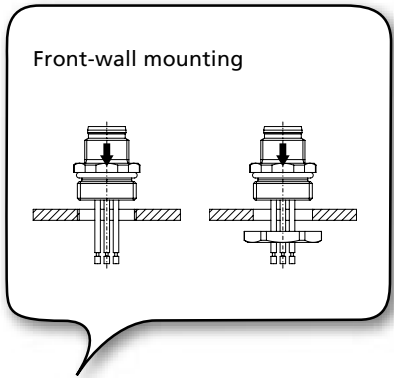


M12x1 field-wireable				
Technical data	unshielded		shielded ○	
	Connection	Pole: Value	Connection	Poles: Value
Rated voltage [Umax]	Screw-clamp	4: 250V 5: 125V 8: 60V	Screw-clamp	4: 120V 5: 60V 8: 30V
	Cut-clamp	3, 4: 32V		
	Soldering	12: 30V	Soldering	12: 30V
Current load [Imax]	Screw-clamp	4, 5: 4A 8: 2A	Screw-clamp	4,5: 4A 8: 2A
	Cut-clamp	3, 4: 3A		
	Soldering	12: 1.5A	Soldering	12: 1.5A
Insulation resistance		≥ 10 ⁸ Ω		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101		IEC 61076-2-101
Materials	Grip	PA, BK	Grip	CuZn
	Contact carrier	PA, BK	Contact carrier	PA, BK
	Contacts	CuZn, CuSnZn	Contacts	CuZn, CuSnZn
Ambient temperature	Screw-clamp	-40°C...+85°C	Screw-clamp	-25°C...+85°C
	Cut-clamp	-25°C...+85°C		
	Soldering	-25°C...+85°C	Soldering	-25°C...+85°C
Degree of pollution		3		3
Protection class (in threaded condition)		IP67		IP67
External diameter of the cable	Screw-clamp	3...6,5mm	Screw-clamp	4...6mm
	Cut-clamp	4...5.1mm		
	Soldering	6...8mm	Soldering	6...8mm
Core cross-section/Clamping ability	Screw-clamp	max. 0.5mm ²	Screw-clamp	max. 0.75mm ²
	Cut-clamp	max. 0.5mm ²		
	Soldering	max. 0.25mm ²	Soldering	max. 0.14mm ²



Product line	Version	Poles	Soldering-contact		Wire-contact	
			Type-designation	Order-No.	Type-designation	Order-No.
Front-wall mounting (optional threaded rear)	<i>f</i> ↑ CuZn	3	EC-FK3-L/16	8027566	EC-FK3-0,5/16	8027515
		4	EC-FK4-L/16	8027569	EC-FK4-0,5/16	8027516
		4+PE	EC-FK5-L/16	8027570	EC-FK5-0,5/16	8027520
		5	EC-FK4.5-L/16	8052079	EC-FK4.5-0,5/16	8027519
		8	EC-FK8-L/16	8028122	EC-FK8-0,5/16	8028110
		12	EC-FK12-L/16	8028124	EC-FK12-0,5/16	8028116
	<i>f</i> ↑ CuZn ⤴	3			EC-FKD3-0,5/16	8027526
		4			EC-FKD4-0,5/16	8027527
		4+PE			EC-FKD5-0,5/16	8027529
		5			EC-FKD4.5-0,5/16	8027528
		8			EC-FKD8-0,5/16	8028111
		12			EC-FKD12-0,5/16	8028117
	<i>f</i> ↑ V4A	3	EC-FKE3-L/16	8029169	EC-FKE3-0,5/16	8028126
		4	EC-FKE4-L/16	8029170	EC-FKE4-0,5/16	8028127
		4+PE	EC-FKE5-L/16	8029171	EC-FKE5-0,5/16	8028131
		5	EC-FKE4.5-L/16	8052080	EC-FKE4.5-0,5/16	8028128
		8	EC-FKE8-L/16	8029016	EC-FKE8-0,5/16	8029015
		12	EC-FKE12-L/16	8029701	EC-FKE12-0,5/16	8029696
	<i>m</i> ↑ CuZn	3	EC-FS3-L/16	8029545	EC-FS3-0,5/16	8027382
		4	EC-FS4-L/16	8029546	EC-FS4-0,5/16	8027383
		4+PE	EC-FS5-L/16	8029548	EC-FS5-0,5/16	8027393
		5	EC-FS4.5-L/16	8029547	EC-FS4.5-0,5/16	8027394
		8	EC-FS8-L/16	8029551	EC-FS8-0,5/16	8028072
		12	EC-FS12-L/16	8029552	EC-FS12-0,5/16	8028073
	<i>m</i> ↑ CuZn ⤴	3			EC-FSD3-0,5/16	8027467
		4			EC-FSD4-0,5/16	8027469
		4+PE			EC-FSD5-0,5/16	8027471
		5			EC-FSD4.5-0,5/16	8027470
		8			EC-FSD8-0,5/16	8028074
		12			EC-FSD12-0,5/16	8028077
	<i>m</i> ↑ V4A	3	EC-FSE3-L/16	8029553	EC-FSE3-0,5/16	8028145
		4	EC-FSE4-L/16	8029554	EC-FSE4-0,5/16	8028147
		4+PE	EC-FSE5-L/16	8029556	EC-FSE5-0,5/16	8028149
		5	EC-FSE4.5-L/16	8029555	EC-FSE4.5-0,5/16	8028148
		8	EC-FSE8-L/16	8029557	EC-FSE8-0,5/16	8029083
		12	EC-FSE12-L/16	8029558	EC-FSE12-0,5/16	8029344

Other versions, wire-lengths and -colours are available upon request.

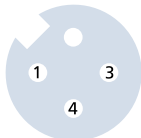


Dimensional drawings see page 38

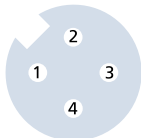
M12x1 flanges for front-wall mounting		
Technical data	Poles	Value
Rated voltage [U _{max}]	3, 4	250V
	4+PE, 5	60V
	8, 12	30V
Current load [I _{max}]	3, 4, 4+PE, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Flange housing	CuZn, nickel-plated stainless steel 1.4404
	Contact carrier (<i>female</i>)	TPU, BK
	Contact carrier (<i>male</i>)	PA GF, BK
	Contacts	CuZn, gold-plated
	Sealing (<i>female</i>)	FPM/FKM
	Sealing (screw in thread)	NBR
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

Coding A | *female*

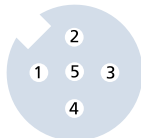
3 poles



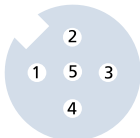
4 poles



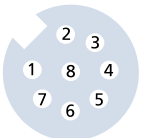
4 poles+PE



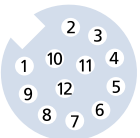
5 poles



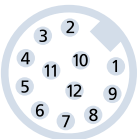
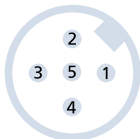
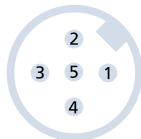
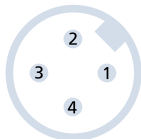
8 poles



12 poles



Coding A | *male*



1BN | 3BU | 4BK

1BN | 2WH

3BU | 4BK

1BN | 2WH

3BU | 4BK | 5GNYE

1BN | 2WH

3BU | 4BK | 5GY

1WH | 2BN | 3GN

4YE | 5GY | 6PK

7BU | 8RD

1BN | 2BU | 3WH

4GN | 5PK | 6YE | 7BK

8GY | 9RD | 10VT

11GYPK | 12RDBU

EC -

W

FK

F

D

E

4 -

0,5/

16/

S3525

Height-tolerance-balance Δh
for different wall thickness

Screw in thread 16: M16x1,5 | 12: M12x1

0,5: Wire-length [m] | P: Print-contact

Poles

E: stainless steel V4A | without: CuZn

Adjustable

Threaded front

Flange M12x1 | FK: female, FS: male

W: angled | without: straight

Metrical screw in thread

not for 12-poles

US

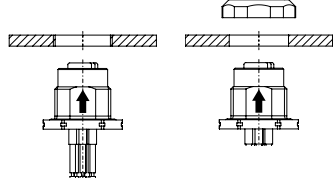
RoHS

PC

Product line	Version	Poles	Type-designation	Print-contact	Wire-contact	
				Order-No.	Type-designation	Order-No.
Back-wall mounting (threaded front)	f ↑ CuZn	3	EC-FKFD3-P/16	8029476	EC-FKFD3-0,5/16	8027547
		4	EC-FKFD4-P/16	8029477	EC-FKFD4-0,5/16	8027548
		4+PE	EC-FKFD5-P/16	8029478	EC-FKFD5-0,5/16	8027550
		5			EC-FKFD4.5-0,5/16	8027549
		8	EC-FKFD8-P/16	8029479	EC-FKFD8-0,5/16	8028120
		12	EC-FKFD12-P/16	8029480	EC-FKFD12-0,5/16	8028121
	f ↑ V4A	3	EC-FKFDE3-P/16	8029695	EC-FKFDE3-0,5/16	8029175
		4	EC-FKFDE4-P/16	8029508	EC-FKFDE4-0,5/16	8029176
		4+PE	EC-FKFDE5-P/16	8029509	EC-FKFDE5-0,5/16	8029189
		5			EC-FKFDE4.5-0,5/16	8029752
		8	EC-FKFDE8-P/16	8029510	EC-FKFDE8-0,5/16	8029160
		12	EC-FKFDE12-P/16	8029512	EC-FKFDE12-0,5/16	8029700
	f ↗ CuZn Δh<2,5mm	4	EC-WKFF4-P/12/S3525	8050275		
		5	EC-WKFF5-P/12/S3525	8050273		
	f ↗ CuZn Δh<4,0mm	4	EC-WKFF4-P/12/S3540	8050274		
		5	EC-WKFF5-P/12/S3540	8050272		
	f ↗ CuZn Δh<5,0mm	4	EC-WKFF4-P/12/S3550	8045188		
		5	EC-WKFF5-P/12/S3550	8050257		
	m ↑ CuZn	3	EC-FSFD3-P/16	8029495	EC-FSFD3-0,5/16	8027509
		4	EC-FSFD4-P/16	8029497	EC-FSFD4-0,5/16	8027508
		4+PE	EC-FSFD5-P/16	8029501	EC-FSFD5-0,5/16	8027505
		5	EC-FSFD4.5-P/16	8029499	EC-FSFD4.5-0,5/16	8027506
		8	EC-FSFD8-P/16	8029503	EC-FSFD8-0,5/16	8028080
		12	EC-FSFD12-P/16	8029505	EC-FSFD12-0,5/16	8028554
	m ↑ V4A	3	EC-FSFDE3-P/16	8029496	EC-FSFDE3-0,5/16	8029213
		4	EC-FSFDE4-P/16	8029498	EC-FSFDE4-0,5/16	8029214
		4+PE	EC-FSFDE5-P/16	8029502	EC-FSFDE5-0,5/16	8029216
		5			EC-FSFDE4.5-0,5/16	8029215
		8	EC-FSFDE8-P/16	8029504	EC-FSFDE8-0,5/16	8029158
		12	EC-FSFDE12-P/16	8029506	EC-FSFDE12-0,5/16	8029212
	m ↗ CuZn	4	EC-WFSF4-P/12	8046571		
		5	EC-WFSF5-P/12	8044960		

Other versions, wire-lengths and -colours are available upon request.

Back-wall mounting



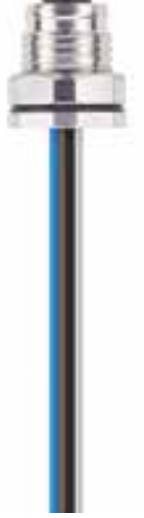












Dimensional drawings
see page 39

EC-FKFD_P

EC-WFSF

EC-WKFF

EC-FSFD_0,5

EC-FSFD_P

EC-FKFD_0,5

M12x1 flanges for back-wall mounting

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE, 5	60V
	8, 12	30V
Current load [Imax]	3, 4, 4+PE, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Flange housing	CuZn, nickel-plated stainless steel 1.4404
	Contact carrier (female)	TPU, BK
	Contact carrier (male + angled version)	PA GF, BK
	Contacts	CuZn, gold-plated
	Sealing	FPM/FKM
	Sealing (screw in thread)	NBR
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

Coding A | female

3 poles

4 poles

4 poles+PE

5 poles

8 poles

12 poles

Coding A | male

1BN | 3BU | 4BK

1BN | 2WH
3BU | 4BK

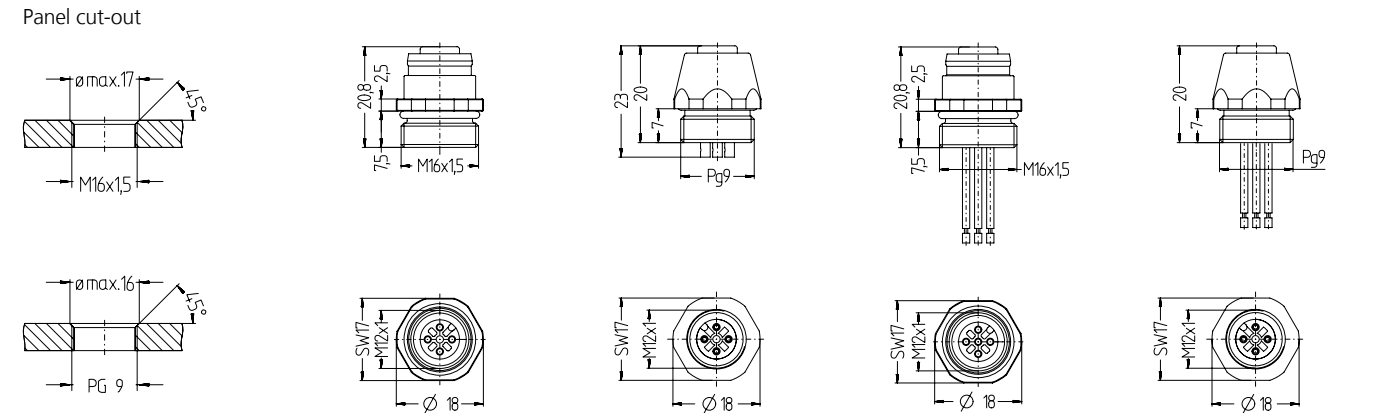
1BN | 2WH
3BU | 4BK | 5GNYE

1BN | 2WH
3BU | 4BK | 5GY

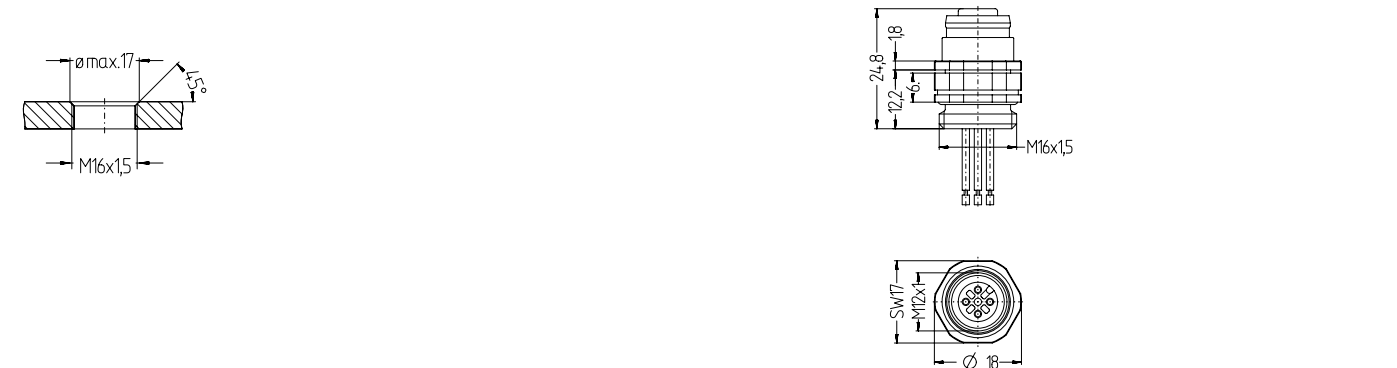
1WH | 2BN | 3GN
4YE | 5GY | 6PK
7BU | 8RD

1BN | 2BU | 3WH |
4GN | 5PK | 6YE | 7BK
8GY | 9RD | 10VT
11GYPK | 12RDBU

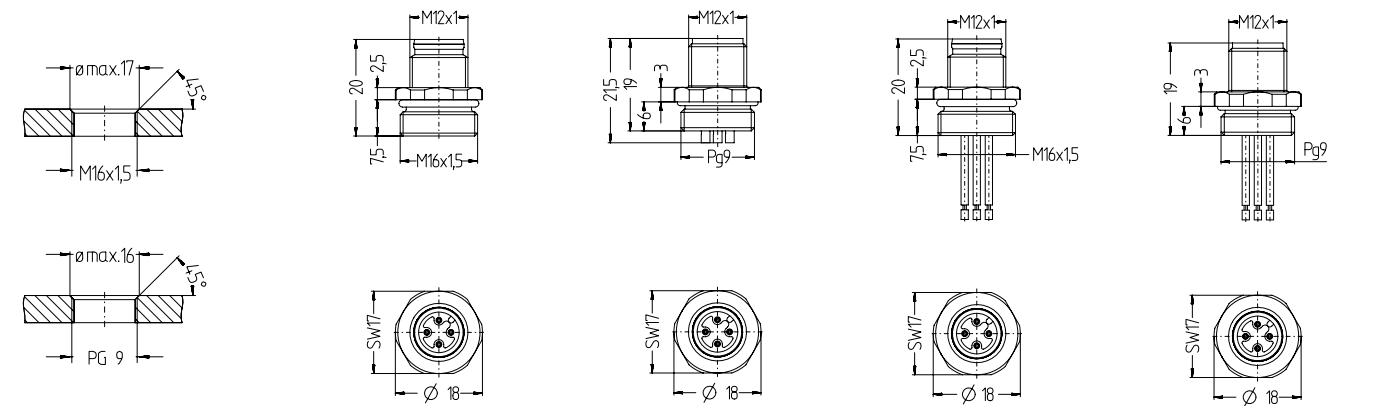
Front-wall mounting (optional threaded rear) Spare nuts are not included see accessories on page 174				
Soldering-contact		Wire-contact		
f ↑ CuZn (V4A)	(EC)-FK(E) _- L/16	(FB)-FK _- L	(EC/HT)-FK(E) _- 0,5/16	(FB)-FK _- 0,5



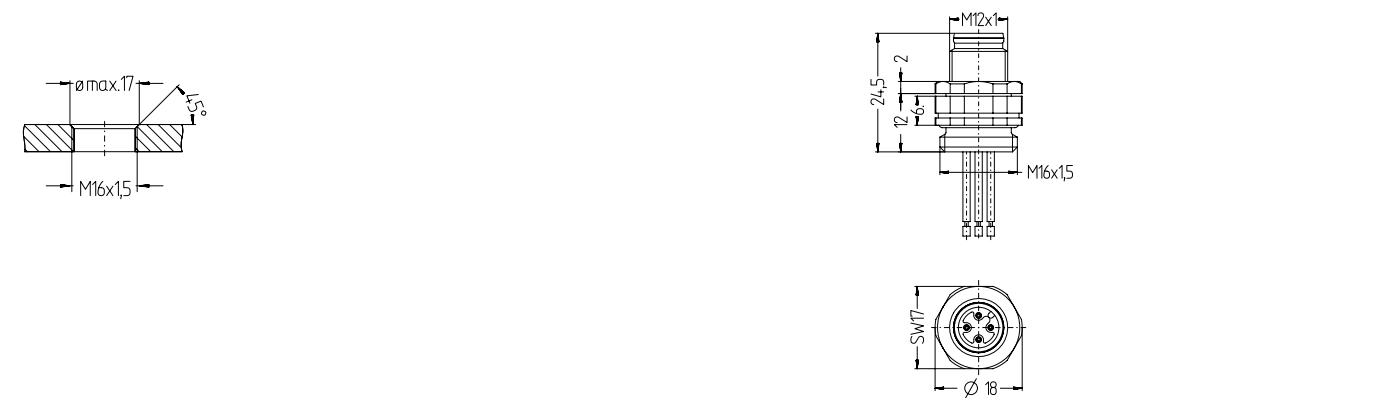
f ↑ CuZn ⌚	(EC)-FKD _- 0,5/16
------------------	--------------------



m ↑ CuZn (V4A)	(EC/HT)-FS(E) _- L/16	(FB)-FS _- L	(EC/HT)-FS(E) _- 0,5/16	(FB)-FS _- 0,5
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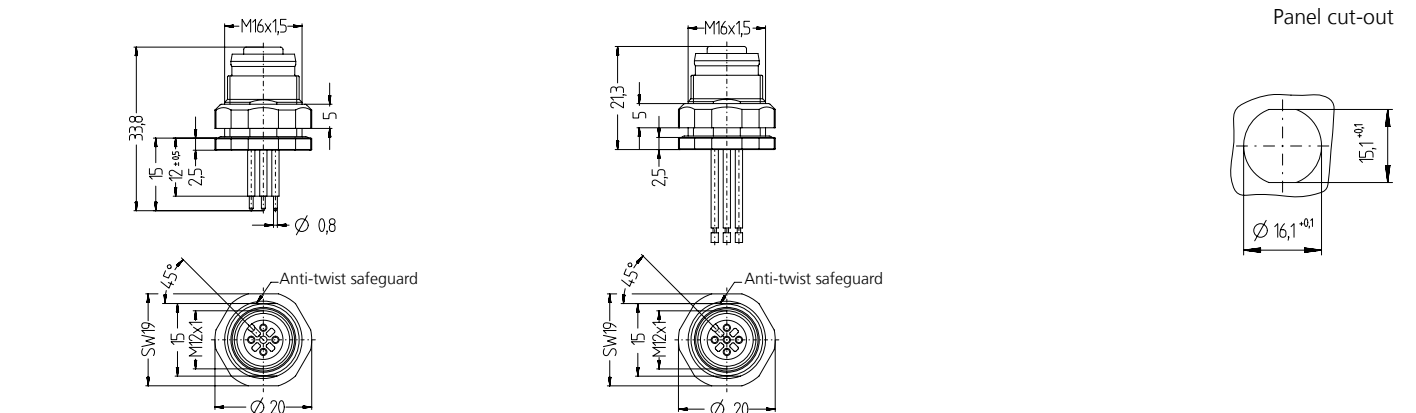


m ↑ CuZn ⌚	(EC)-FSD _- 0,5/16
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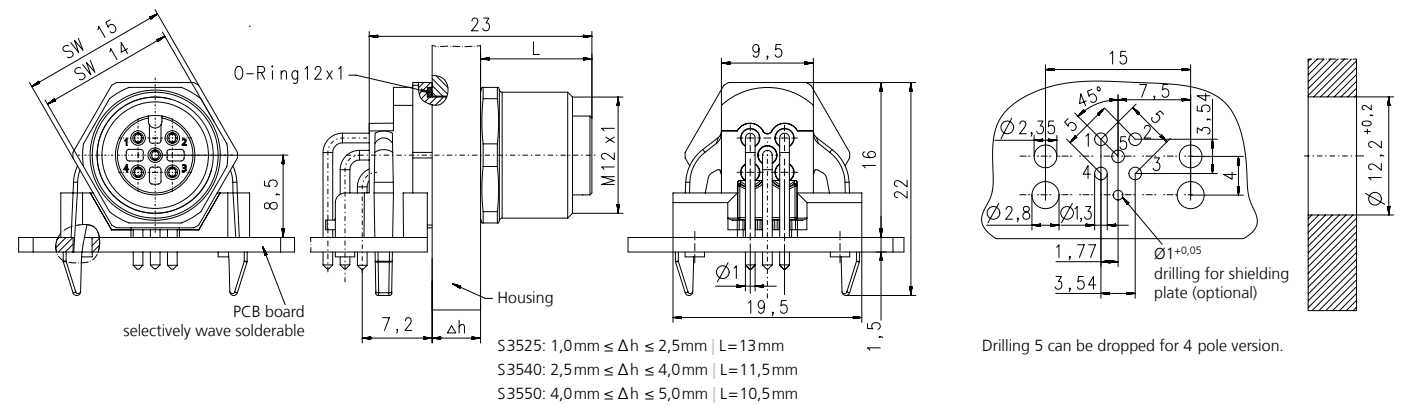


For pinning see corresponding article.

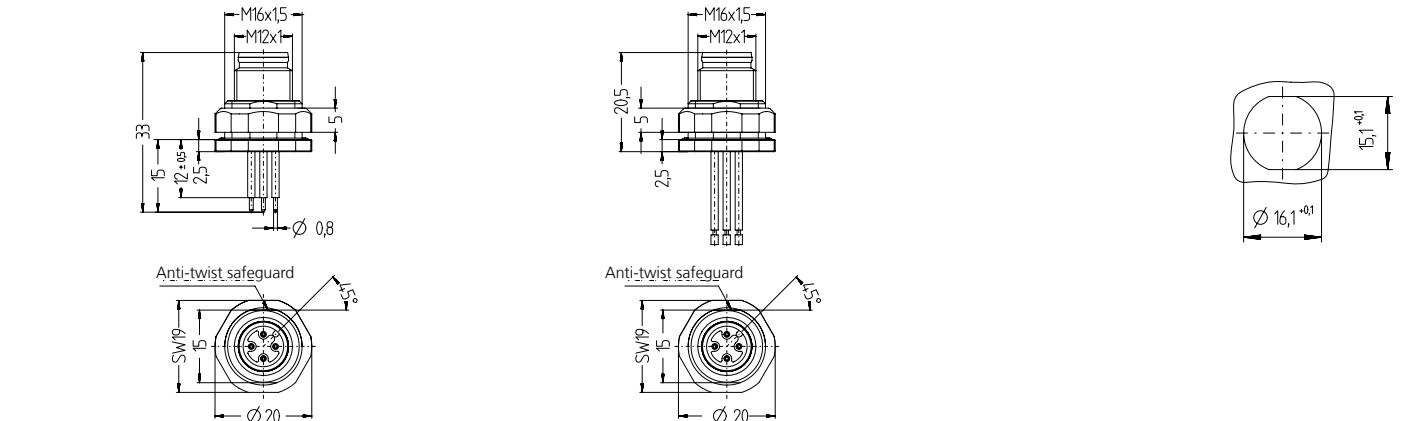
Print-contact		Wire-contact		Back-wall mounting (threaded front)
(EC)-FKFD(E) _- P/16	(EC)-FKFD(E) _- 0,5/16	(EC)-FKFD(E) _- 0,5/16	(EC)-FKFD(E) _- 0,5/16	f ↑ CuZn (V4A)



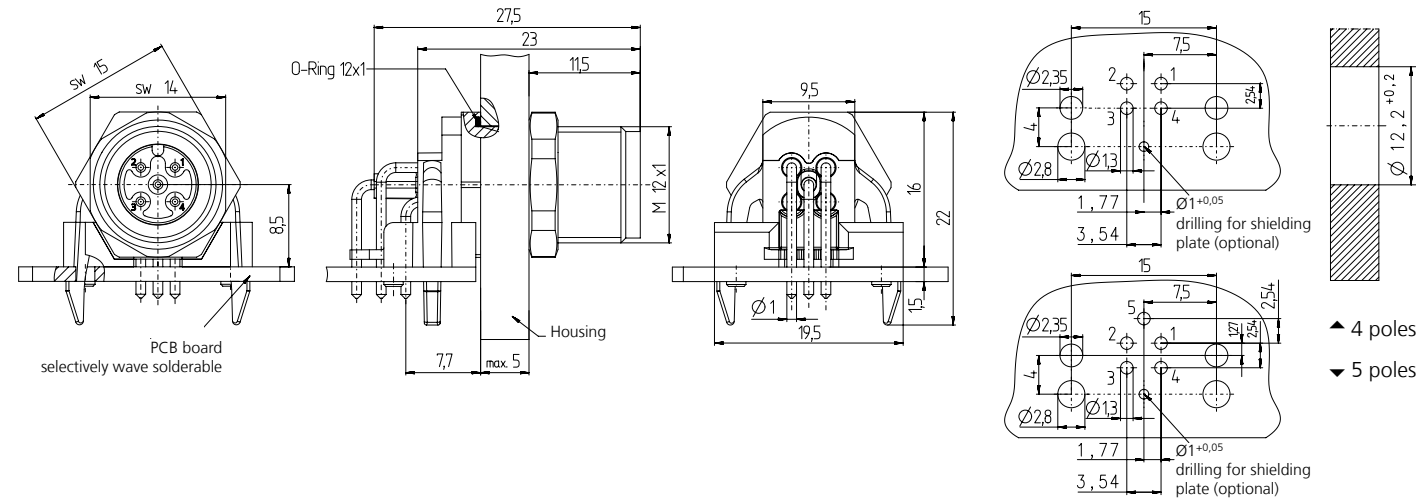
(EC)-WFKF _- P/12/S... see Δh	(EC)-WFKF _- P/12/S... see Δh	f ↗ CuZn Δh
---------------------------------	---------------------------------	-------------------



(EC)-FSFD(E) _- P/16	(EC)-FSFD(E) _- 0,5/16	m ↑ CuZn (V4A)
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(EC)-WFSF _- P/12	(EC)-WFSF _- P/12	m ↗ CuZn
-------------------	-------------------	--------------



E

WAS

4

Poles

M12x1 | WAS: *male*

Built-in connector

Product line	Version	Poles	Type-designation	Order-No.
M12x1_built-in connector	<i>m</i> ↑	4	EWAS4	8008155
		4+PE	EWAS5	8017592
		5	EWAS4.5	8008156
		8	EWAS8	8009737
		12	EWAS12	8030496



FK

FS

4 /

M12

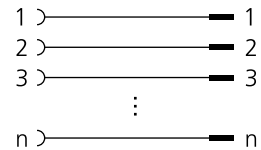
Poles

M12x1 | FS: *male*

M12x1 | FK: *female*

M12x1 Screw in thread

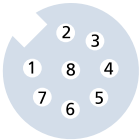
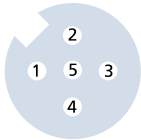
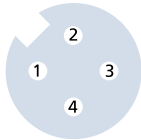
Product line	Version	Poles	Type-designation	Order-No.
M12x1_Feed-through connection	<i>f_m</i>	4	FKFS4/M12	8018404
		5	FKFS4.5/M12	8018405
		8	FKFS8/M12	8018410



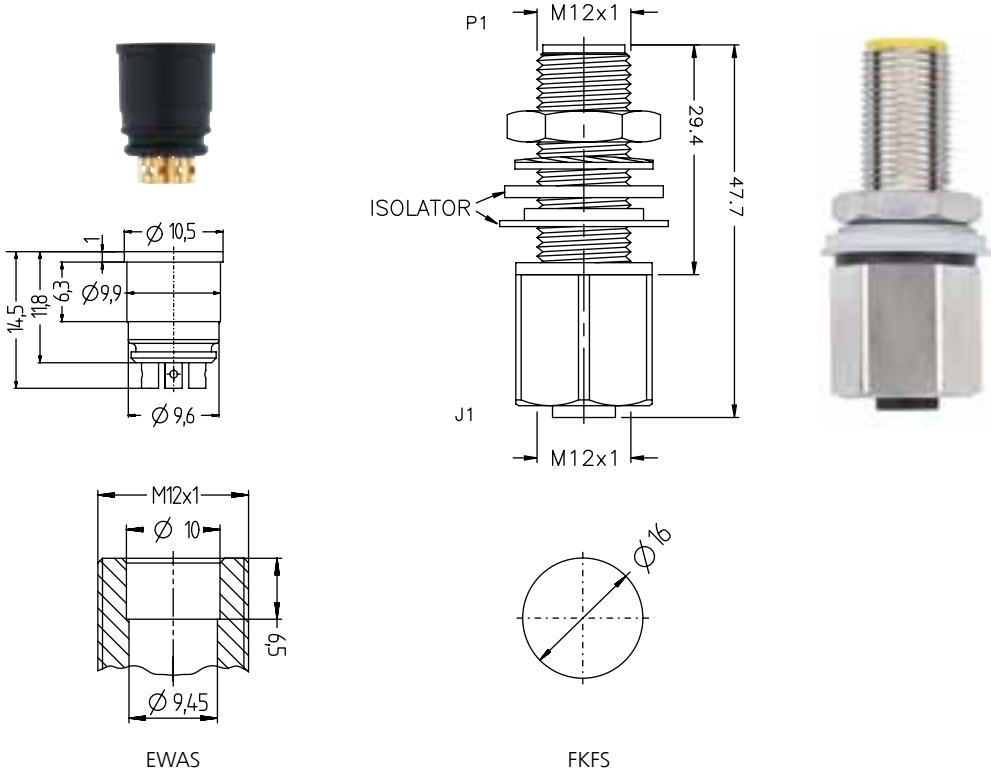
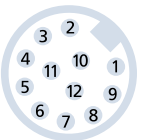
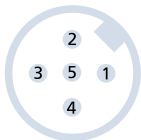
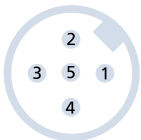
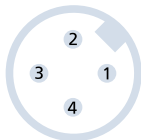
M12x1 built-in connector | Feed-through connection

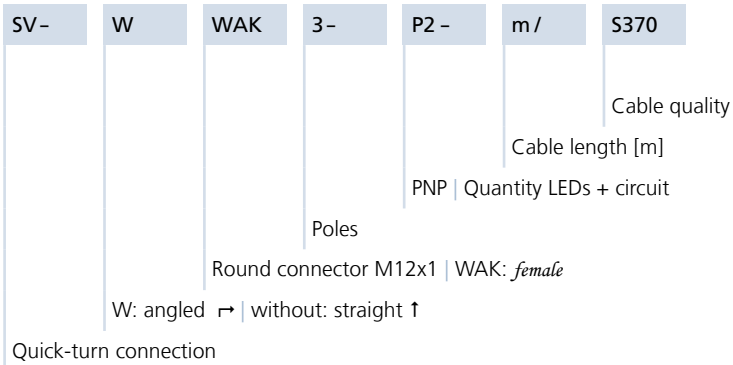
Technical data	Built-in connector		Feed-through connection	
	Poles	Value	Poles	Value
Rated voltage [Umax]	4	250V	4	250V
	4+PE, 5	60V	5	60V
	8, 12	30V	8	30V
Current load [Imax]	4, 4+PE, 5	4A	4, 4+PE	4A
	8	2A	8	2A
	12	1.5A		
Insulation resistance		≥10 ⁸ Ω		≥10 ⁸ Ω
Standards		IEC 61076-2-101		IEC 61076-2-101
Materials	Contact carrier 4-8-pol.	PA GF, BK	Flange housing	CuZn, nickel-plated
	Contact carrier 12-pol.	TPU, BK	Contact carrier	TPU, YE
	Contacts	CuZn, gold-plated	Contacts	CuZn, gold-plated
Ambient temperature		-30°C...+90°C		-30°C...+90°C
Degree of pollution		3		3
Protection class	(in plugged condition)	IP67	(in threaded condition)	IP67
Mechanical life cycle		>100 mating cycles		>100 mating cycles

Coding A <i>female</i>				
4 poles	4 poles+PE	5 poles	8 poles	12 poles



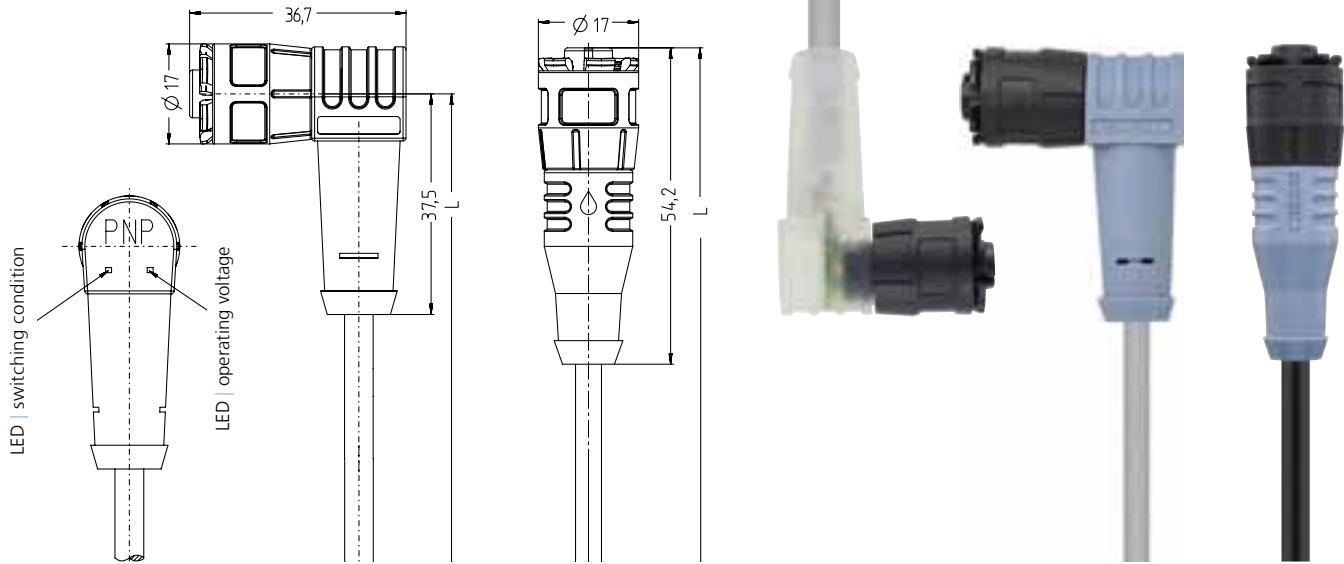
Coding A | *male*





Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
SV_M12x1	f ↑	PUR S370 ®	3	SV-WAK3-m/S370	8052092	8052093	8052094
			4	SV-WAK4-m/S370	8052095	8052097	8052098
			4+PE	SV-WAK5-m/S370	8052099	8052100	8045149
		PVC P00	3	SV-WAK3-m/P00	8052152	8052153	8052154
			4	SV-WAK4-m/P00	8039816	8038584	8039896
			4+PE	SV-WAK5-m/P00	8052193	8052194	8041337
	f ↗	PUR S370 ®	3	SV-WWAK3-m/S370	8052190	8050532	8052191
			4	SV-WWAK4-m/S370	8048009	8048010	8048011
			4+PE	SV-WWAK5-m/S370	8052105	8052106	8052107
		PVC P00	3	SV-WWAK3-m/P00	8052196	8041334	8041335
			4	SV-WWAK4-m/P00	8039817	8039818	8039897
			4+PE	SV-WWAK5-m/P00	8052155	8052156	8052157
	f ↗ LED2	PUR S370 ®	3	SV-WWAK3P2-m/S370	8052108	8052109	8052110
		PVC P00	3	SV-WWAK3P2-m/P00	8052158	8052159	8052160

Other versions and cable-lengths are available upon request.



Quick-turn connection S12x1 *female* + *female* LED

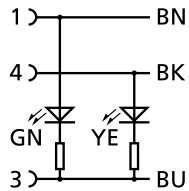
Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE	60V
	LED-version	10...24V _{DC}
Current load [Imax]	3, 4, 4+PE	4A
Insulation resistance		≥10 ⁸ Ω
Standards		according to IEC61076-2-101
Materials	Grip	TPU, BU LED-version: TPU, transparent
	Contact carriers	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	POM
Ambient temperature		-30°C...+80°C
Degree of pollution		3
Protection class (in plugged condition)		IP67
Mechanical life cycle		>50 mating cycles

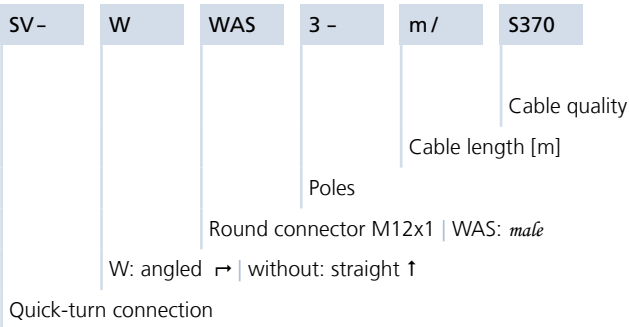
Coding A | *female*

3 poles	4 poles	4 poles+PE
1BN 3BU 4BK	1BN 2WH 3BU 4BK	1BN 2WH 3BU 4BK 5GN/YE

LED-version

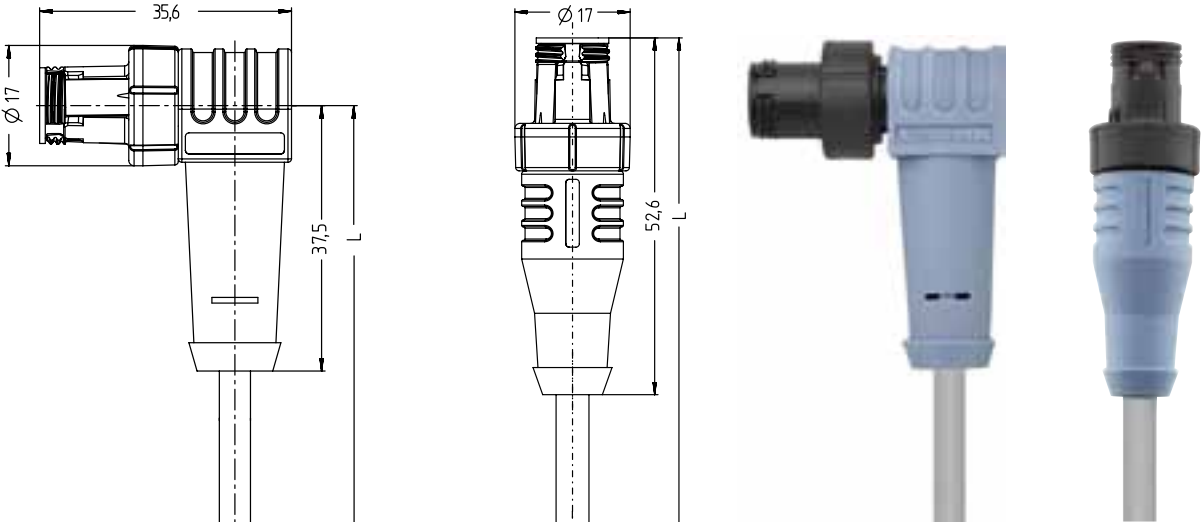
3P2





Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
SV_M12x1	<i>m</i> ↑	PUR S370 [®]	3	SV-WAS3-m/S370	8052111	8052112	8052113
			4	SV-WAS4-m/S370	8052114	8052115	8052116
			4+PE	SV-WAS5-m/S370	8052117	8052118	8052119
		PVC P00	3	SV-WAS3-m/P00	8052161	8052162	8052163
			4	SV-WAS4-m/P00	8052164	8042592	8052165
			4+PE	SV-WAS5-m/P00	8052166	8052167	8052168
	<i>m</i> ↗	PUR S370 [®]	3	SV-WWAS3-m/S370	8052120	8052121	8052122
			4	SV-WWAS4-m/S370	8052123	8052124	8052125
			4+PE	SV-WWAS5-m/S370	8052126	8052127	8052128
		PVC P00	3	SV-WWAS3-m/P00	8052169	8052170	8052171
			4	SV-WWAS4-m/P00	8052172	8052173	8052174
			4+PE	SV-WWAS5-m/P00	8052175	8052176	8052177

Other versions and cable-lengths are available upon request.



Quick-turn connection S12x1 *male*

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE	60V
Current load [Imax]	3, 4, 4+PE	4A
Insulation resistance		≥10 ⁸ Ω
Standards		according to IEC61076-2-101
Materials	Grip	TPU, BU
	Contact carrier	TPU, BK
	Contacts	CuZn, gold-plated
	Locking mechanism	POM
Ambient temperature		-30°C...+80°C
Degree of pollution		3
Protection class (in plugged condition)		IP67
Mechanical life cycle		>50 mating cycles

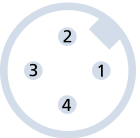
Coding A | *male*

3 poles



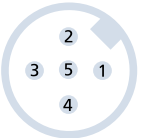
1BN | 3BU | 4BK

4 poles

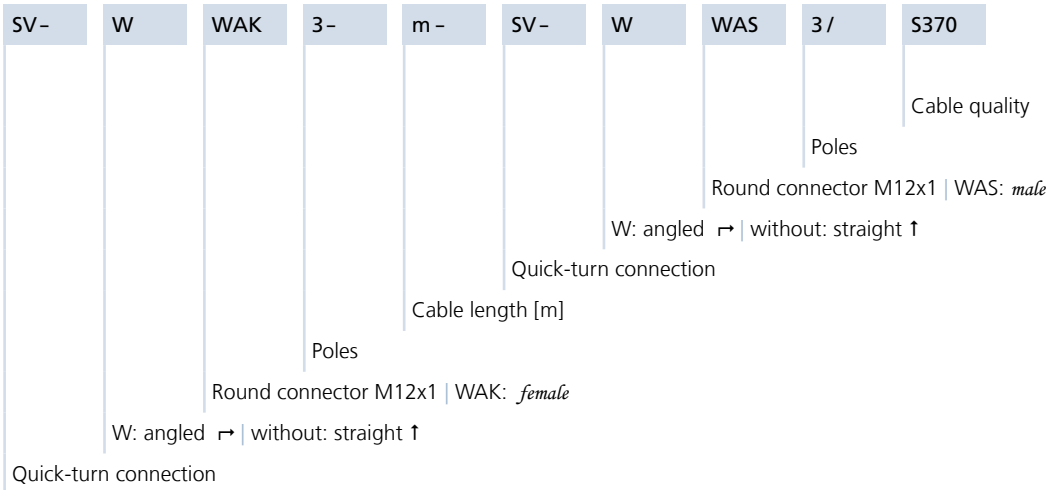


1BN | 2WH | 3BU | 4BK

4 poles+PE

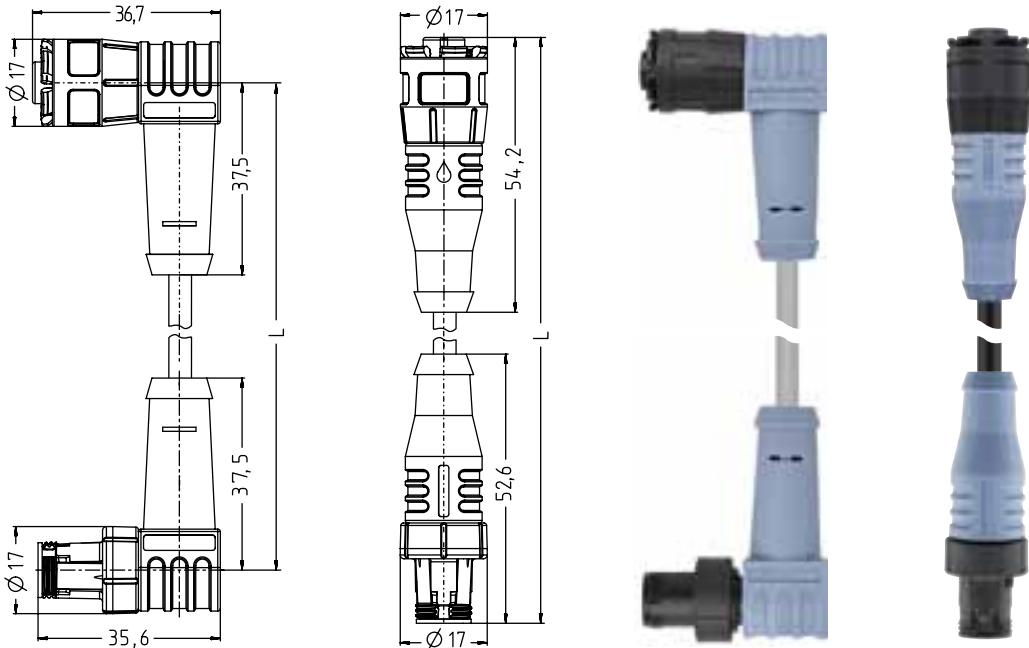


1BN | 2WH | 3BU | 4BK | 5GN/YE



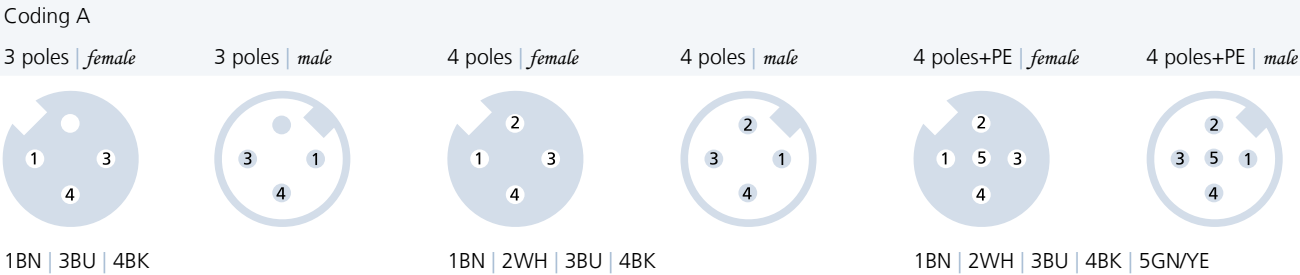
Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
SV_M12x1	f ↑ — m ↑	PUR S370 [®]	3	SV-WAK3-m-SV-WAS3/S370	8052129	8052130	8052131
			4	SV-WAK4-m-SV-WAS4/S370	8052132	8052133	8052134
			4+PE	SV-WAK5-m-SV-WAS5/S370	8052135	8052136	8052137
		PVC P00	3	SV-WAK3-m-SV-WAS3/P00	8041340	8041341	8041342
			4	SV-WAK4-m-SV-WAS4/P00	8046120	8047582	8040520
			4+PE	SV-WAK5-m-SV-WAS5/P00	8052178	8052179	8052180
	f ↗ — m ↗	PUR S370 [®]	3	SV-WWAK3-m-SV-WWAS3/S370	8052138	8052139	8052140
			4	SV-WWAK4-m-SV-WWAS4/S370	8052141	8052142	8052143
			4+PE	SV-WWAK5-m-SV-WWAS5/S370	8052144	8052145	8052146
		PVC P00	3	SV-WWAK3-m-SV-WWAS3/P00	8052181	8052182	8052183
			4	SV-WWAK4-m-SV-WWAS4/P00	8052184	8052185	8052186
			4+PE	SV-WWAK5-m-SV-WWAS5/P00	8052187	8052188	8052189

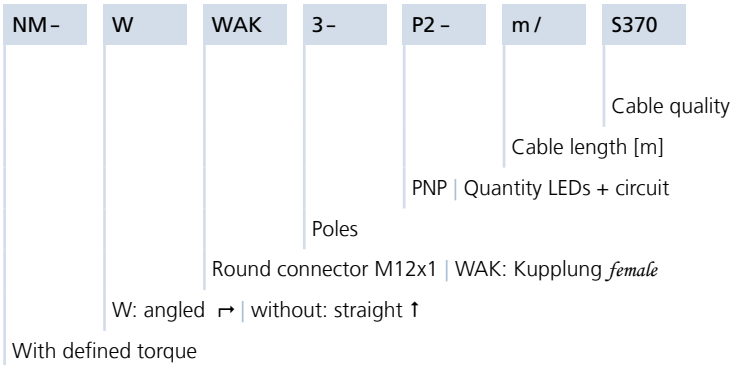
Other versions and cable-lengths are available upon request.



Quick-turn connection S12x1 | junction cable

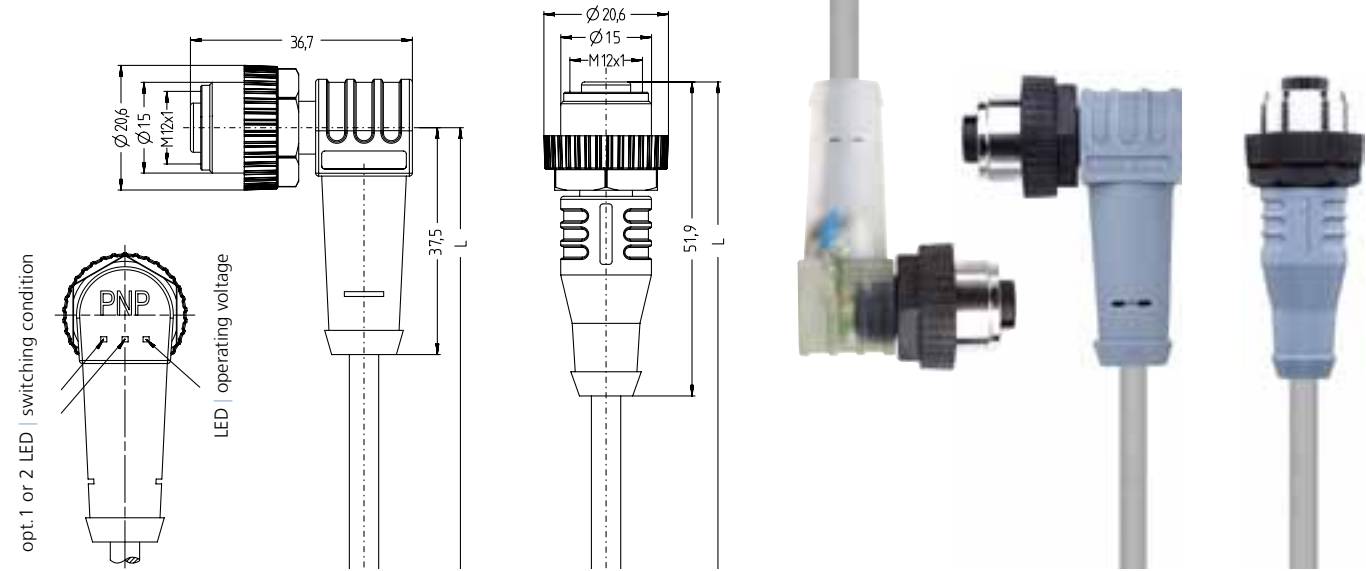
Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE	60V
Current load [Imax]	3, 4, 4+PE	4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		according to IEC 61076-2-101
Materials	Grip	TPU, BU
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	POM
Ambient temperature		-30°C...+80°C
Degree of pollution		3
Protection class (in plugged condition)		IP 67
Mechanical life cycle		>50 mating cycles





Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
NM_M12x1	$f \mid \uparrow$	PUR S370 [®]	3	NM-WAK3-m/S370	8052350	8052351	8052353
			4	NM-WAK4-m/S370	8052356	8052357	8045007
			4+PE	NM-WAK5-m/S370	8052358	8052359	8052360
		PVC P00	3	NM-WAK3-m/P00	8052411	8052412	8052413
			4	NM-WAK4-m/P00	8052414	8052415	8052416
			4+PE	NM-WAK5-m/P00	8052417	8052418	8052419
	$f \mid \rightarrow$	PUR S370 [®]	3	NM-WWAK3-m/S370	8052361	8052362	8052363
			4	NM-WWAK4-m/S370	8052367	8052368	8052369
			4+PE	NM-WWAK5-m/S370	8052380	8052381	8052382
		PVC P00	3	NM-WWAK3-m/P00	8052420	8052421	8052422
			4	NM-WWAK4-m/P00	8052426	8052427	8052428
			4+PE	NM-WWAK5-m/P00	8052438	8052439	8052440
	$f \mid \rightarrow \mid$ LED 2	PUR S370 [®]	3	NM-WWAK3P2-m/S370	8052364	8052365	8052366
			4	NM-WWAK4P2-m/S370	8052370	8052371	8052373
			4	NM-WWAK4P3-m/S370	8052374	8052375	8052376
			4	NM-WWAK4P3.1-m/S370	8052377	8052378	8052379
			4+PE	NM-WWAK5P2-m/S370	8052383	8052384	8052385
			4+PE	NM-WWAK5P3-m/S370	8052386	8052387	8052388
	$f \mid \rightarrow \mid$ LED 3	PUR S370 [®]	4	NM-WWAK5P3.1-m/S370	8052389	8052390	8052391
			4+PE	NM-WWAK5P3.1-m/S370	8052389	8052390	8052391
			4	NM-WWAK4P2-m/P00	8052423	8052424	8052425
			4	NM-WWAK4P2-m/P00	8052429	8052430	8052431
			4	NM-WWAK4P3-m/P00	8052432	8052433	8052434
			4	NM-WWAK4P3.1-m/P00	8052435	8052436	8052437
	$f \mid \rightarrow \mid$ LED 2	PVC P00	3	NM-WWAK3P2-m/P00	8052423	8052424	8052425
			4	NM-WWAK4P2-m/P00	8052429	8052430	8052431
			4	NM-WWAK4P3-m/P00	8052432	8052433	8052434
	$f \mid \rightarrow \mid$ LED 3	PVC P00	4	NM-WWAK4P3.1-m/P00	8052435	8052436	8052437
			4+PE	NM-WWAK5P2-m/P00	8052441	8052442	8052443
			4+PE	NM-WWAK5P3-m/P00	8052444	8052447	8052446
	$f \mid \rightarrow \mid$ LED 3.1	PVC P00	4+PE	NM-WWAK5P3.1-m/P00	8052448	8052449	8052450
			4+PE	NM-WWAK5P3.1-m/P00	8052448	8052449	8052450

Other versions and cable-lengths are available upon request.

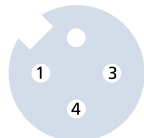


M12x1 with defined torque *female* + *female* LED

Technical data	Poles	Value
Rated voltage [U _{max}]	3, 4	250V
	4+PE	60V
	LED-version	10...24V _{DC}
Current load [I _{max}]	3, 4, 4+PE	4A
Insulation resistance		≥10 ⁸ Ω
Standards		according to IEC 61076-2-101
Materials	Grip	TPU, BU LED-version: TPU, transparent
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	POM
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

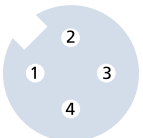
Coding A | *female*

3 poles



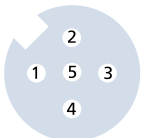
1BN | 3BU | 4BK

4 poles



1BN | 2WH | 3BU | 4BK

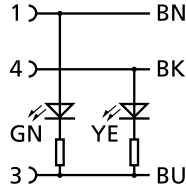
4 poles+PE



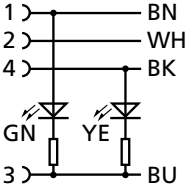
1BN | 2WH | 3BU | 4BK | 5GN/YE

LED-versions

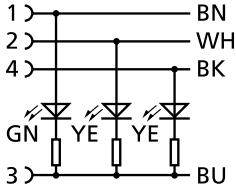
3P2



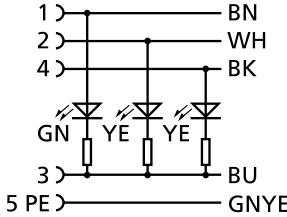
4P2



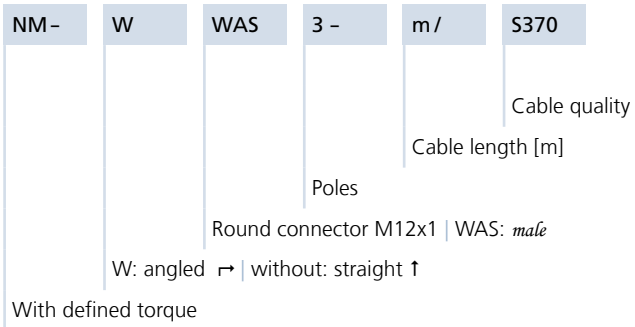
4P3



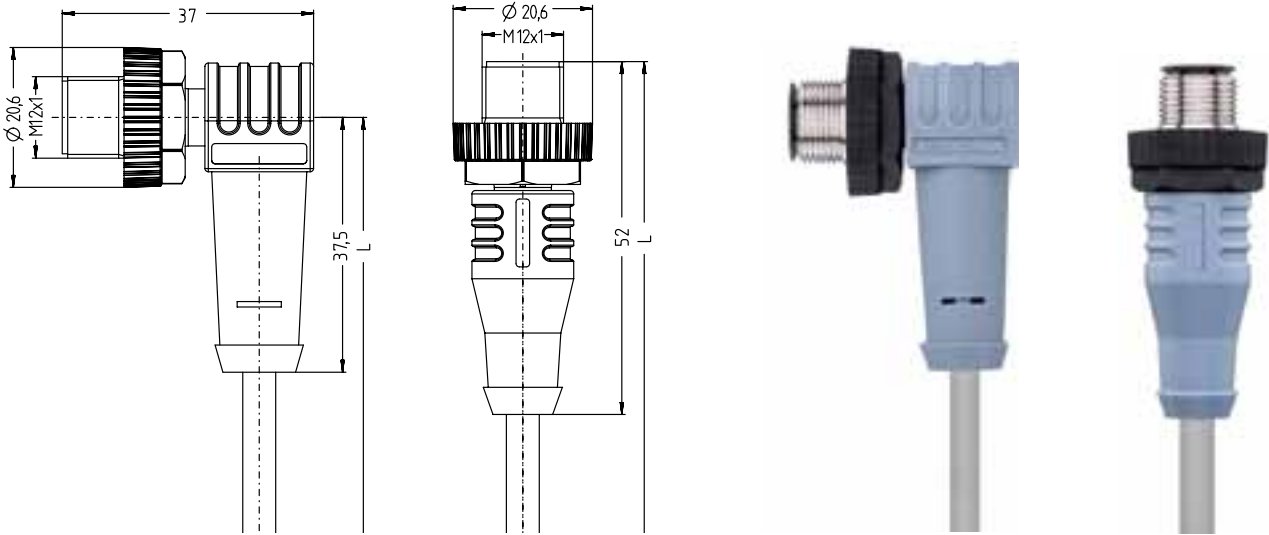
5P3



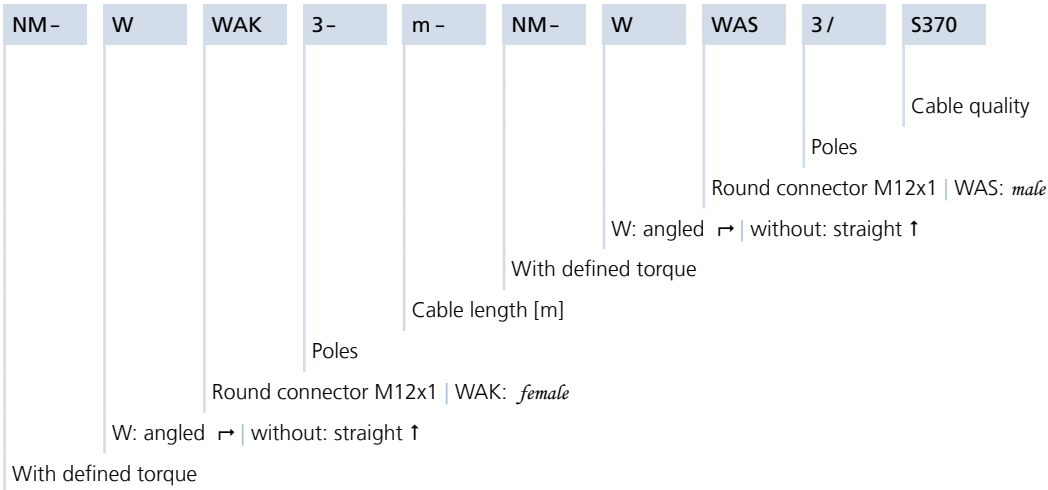
3.1 = GN/RD/YE



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
NM_M12x1	<i>m</i> ↑	PUR S370 [®]	3	NM-WAS3-m/S370	8052392	8052393	8052394
			4	NM-WAS4-m/S370	8052395	8052397	8052396
			4+PE	NM-WAS5-m/S370	8052398	8052399	8052400
		PVC P00	3	NM-WAS3-m/P00	8052452	8052451	8052453
			4	NM-WAS4-m/P00	8052454	8052455	8052456
			4+PE	NM-WAS5-m/P00	8052457	8052458	8052459
	<i>m</i> ↗	PUR S370 [®]	3	NM-WWAS3-m/S370	8052401	8052402	8052403
			4	NM-WWAS4-m/S370	8052404	8052405	8052406
			4+PE	NM-WWAS5-m/S370	8052407	8052408	8052409
		PVC P00	3	NM-WWAS3-m/P00	8052460	8052461	8052462
			4	NM-WWAS4-m/P00	8052463	8052464	8052465
			4+PE	NM-WWAS5-m/P00	8052466	8052467	8052468
Other versions and cable-lengths are available upon request.							

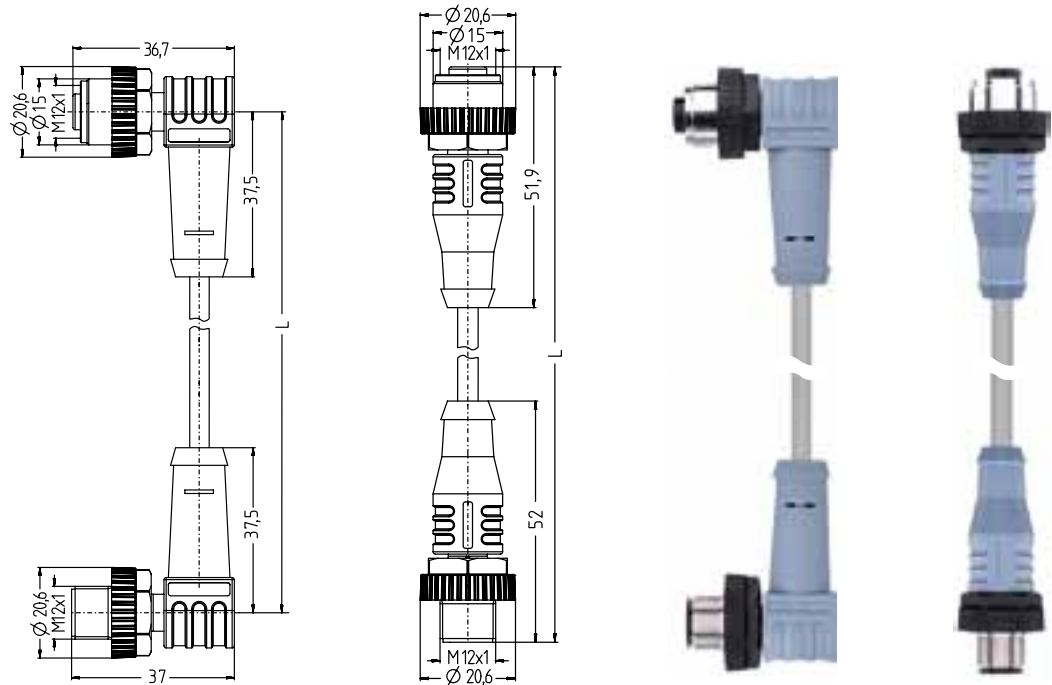


M12x1 with defined torque <i>male</i>		
Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE	60V
Current load [Imax]	3, 4, 4+PE	4A
Insulation resistance		≥10 ⁸ Ω
Standards		according to IEC 61076-2-101
Materials	Grip	TPU, BU
	Contact carrier	TPU, BK
	Contacts	CuZn, gold-plated
	Locking mechanism	POM
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles
Coding A <i>male</i>		
3 poles	4 poles	4 poles+PE
1BN 3BU 4BK	1BN 2WH 3BU 4BK	1BN 2WH 3BU 4BK 5GN/YE



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
NM_M12x1	f ↑ __ m ↑	PUR S370 [®]	3	NM-WAK3-m-NM-WAS3/S370	8052560	8052561	8052562
			4	NM-WAK4-m-NM-WAS4/S370	8045377	8045009	8045010
			4+PE	NM-WAK5-m-NM-WAS5/S370	8052593	8052594	8052595
		PVC P00	3	NM-WAK3-m-NM-WAS3/P00	8052572	8052573	8052574
			4	NM-WAK4-m-NM-WAS4/P00	8052575	8052576	8052577
			4+PE	NM-WAK5-m-NM-WAS5/P00	8052589	8052590	8052591
	f ↗ __ m ↗	PUR S370 [®]	3	NM-WWAK3-m-NM-WWAS3/S370	8052563	8052564	8052565
			4	NM-WWAK4-m-NM-WWAS4/S370	8052566	8052567	8052568
			4+PE	NM-WWAK5-m-NM-WWAS5/S370	8052569	8052570	8052571
		PVC P00	3	NM-WWAK3-m-NM-WWAS3/P00	8052578	8052579	8052587
			4	NM-WWAK4-m-NM-WWAS4/P00	8052581	8052582	8052588
			4+PE	NM-WWAK5-m-NM-WWAS5/P00	8052584	8052585	8052586

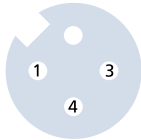
Other versions and cable-lengths are available upon request.



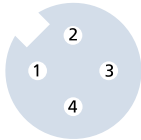
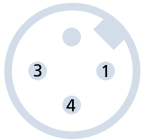
M12x1 with defined torque | junction cable

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE	60V
Current load [Imax]	3, 4, 4+PE	4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		according to IEC 61076-2-101
Materials	Grip	TPU, BU
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	POM
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP 67
Mechanical life cycle		>100 mating cycles

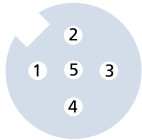
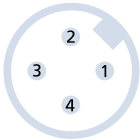
Coding A
3 poles | *female* 3 poles | *male* 4 poles | *female* 4 poles | *male* 4 poles+PE | *female* 4 poles+PE | *male*



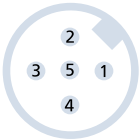
1BN | 3BU | 4BK



1BN | 2WH | 3BU | 4BK



1BN | 2WH | 3BU | 4BK | 5GN/YE



FB -

W

WAK

4 -

m /

P00

Cable quality

Cable length [m]

Poles

Round connector M12x1 | WAK: *female*
WAS: *male*

W: angled ↗ | without: straight ↑

Food & Beverage

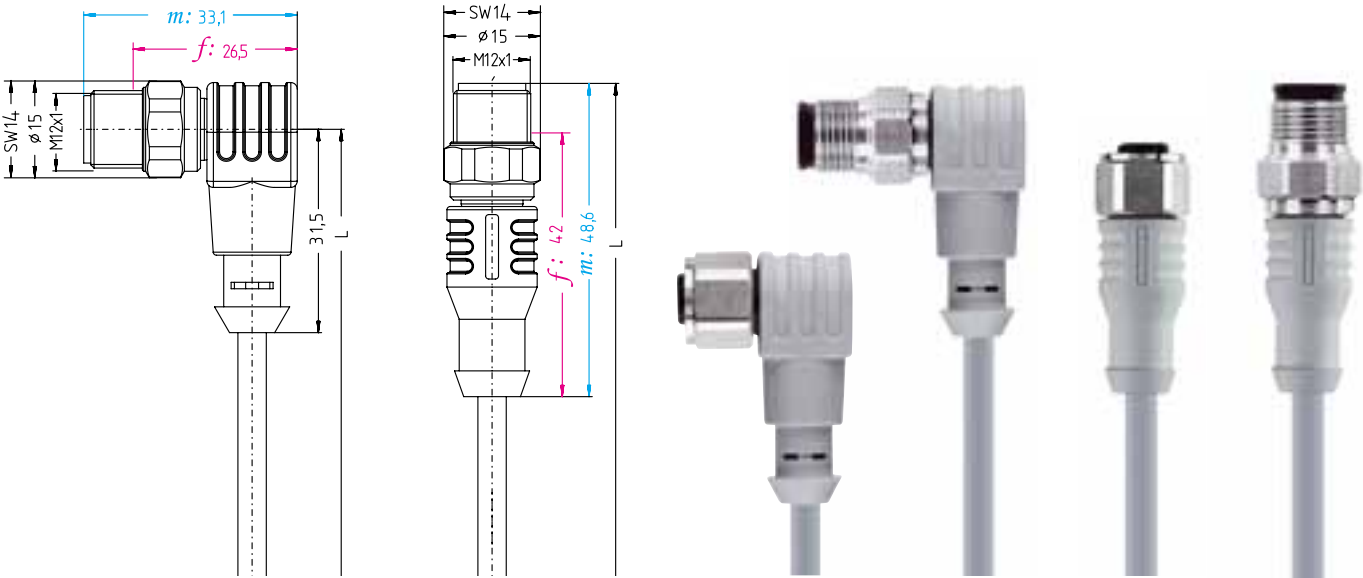


Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
FB_M12x1	<i>f</i> ↑	PVC P00	4	FB-WAK4-m/P00	8024739	8024460	8024603
	<i>f</i> ↗	PVC P00	4	FB-VWAK4-m/P00	8024740	8024461	8022816
	<i>m</i> ↑	PVC P00	4	FB-WAS4-m/P00	8028511	8024463	8024610
	<i>m</i> ↗	PVC P00	4	FB-VWAS4-m/P00	8032437	8024466	8024621

Other versions and cable-lengths are available upon request.

Cable quality PVC | P00

Good resistance against acids and lye, limited oil- and chemicals resistance, and restricted abrasion. For average mechanical stresses e.g. packaging machines as well as assembly- and production lines. Adequate for Food & Beverage industries.



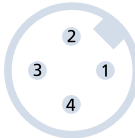
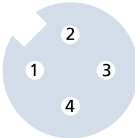
Food & Beverage | PVC _ M12x1

Technical data	Poles	Value
Rated voltage [Umax]	4	250V
Current load [Imax]	4	4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	PVC, GY
	Contact carrier	PVC, GY
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	V4A
Ambient temperature		-40°C...+70°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Coding A

4 poles | *female*

4 poles | *male*



1BN | 2WH | 3BU | 4BK

FB –

W

WAK

4 –

m –

FB –

W

WAS

4/

P00

Cable quality

Poles

Round connector M12x1 | WAS: *male*

W: angled ↗ | without: straight ↑

Food & Beverage

Cable length [m]

Poles

Round connector M12x1 | WAK: *female*

W: angled ↗ | without: straight ↑

Food & Beverage



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m10m
FB_M12x1	<i>f</i> ↑ <u> </u> <i>m</i> ↑	PVC P00	4	FB-WAK4-m-FB-WAS4/P00	8052059	80330518029900
	<i>f</i> ↗ <u> </u> <i>m</i> ↗	PVC P00	4	FB-WWAK4-m-FB-WWAS4/P00	8052076	80520778052078

Other versions and cable-lengths are available upon request.

FB–

FK

4 –

0,5

0,5: Wire-length [m] | L: Soldering-contact

Poles

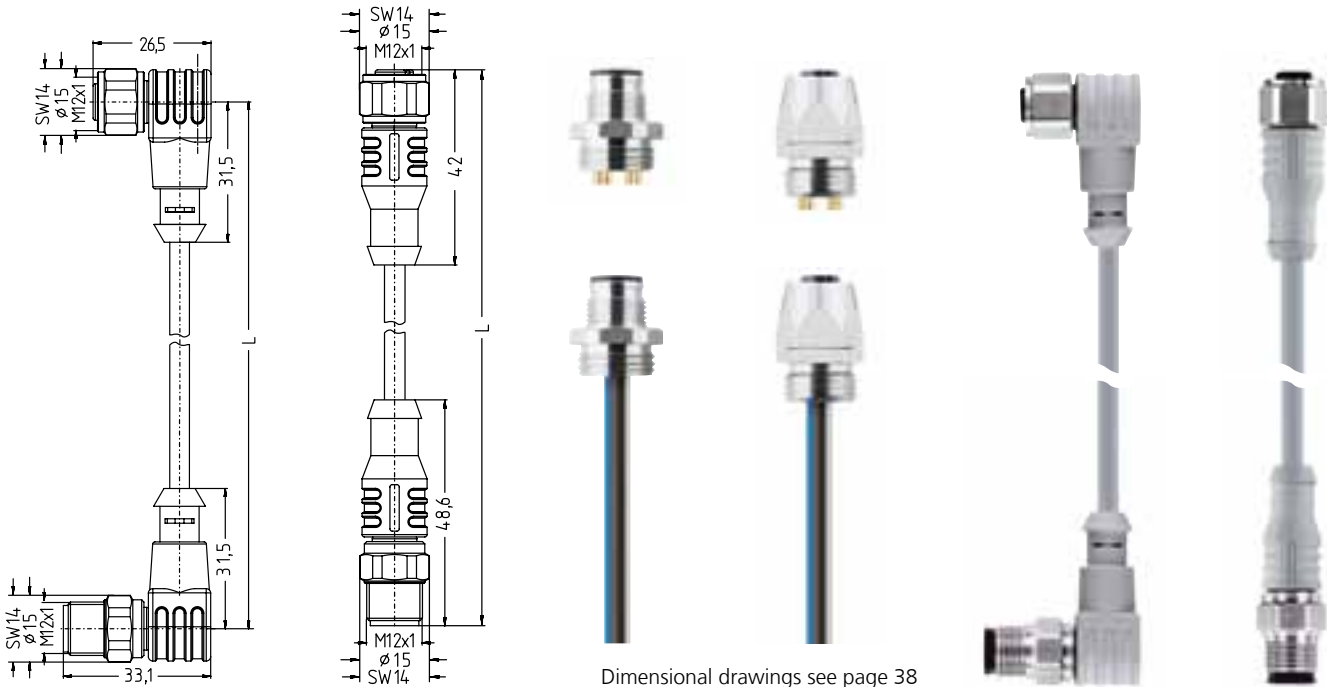
Flange M12x1 | FK: *female*

FS: *male*

Food & Beverage

Product line	Version	Poles	Soldering-contact		Wire-contact	
			Type-designation	Order-No.	Type-designation	Order-No.
Front-wall mounting (optional	<i>f</i> ↑ V4A Pg9	4	FB-FK4-L	8024601	FB-FK4-0,5	8024474
threaded rear)	<i>m</i> ↑ V4A Pg9	4	FB-FS4-L	8024619	FB-FS4-0,5	8024594

Other versions and wire-length are available upon request.



Dimensional drawings see page 38

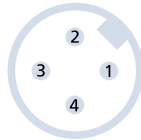
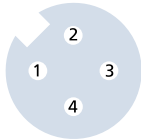
Food & Beverage | PVC _ M12x1 junction cable + flanges

Technical data	Round connectors		Flanges	
	Poles	Value	Poles	Value
Rated voltage [Umax]	4	250V	4	250V
Current load [Imax]	4	4A	4	4A
Insulation resistance	≥ 10 ⁸ Ω		≥ 10 ⁸ Ω	
Standards	IEC 61076-2-101		IEC 61076-2-101	
Materials	Grip	PVC, GY	Flange housing	V4A
	Contact carrier	PVC, GY	Contact carrier	PVC, GY
	Sealing (<i>female</i>)	FPM/FKM	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated	Contacts	CuZn, gold-plated
	Locking mechanism	V4A	Sealing (screw in thread)	NBR
Ambient temperature	-40°C...+70°C		-40°C...+70°C	
Degree of pollution	3		3	
Protection class (in threaded condition)	IP67, IP69K		IP67	
Mechanical life cycle	>100 mating cycles		>100 mating cycles	

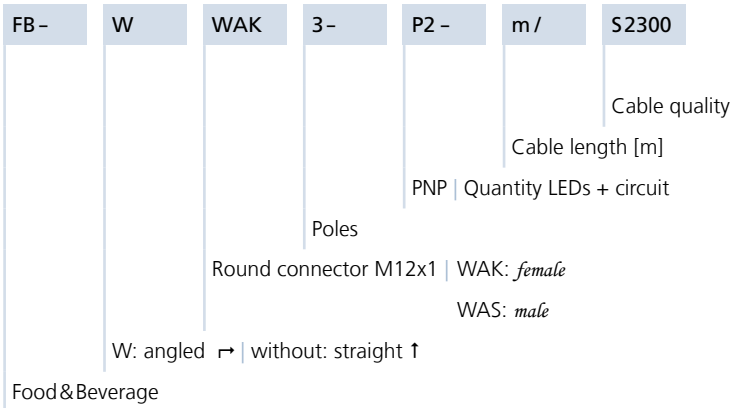
Coding A

4 poles | *female*

4 poles | *male*



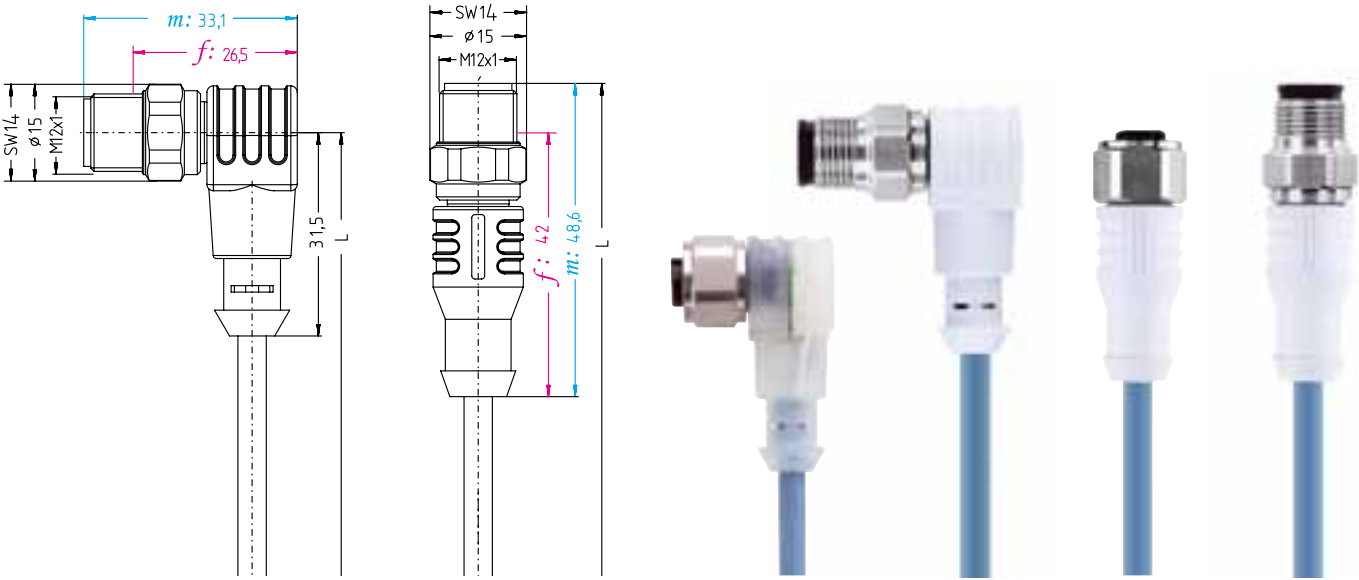
1BN | 2WH | 3BU | 4BK



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
FB_M12x1	<i>f</i> ↑	PP S2300	4	FB-WAK4-m/S2300	8034191	8033664	8033665
	<i>f</i> ↗	PP S2300	4	FB-WWAK4-m/S2300	8034194	8033667	8033668
	<i>f</i> ↗ LED 2	PP S2300	4	FB-WWAK4P2-m/S2300	8038290	8035643	8036273
	<i>m</i> ↑	PP S2300	4	FB-WAS4-m/S2300	8039303	8033670	8033671
	<i>m</i> ↗	PP S2300	4	FB-WWAS4-m/S2300	8039304	8033673	8033674
Other versions and cable-lengths are available upon request.							

Cable quality PP | S2300

Flexible PVC-free polypropylene cable with great strength against highly effective detergents of the Food&Beverage industry. In addition, good microbes- and chemicals resistance and suitable for drag-chain applications. Torque up to 50N/mm². Well adapted for use in food industry, packaging-, bottling plants as well as industrial machinery- and plant construction.



Food & Beverage plus | PVC-free_ M12x1

Technical data	Poles	Value
Rated voltage [Umax]	4	250V
Current load [Imax]	4	4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	PP, WH LED-version: PP, transparent
	Contact carrier	PP, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	V4A
Ambient temperature		-40°C...+105°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

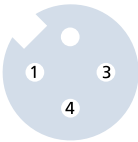
Coding A

3 poles | *female*

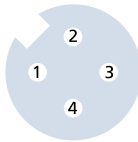
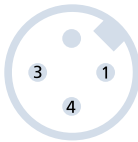
3 poles | *male*

4 poles | *female*

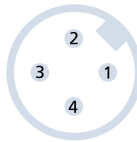
4 poles | *male*



1BN | 3BU | 4BK

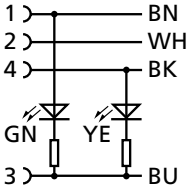


1BN | 2WH | 3BU | 4BK



LED-versions

4P2



FB -

W

WAK

4 -

m -

FB -

W

WAS

4 /

S2300

Cable quality

Poles

Round connector M12x1 | WAS: *male*

W: angled ↗ | without: straight ↑

Food & Beverage

Cable length [m]

Poles

Round connector M12x1 | WAK: *female*

W: angled ↗ | without: straight ↑

Food & Beverage



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m10m
FB_M12x1	<i>f</i> ↑ <i>m</i> ↑	PP S2300	4	FB-WAK4-m-FB-WAS4/S2300	8035647	80346858033677
	<i>f</i> ↗ <i>m</i> ↗	PP S2300	4	FB-WWAK4-m-FB-WWAS4/S2300	8035442	80359498033689

Other versions and cable-lengths are available upon request.

FB -

FK

4 -

0,5 /

S2300

Food & Beverage plus | PVC-free

0,5: Wire-length [m] | L: Soldering-contact

Poles

Flange M12x1 | FK: *female*

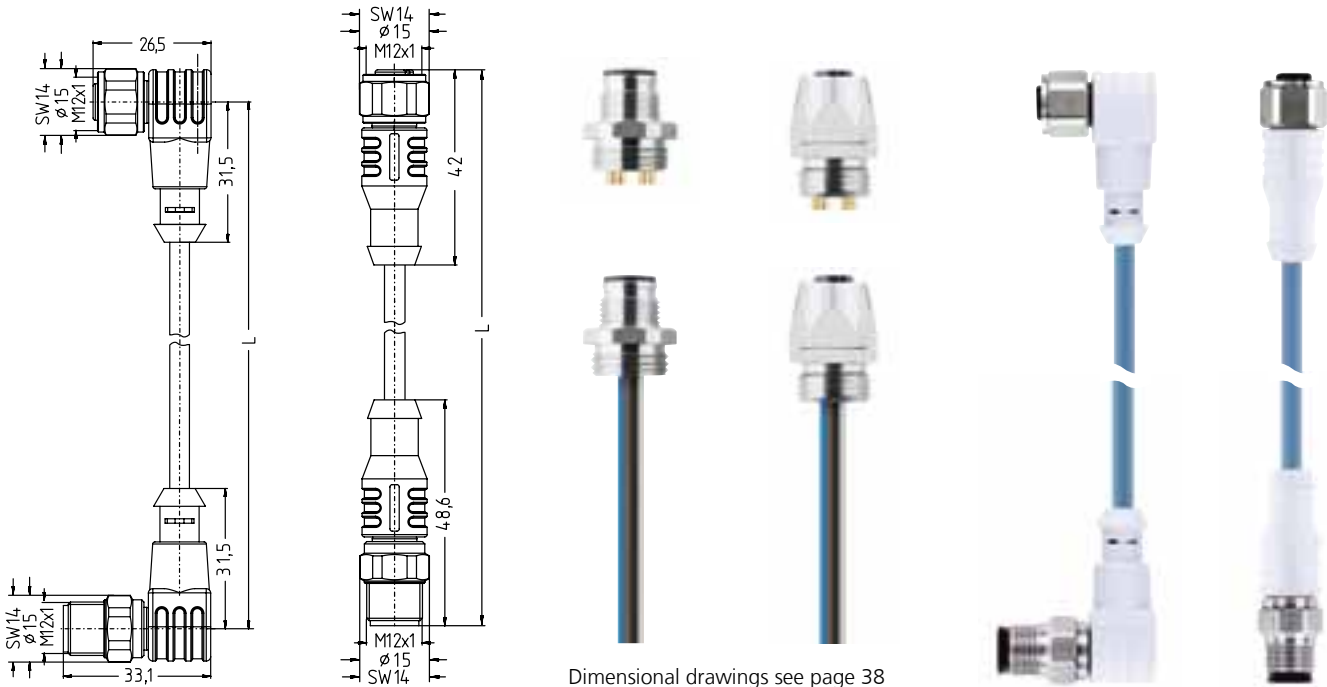
FS: *male*

Food & Beverage



Product line	Version	Poles	Soldering-contact		Wire-contact	
			Type-designation	Order-No.	Type-designation	Order-No.
Front-wall mounting (optional	<i>f</i> ↑ V4A Pg9	4	FB-FK4-L/S2300	8033633	FB-FK4-0,5/S2300	8033631
threaded rear)	<i>m</i> ↑ V4A Pg9	4	FB-FS4-L/S2300	8033634	FB-FS4-0,5/S2300	8033632

Other versions and wire-lengths are available upon request.



Dimensional drawings see page 38

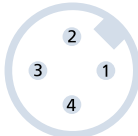
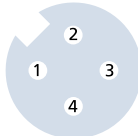
Food & Beverage plus | PVC-free _ M12x1 junction cable + flanges

Technical data	Round connectors		Flanges	
	Poles	Value	Poles	Value
Rated voltage [Umax]	3, 4	250V	4	250V
	LED-version	10...24V _{DC}		
Current load [Imax]	3, 4	4A	4	4A
Insulation resistance		≥10 ⁸ Ω		≥10 ⁸ Ω
Standards		IEC 61076-2-101		IEC 61076-2-101
Materials	Grip	PP, WH	Flange housing	V4A
	Grip LED-version	PP, transparent	Contact carrier	PP, BK
	Contact carrier	PP, BK	Sealing (<i>female</i>)	FPM/FKM
	Sealing (<i>female</i>)	FPM/FKM	Contacts	CuZn, gold-plated
	Contacts	CuZn, gold-plated	Sealing (screw in thread)	NBR
	Locking mechanism	V4A		
Ambient temperature		-40°C...+105°C		-40°C...+105°C
Degree of pollution		3		3
Protection class (in threaded condition)		IP67, IP69K		IP67
Mechanical life cycle		>100 mating cycles		>100 mating cycles

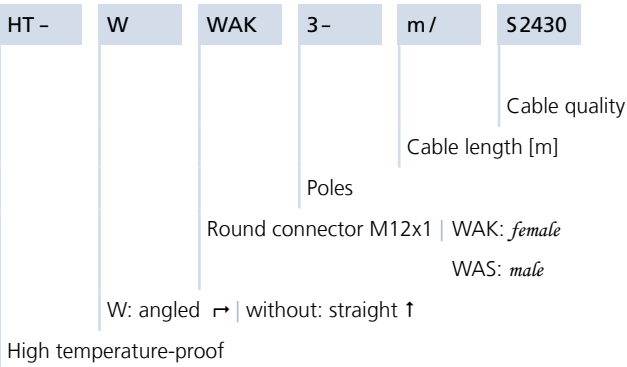
Coding A

4 poles | *female*

4 poles | *male*



1BN | 2WH | 3BU | 4BK

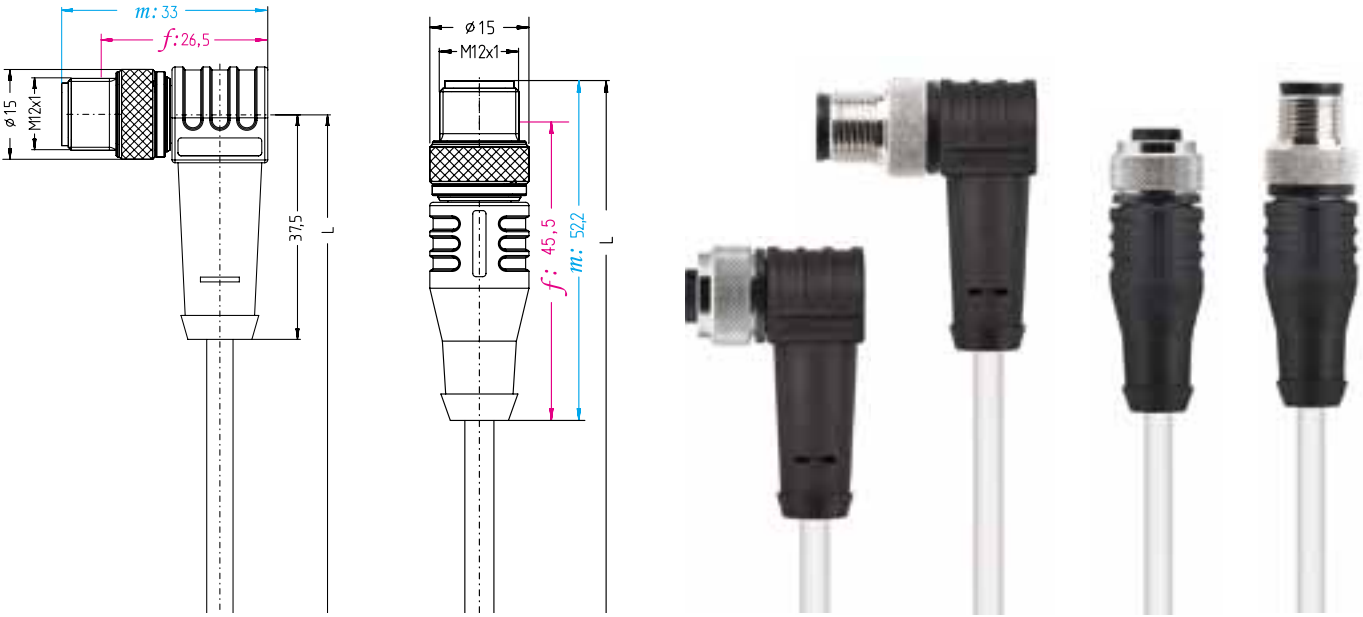


Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
HT_M12x1	f ↑	PTFE S2430	3	HT-WAK3-m/S2430	8039210	8036085	8039211
			4	HT-WAK4-m/S2430	8036518	8036086	8036154
			5	HT-WAK4.5-m/S2430	8039212	8036087	8039213
			8	HT-WAK8-m/S2430	8039214	8039215	8039216
			12	HT-WAK12-m/S2430	8039711	8039712	8039713
	f ↗	PTFE S2430	3	HT-WWAK3-m/S2430	8039224	8036088	8039225
			4	HT-WWAK4-m/S2430	8039226	8036089	8037214
			5	HT-WWAK4.5-m/S2430	8039227	8036090	8039228
			8	HT-WWAK8-m/S2430	8039229	8037024	8039230
			12	HT-WWAK12-m/S2430	8039940	8039941	8039942
	m ↑	PTFE S2430	3	HT-WAS3-m/S2430	8039231	8036091	8039232
			4	HT-WAS4-m/S2430	8039233	8036092	8039234
			5	HT-WAS4.5-m/S2430	8039235	8036093	8038342
			8	HT-WAS8-m/S2430	8039236	8039237	8039238
12			HT-WAS12-m/S2430	8039943	8039944	8039945	
m ↗	PTFE S2430	3	HT-WWAS3-m/S2430	8039467	8036094	8039468	
		4	HT-WWAS4-m/S2430	8039469	8036095	8039470	
		5	HT-WWAS4.5-m/S2430	8039471	8036096	8039472	
		8	HT-WWAS8-m/S2430	8039473	8039474	8039475	
		12	HT-WWAS12-m/S2430	8039476	8039477	8039478	

Other versions and cable-lengths are available upon request.

Cable quality PTFE | S2430

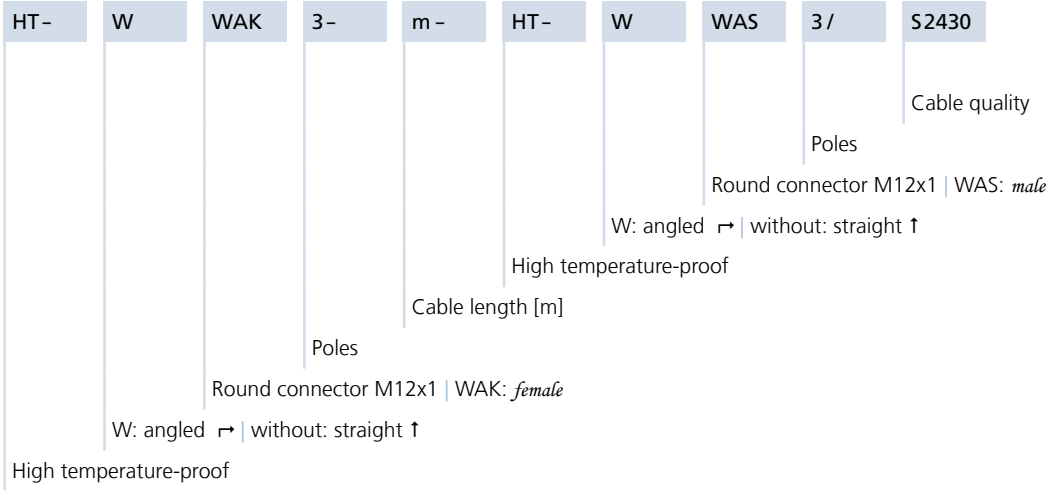
Flexible PTFE-cable with high temperature resistance (300°C/3000h), cold bending resistance down to -65°C. Excellent oil-, acids-, chemicals-, ozone- and weather resistance and flame retardant. It is low-smoke without corrosive fire gases. Applications in extended temperature-range of industrial machinery- and plant construction as well as the chemical- and automotive industries.



M12x1 High temperature-proof

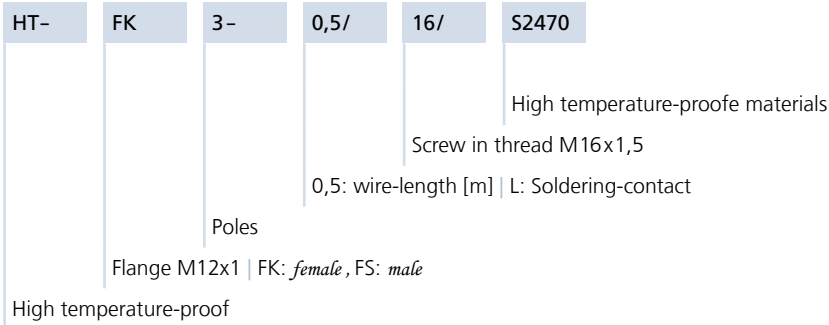
Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
	8, 12	30V
Current load [Imax]	3, 4, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	PBT GF, BK
	Contact carrier	PBT GF, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-20°C...+150°C
Degree of pollution		3
Protection class (in threaded condition)		IP65
Mechanical life cycle		>100 mating cycles

Coding A <i>female</i>				
3 poles	4 poles	5 poles	8 poles	12 poles
Coding A <i>male</i>				
1BN 3BU 4BK	1BN 2WH 3BU 4BK	1BN 2WH 3BU 4BK 5GY	1WH 2BN 3GN 4YE 5GY 6PK 7BU 8RD	1BN 2BU 3WH 4GN 5PK 6YE 7BK 8GY 9RD 10VT 11GYPK 12RDBU



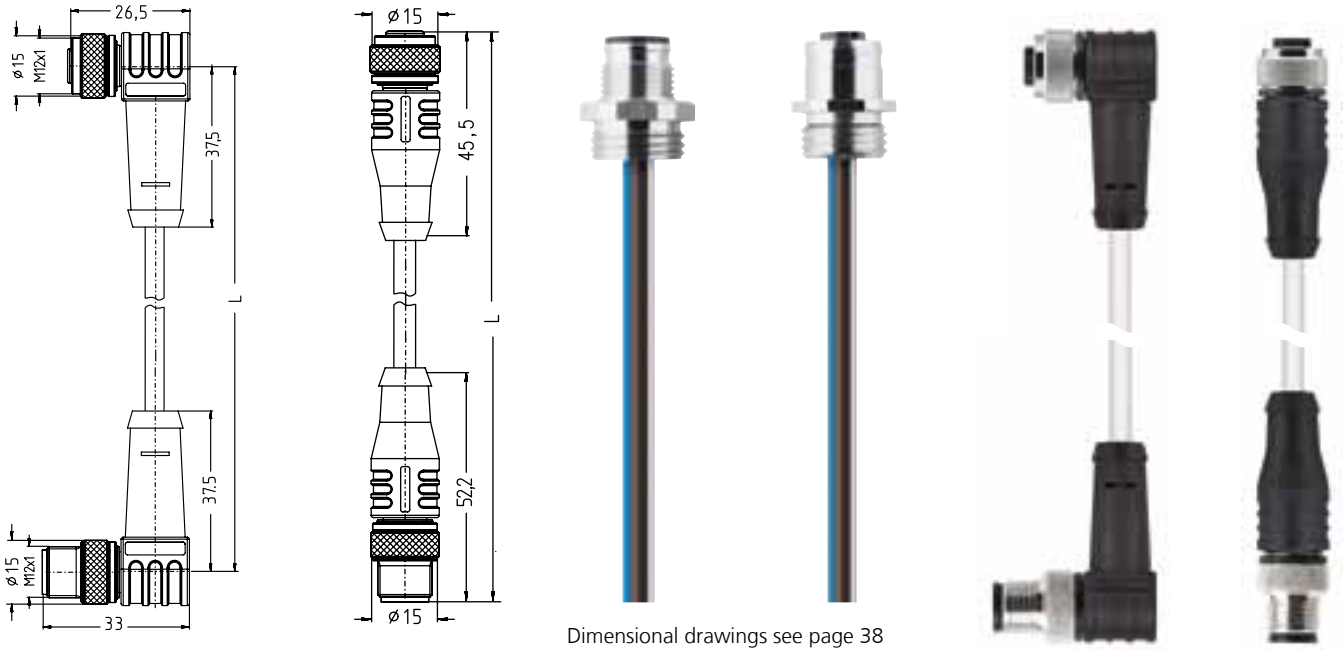
Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
HT_M12x1	<i>f</i> ↑ <i>m</i> ↑	PTFE S2430	3	HT-WAK3-m-HT-WAS3/S2430	8036254	8051955	8039480
			4	HT-WAK4-m-HT-WAS4/S2430	8038667	8038668	8038669
			5	HT-WAK4.5-m-HT-WAS4.5/S2430	8051958	8039949	8039950
			8	HT-WAK8-m-HT-WAS8/S2430	8051960	8039952	8039953
HT_M12x1	<i>f</i> ↗ <i>m</i> ↗	PTFE S2430	12	HT-WAK12-m-HT-WAS12/S2430	8051962	8039955	8039956
			3	HT-WWAK3-m-HT-WWAS3/S2430	8051956	8039958	8039959
			4	HT-WWAK4-m-HT-WWAS4/S2430	8051957	8039961	8039137
			5	HT-WWAK4.5-m-HT-WWAS4.5/S2430	8051959	8039963	8039964
			8	HT-WWAK8-m-HT-WWAS8/S2430	8051961	8039966	8039967
			12	HT-WWAK12-m-HT-WWAS12/S2430	8051963	8039969	8039970

Other versions and cable-lengths are available upon request.



Product line	Version	Poles	Type-designation	Wire-contact Order-No.
Front-wall mounting (optional threaded rear)	<i>f</i> ↑	3	HT-FK3-0,5/16/S2470	8037311
		4	HT-FK4-0,5/16/S2470	8037322
		5	HT-FK4.5-0,5/16/S2470	8037323
		8	HT-FK8-0,5/16/S2470	8037324
	<i>m</i> ↑	12	HT-FK12-0,5/16/S2470	8037325
		3	HT-FS3-0,5/16/S2470	8037288
		4	HT-FS4-0,5/16/S2470	8037292
		5	HT-FS4.5-0,5/16/S2470	8037293
		8	HT-FS8-0,5/16/S2470	8037294
		12	HT-FS12-0,5/16/S2470	8037295

Other versions and wire-lengths are available upon request.

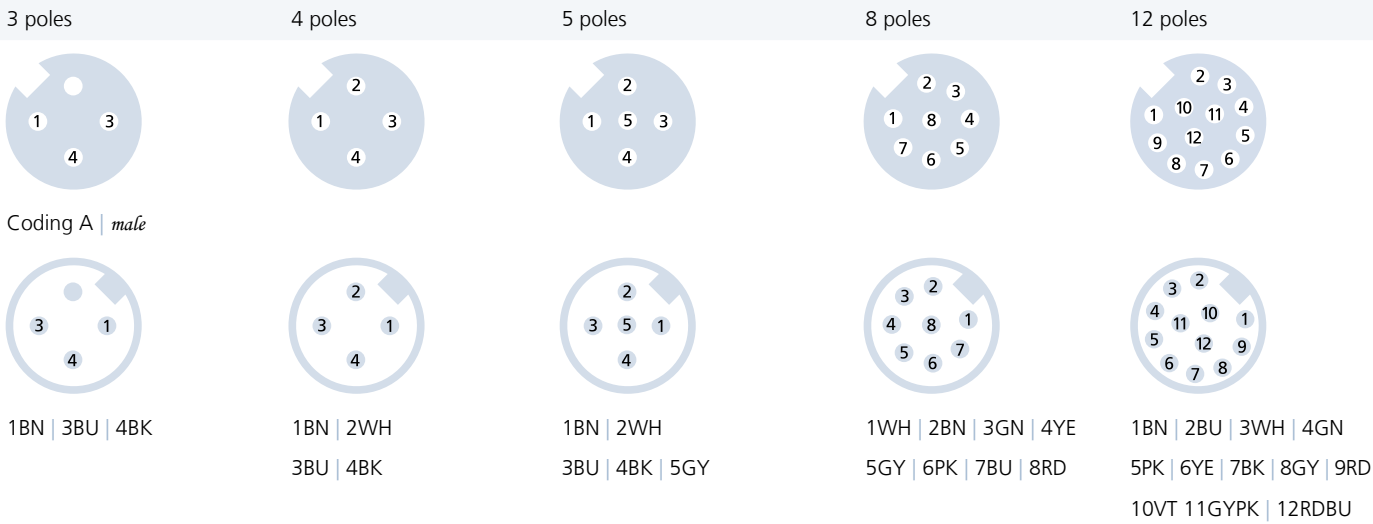


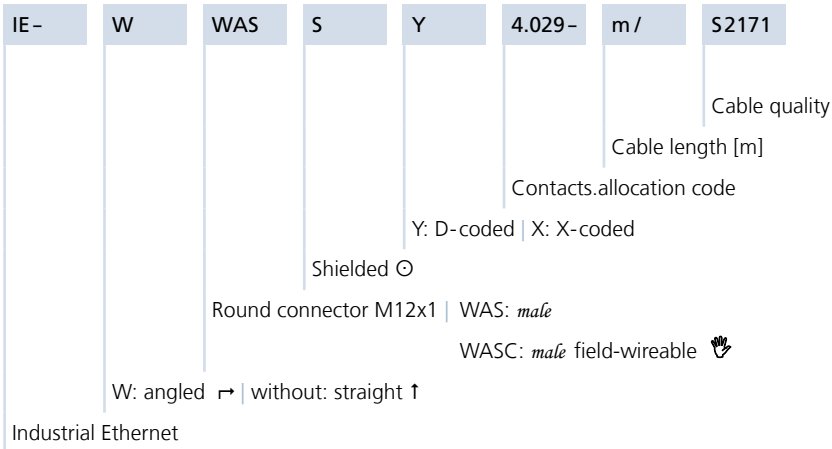
Dimensional drawings see page 38

M12x1 High temperature-proof | junction cable + flanges

Technical data	Round connectors		Flanges	
	Poles	Value	Poles	Value
Rated voltage [U _{max}]	3, 4	250V	3, 4	250V
	5	60V	5	60V
	8, 12	30V	8, 12	30V
Current load [I _{max}]	3, 4, 5	4A	3, 4, 5	4A
	8	2A	8	2A
	12	1.5A	12	1.5A
Insulation resistance		≥10 ⁸ Ω		≥10 ⁸ Ω
Standards		IEC 61076-2-101		IEC 61076-2-101
Materials	Grip	PBT GF, BK	Flange housing	CuZn, nickel-plated
	Contact carrier	PBT GF, BK	Contact carrier	PBT GF, BK
	Sealing (<i>female</i>)	FPM/FKM	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated	Sealing (screw in thread)	NBR
Ambient temperature		-20°C...+150°C		-20°C...+150°C
Degree of pollution		3		3
Protection class (in threaded condition)		IP65		IP67
Mechanical life cycle		>100 mating cycles		>100 mating cycles

Coding A | *female*





Product line	Version	Poles	Cable quality	Type-designation		2m	Cable length m	
IE_M12x1 $\bigcirc$	4 D Cat5e	<i>m</i>	PUR S2171 [®]	IE-WASSY4.029-m/S2171		8031449	8031450	8031451
		<i>m</i>	PUR S2171 [®]	IE-WWASSY4.029-m/S2171		8044087	8041940	8044088
		<i>m</i>		IE-WASSCSY4S	8032913			
	8 X Cat6A	<i>m</i>	PUR S3500 [®]	IE-WASSX8.066-m/S3500		8049457	8049458	8049459
			PUR S3500 [®]	IE-WWASSX8.066-m/S3500		8055441	8055442	8055443
			PUR S3900 [®]	IE-WASSX8.066-m/S3900		8055348	8055349	8055350
		<i>m</i>		IE-WASSCSX8S	8050231			
100m buscable			PUR S2171 [®]		8036284			
			PUR S3500 [®]		8053361			
			PUR S3900 [®]		8055779			

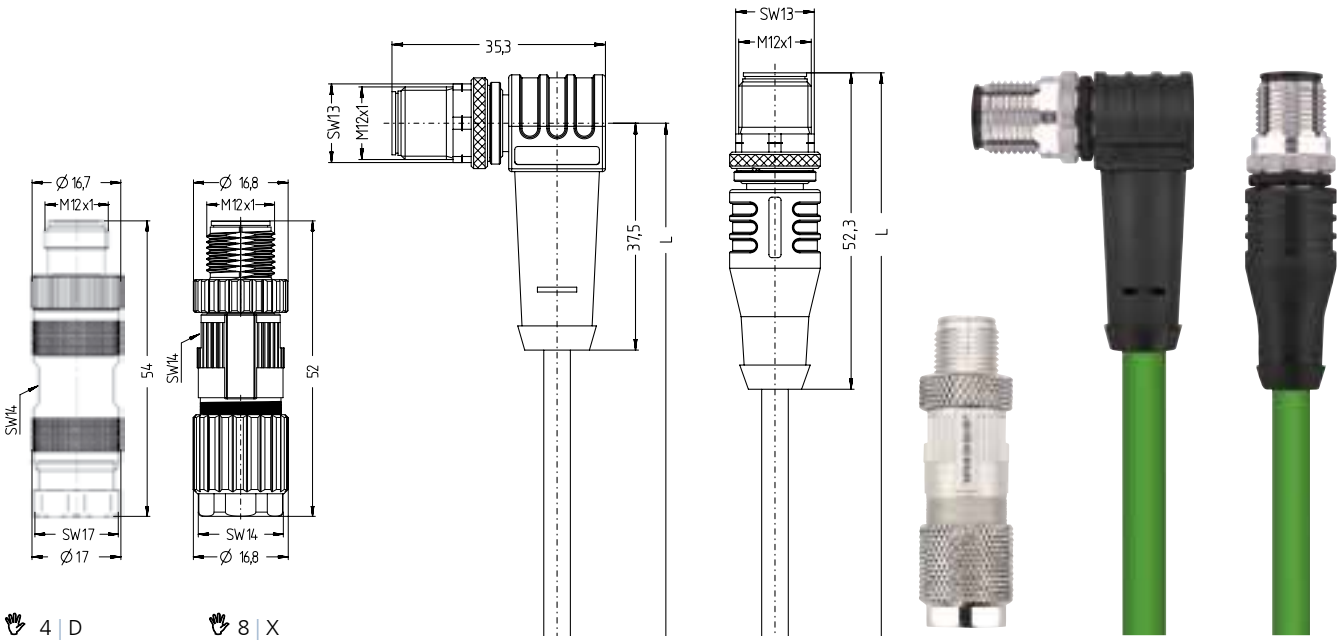
Other cable lengths are available upon request.

Cable quality

S2171 | S3500: Flexible, PVC-, silicone-, and halogen free Ethernet cable with green PUR outer jacket (similar RAL 6018) and polyethylene wire isolation. This cable is oil resistant according to DIN EN 60811-2-1 and flame immune according to IEC 60332-1-2. Drag-chain application is possible. Cable admitted according to UL.

S3900: Shielded Ethernet-cable in PUR-quality for safe and industrial-suited data transmission in automation and fieldbus technology. The cable is UL-approved and meets the Cat6A requirements. Materials and constructive setup allow for a mechanical stress. The cable is flame-retardant according to IEC 60332-1-2.

ESCHA Nomenclatur		S2171 [®] PNO	S3500 [®]	S3900 [®] PNO
Cable quality for		M12x1 4 D	M12x1 8 X	M12x1 8 X
Transmission category		Cat5e	Cat7	Cat6A
Nominal diameter		Ø 6.5mm	Ø 6.4mm	Ø 8.6mm
Wire-structure data		4xAWG22/7	4x2xAWG26/7	4x2xAWG23/7
Wire colours		WH YE BU OG	WH(BU) BU; WH(OG) OG; WH(GN) GN; WH(BN) BN	WH(BU) BU; WH(OG) OG; WH(GN) GN; WH(BN) BN
Bending radius	single	5xd	5xd	4xd
	repeated	7.5xd	7.5xd	8xd
	draig-chain	≥200mm (v _{max} = 4 m/s a _{max} = 4 m/s ²)	≥200mm (v _{max} = 4 m/s a _{max} = 4 m/s ²)	–
Temperature range		-40°C...+70°C	-40°C...+80°C	-40°C...+80°C



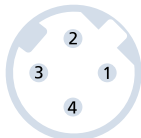
4 | D 8 | X

Industrial Ethernet _ M12x1 *male*

Technical data	Round connector	Round connector	Field-wireable	
	4 D	8 X	4 D	8 X
Rated voltage [U _{max}]	250V	50V _{AC} 60V _{DC}	250V	50V _{AC} 60V _{DC}
Current load [I _{max}]	4A	0.5A	4A	0.5A
Insulation resistance	≥10 ⁸ Ω	≥10 ⁸ Ω	≥10 ⁸ Ω	≥10 ⁸ Ω
Standards	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Materials	Grip	TPU, BK	CuZn	Zinc diecasting, nickel-pl.
	Contact carrier	TPU, BK	PA, transparent	PA, BU
	Contacts	CuZn, gold-plated	CuZn, gold-plated	CuSn, gold-plated
	Locking mec. (M12x1)	CuZn, nickel-plated	CuZn, nickel-plated	CuZn
	Sealing		FPM/FKM	FPM/FKM
	Cut-contacts			Zn, nickel-plated
	Locking mec. (M15x0,5)			Bronze, tin-plated
	Stress-relief/Loader			PA
	Shielding			Bronze, tin-plated
Ambient temperature	-30°C...+90°C	-30°C...+90°C	-25°C...+85°C	-25°C...+85°C
Degree of pollution	3	2	3	2
Protection class (in threaded condition)	IP67, IP69K	IP67, IP69K	IP67	IP67
Mechanical life cycle	>100 mating cycles	>100 mating cycles	>100 mating cycles	>100 mating cycles
Core cross-section/Clamping ability			AWG24/7, AWG22/7, AWG22/1	AWG26/7 - AWG22/7 AWG24/1 - AWG22/1
External diameter of the cable			Ø 6...8mm	Ø 5...9,7mm
Connection			Cut-clamp	Cut-clamp

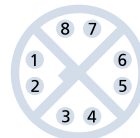
Coding | *male*

4 poles | D



1YE | 2WH | 3OG | 4BU

8 poles | X



1WH(OG) | 2OG; 3WH(GN) | 4GN;
5WH(BN) | 6BN; 7WH(BU) | 8BU

Feed-through connection

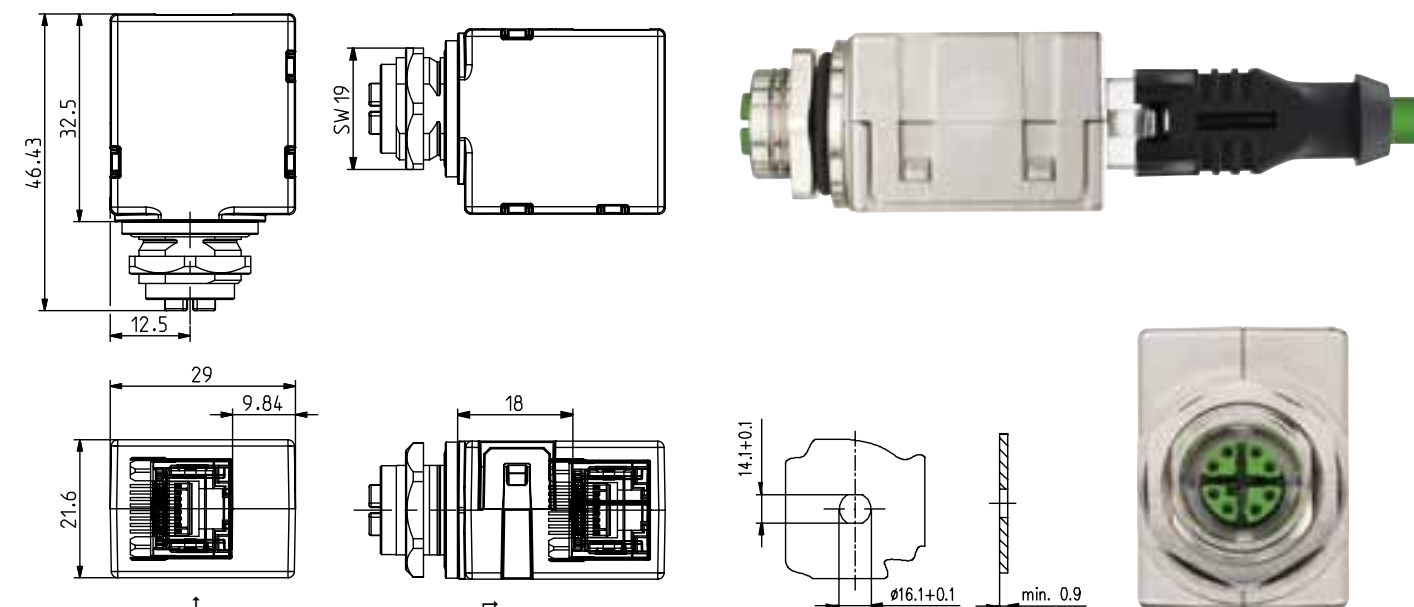
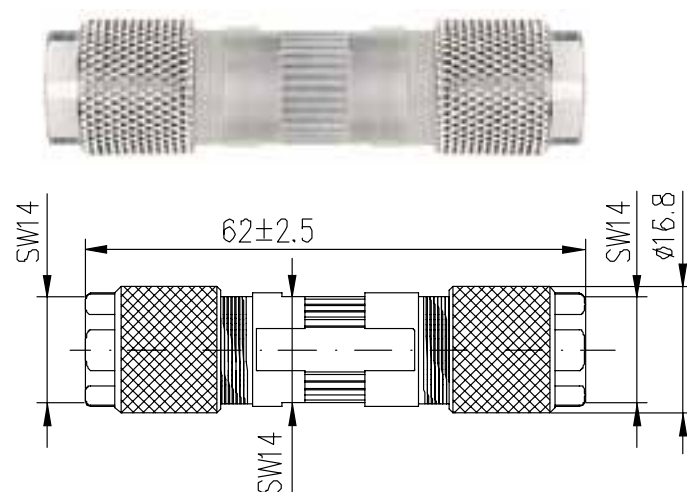


Product line	Version	Poles	Type-designation	Order-No.
Back-wall mounting (threaded front)	    Cat6A	8 X	IE-FKFDXSX8-RJ45K	8055773
	    Cat6A	8 X	IE-WFKFDXSX8-RJ45K	8055774

Cable-connection



Product line	Version	Poles	Type-designation	Order-No.
IE Cable-connection	  Cat 7 Class F _A	8	IE-LVCS8	8055776

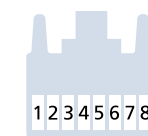
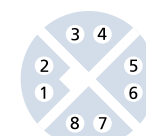


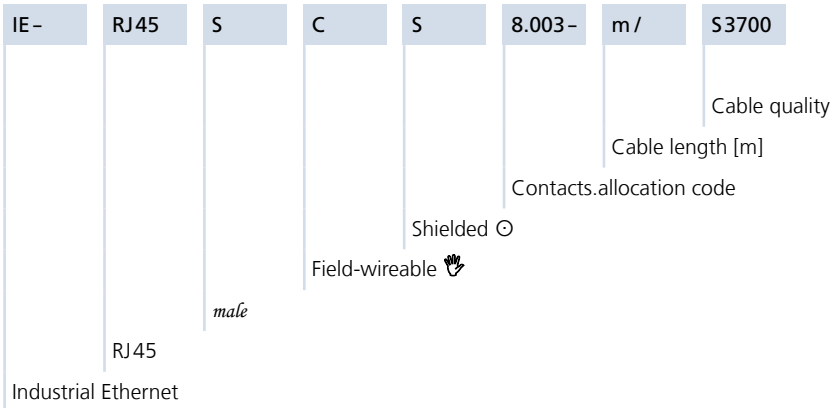
Industrial Ethernet _ M12x1 Feed-through connection+ Cable-connection

Technische Daten		Feed-through connection	Cable-connection 
Rated voltage [U _{max}]		50 V _{AC} 60 V _{DC}	50 V _{AC} 60 V _{DC}
Current load [I _{max}]		0.5 A	0.5 A
Insulation resistance		≥ 10 ⁸ Ω	≥ 10 ⁸ Ω
Standards		M12x1: IEC 61076-2-109 RJ45: IEC 60603-7-51	IEC 61076-2-101
Material	Housing	Zinc diecasting	Zinc diecasting
	Contact carrier/ Loader	PA, GN/BK	PA
	Contacts	M12x1: CuZn, gold-plated	CuSn
	Locking mec.	CuZn, nickel-plated	CuZn, nickel-plated
	O-Ring	M12x1: FPM/FKM	
	Contacts		CuSn
	Shielding	CuSn	CuSn
Ambient temperature		-25°C...+85°C	-40°C...+85°C
Degree of pollution		2	2
Protection class (in threaded condition)		M12x1: IP67	IP67
Mechanical life cycle		>100 mating cycles	10 re-connections
Core cross-section/Clamping ability			AWG24/1-AWG22/1 AWG26/7-AWG22/7
External diameter of the cable			Ø 5.0...9.7 mm
Connection			Cut-clamp

Codierung | *male*M12x1 *female* 8-polig | X

RJ45

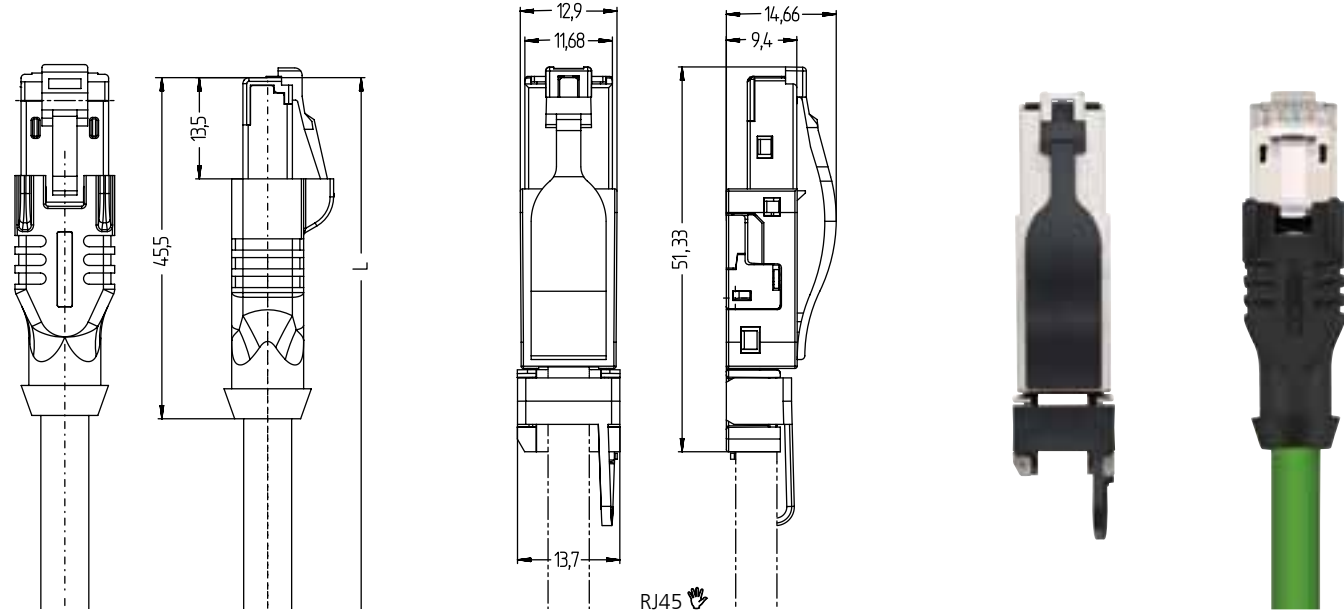




Product line	Poles	Version	Cable quality	Type-designation		Cable length m		
						2m	5m	10m
IE_RJ45 ☉	4-poles Cat5e	<i>m</i> ↑	PUR S3700 [®]	IE-RJ45SS8.003-m/S3700		8052609	8052610	8052611
	8-poles Cat6	<i>m</i> ↑	PUR S3500 [®]	IE-RJ45SS8.002-m/S3500		8052214	8052215	8052216
		<i>m</i> ↑		IE-RJ45SCS8	8048117			
	100m buscable		PUR S3700 [®]		8055781			
			PUR S3500 [®]		8053361			
Other cable-lengths are available upon request.								

Cable quality
Flexible, PVC-, silicone-, and halogen free Ethernet cable with green PUR outer jacket (similar RAL 6018) and polyethylene wire isolation. This cable is oil resistant according to DIN EN60811-2-1 and flame immune according to IEC 60332-1-2. Drag-chain application is possible. Cable admitted according to UL.

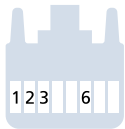
ESCHA Nomenclatur		S3700 [®]	S3500 [®]
Cable quality for		RJ45 4-poles	RJ45 8-poles
Transmission category		Cat5e	Cat7
Nominal diameter		Ø 5.2mm	Ø 6.4mm
Wire-structure data		4xAWG26/7	4x2xAWG26/7
Wire colours		WH YE BU OG	WH(BU) BU; WH(OG) OG; WH(GN) GN; WH(BN) BN
Bending radius	single	5xd	5xd
	repeated	7xd	10xd
Temperature range		-40°C...+70°C	-40°C...+80°C



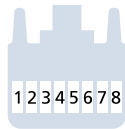
Industrial Ethernet_ RJ45 male

Technical data	Round connector		Field-wireable 🖱️	
	Poles	Value	Poles	Value
Rated voltage [Umax]	4, 8-pole	50V	4, 8-pole	50V
Current load [Imax]	4, 8-pole	1A	4, 8-pole	1A
Insulation resistance		≥10 ⁸ Ω		≥5 ⁸ Ω
Standards		IEC 60603-7-5		IEC 60603-7-5
Materials	Grip	TPU, BK	Housing	Zinc diecasting
	Contact carrier/Loader	PC, transparent	Loader	PA, transparent
	Contacts	CuZn, gold-plated	Contacts	Phosphor Bronze, gold-plated
	Shielding	CuZn, nickel-plated	Shielding	CuZn, nickel-plated
Ambient temperature		-20°C...+75°C		-40°C...+70°C
Degree of pollution		1		1
Protection class (in plugged condition)		IP20		IP20
Mechanical life cycle		>750 mating cycles		>750 mating cycles
Core cross-section/Clamping ability			4, 8-pole	AWG26/7 - AWG22/7 AWG24/1 - AWG22/1
External diameter of the cable			4, 8-pole	Ø 5.5...8.5mm
Connection				Cut-clamp

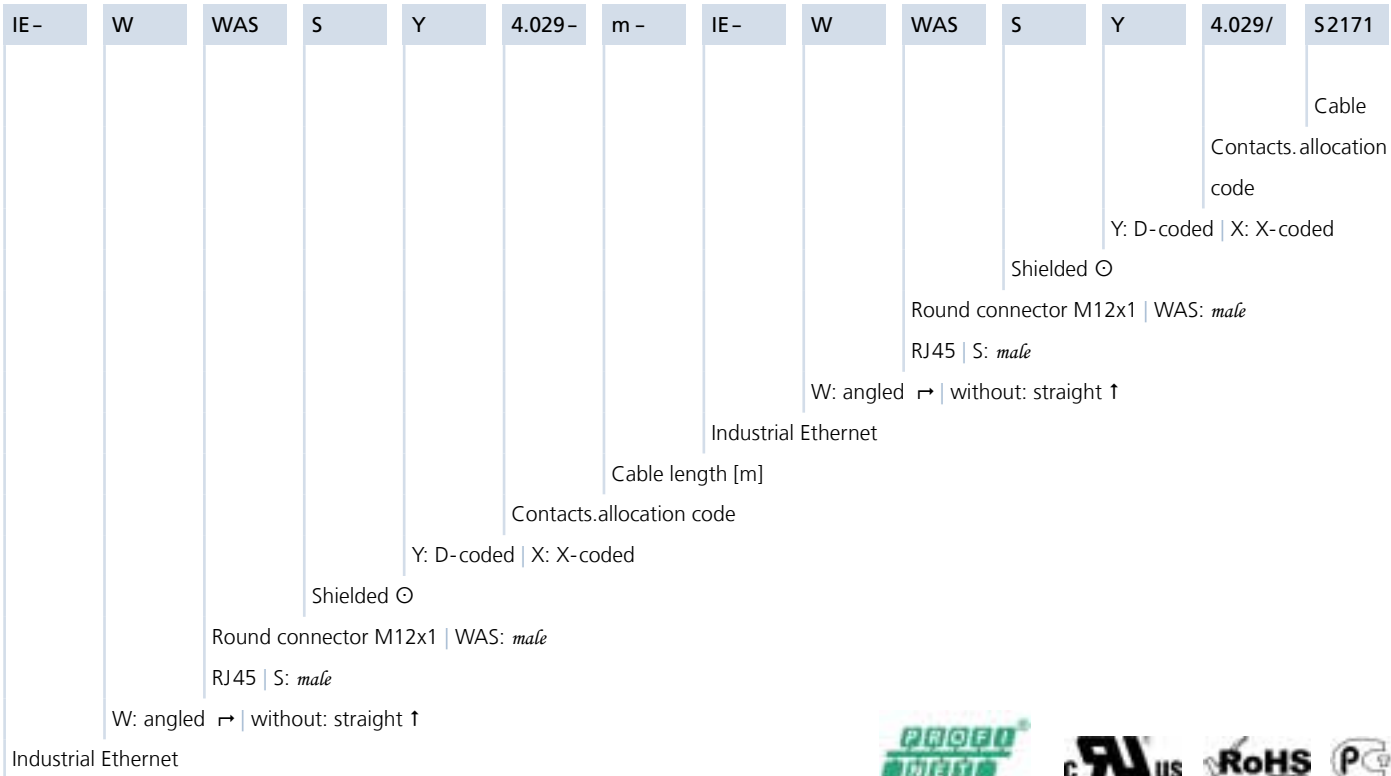
Pinning RJ45
Industrial | 4-poles T568B | 8-poles



1YE | 2OG | 3WH | 6BU



1WH(OG) | 2OG; 3WH(GN) | 4GN;
5WH(BN) | 6BN; 7WH(BU) | 8BU



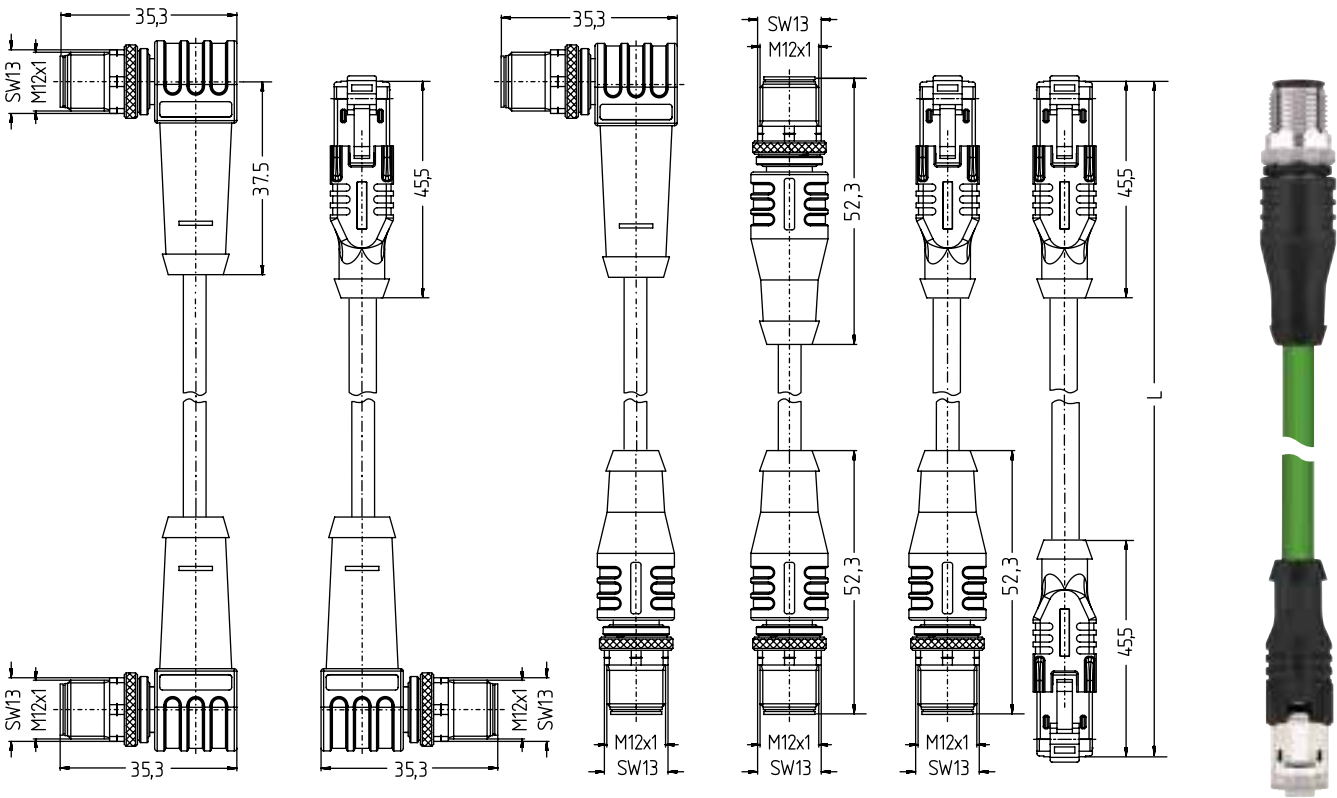
Product line	Version		Cable-quality	Type-designation	1m	Cable length m	2m	5m
IE_M12x1 ⊙	4 D Cat5e	<i>m</i> ↑ __ <i>m</i> ↑	PUR S2171 [®]	IE-WASSY4.029-m-IE-WASSY4.029/S2171	8031558	8031560	8031561	
		<i>m</i> ↗ __ <i>m</i> ↑	PUR S2171 [®]	IE-WWASSY4.029-m-IE-WASSY4.029/S2171	8046398	8044089	8044090	
		<i>m</i> ↗ __ <i>m</i> ↗	PUR S2171 [®]	IE-WWASSY4.029-m-IE-WWASSY4.029/S2171	8046893	8036902	8036903	
	8 X Cat6A	<i>m</i> ↑ __ <i>m</i> ↑	PUR S3500 [®]	IE-WASSX8.066-m-IE-WASSX8.066/S3500	8048865	8049460	8049461	
			PUR S3900 [®]	IE-WASSX8.066-m-IE-WASSX8.066/S3900	8055351	8055352	8055353	
		<i>m</i> ↗ __ <i>m</i> ↑	PUR S3500 [®]	IE-WWASSX8.066-m-IE-WASSX8.066/S3500	8055444	8055445	8055446	
IE_RJ45 ⊙	4-pol. Cat5e	RJ45__RJ45	PUR S3700 [®]	IE-RJ45SS8.003-m-IE-RJ45SS8.003/S3700	8052612	8050076	8052613	
	8-pol. Cat5e	RJ45__RJ45	PUR S3500 [®]	IE-RJ45SS8.002-m-IE-RJ45SS8.002/S3500	8052205	8048829	8048830	
IE_M12x1_RJ45 ⊙	4-pol. Cat5e	<i>m</i> ↑ __RJ45	PUR S3700 [®]	IE-WASSY4.029-m-IE-RJ45SS8.003/S3700	8052954	8052955	8052956	
	8-pol. Cat6	<i>m</i> ↑ __RJ45	PUR S3500 [®]	IE-WASSX8.066-m-IE-RJ45SS8.002/S3500	8053444	8053288	8053289	

Other versions and cable-lengths are available upon request.

Cable quality

Detailed description of all cable qualities can be seen from page 181 on.

ESCHA Nomenclatur	S2171 [®] PNO	S3500 [®]	S3900 [®] PNO	S3700 [®]
Cable quality for	M12x1 4 D	M12x1 8 X	M12x1 8 X	RJ45 4-pole
		RJ45 8-pole		
Transmission category	Cat5e	Cat7	Cat6A	Cat5e
Nominal diameter	Ø 6.5mm	Ø 6.4mm	Ø 8.6mm	Ø 5.2mm
Wire-structure data	4xAWG22/7	4x2xAWG26/7	4x2xAWG23/7	4xAWG26/7
Wire colours	WH YE BU OG	WH(BU) BU; WH(OG) OG; WH(GN) GN; WH(BN) BN	WH(BU) BU; WH(OG) OG; WH(GN) GN; WH(BN) BN	WH YE BU OG
Bending radius	single	5xd	4xd	5xd
	repeated	7,5xd	8xd	7xd
	draig-chain	≥200mm (v _{max} = 4m/s a _{max} = 4m/s ²)	—	—
Temperature range	-40°C...+70°C	-40°C...+80°C	-40°C...+80°C	-40°C...+70°C



Industrial Ethernet _ M12x1 RJ45 junction cable

Technical data	M12x1		RJ45	
	Poles	Value	Poles	Value
Rated voltage [U _{max}]	4 D	250V	4, 8-pole	50V
	8 X	50V _{AC} 60V _{DC}		
Current load [I _{max}]	4 D	4A	4, 8-pole	1A
	8 X	0.5A		
Insulation resistance		≥10 ⁸ Ω		
Standards		IEC 61076-2-101/-109		IEC 61076-2-101
Materials	Grip	TPU, BK	Grip	TPU, BK
	Contact carrier 4 D	TPU, BK	Contact carrier/Loader	PC, transparent
	Contact carrier 8 X	PA GF	Contacts	CuZn, gold-plated
	Contacts	CuZn, gold-plated	Shielding	CuZn, nickel-plated
	Locking mechanism	CuZn, nickel-plated		
Ambient temperature		-30°C...+90°C		-20°C...+75°C
Degree of pollution	4 D	3		1
	8 X	2		
Protection class	(in threaded condition)	IP67, IP69K	(in plugged condition)	IP20
Mechanical life cycle		>100 mating cycles		>750 mating cycles

Coding M12x1		Pinning RJ45	
4 poles <i>male</i> D	8 poles <i>male</i> X	Industrial 4-poles	T568B 8-poles
1YE 2WH 3OG 4BU	1WH(OG) 2OG; 3WH(GN) 4GN 5WH(BN) 6BN; 7WH(BU) 8BU	1YE 2OG 3WH 6BU	1WH(OG) 2OG; 3WH(GN) BU 5WH(BU) 6GN; 7WH(BN) BN

IE-

W

FK

F

S

D

Y

5-

0,5/

16/

S3525

Height-tolerance-balance Δh
for different wall thicknesses

Screw in thread 16: M16x1.5
12: M12x1
without: Pg9

0,5: Wire-length [m] | P: Print-contact

Contacts.allocation-code

Coding: Y: D-coded, X: X-coded

Adjustable

Shielded

Threaded front

Flange M12x1 | FK: female

EK: Built-in connector female

W: angled | without: straight

Industrial Ethernet



Industrial Ethernet M12x1-Flanges	Connection	Version	Poles		Type-designation	Order-No.
Front-wall mounting (optional threaded rear)	Wire	$f \mid \uparrow$	4 D	Fig. 3	IE-FKY4.029-0,5/16	8043852
		$f \mid \uparrow \mid \odot$	4 D	Fig. 1	IE-FKFDY4.029-0,5/S2171	8054914
		$f \mid \uparrow \mid \cup$	4 D	Fig. 2	IE-FKDY4.029-0,5/16	8043853
	Print-contact	$f \mid \uparrow \mid \cup$	4 D	Fig. 6	IE-FKDY4-P/16	8047944
		$f \mid \uparrow \mid \odot \mid \cup$	8 X	Fig. 7	IE-FKDSX8-P/12	8050232
		$f \mid \uparrow \mid \odot \mid \cup \mid \Delta h$	8 X	Fig. 7	IE-FKDHSX8-P/12	8053483
Back-wall mounting (threaded front)	Print-contact	$f \mid \uparrow \mid \cup$	4 D	Fig. 8	IE-FKFDY4-P/16	8047945
		$f \mid \uparrow \mid \odot \mid \cup$	8 X	Fig. 9	IE-FKFDX8-P	8053484
		$f \mid \uparrow \mid \odot \mid \cup \mid \Delta h$	8 X	Fig. 9	IE-FKFDHSX8-P	8053485
		$f \mid \curvearrowright \mid \odot \mid \Delta h < 2,5 \text{ mm}$	4 D	Fig. 4	IE-WFKFSY4-P/12/S3525	8050282
		$f \mid \curvearrowright \mid \odot \mid \Delta h < 4,0 \text{ mm}$	4 D	Fig. 4	IE-WFKFSY4-P/12/S3540	8050284
		$f \mid \curvearrowright \mid \odot \mid \Delta h < 5,0 \text{ mm}$	4 D	Fig. 4	IE-WFKFSY4-P/12/S3550	8050285
	Insertion connector	Print-contact	$f \mid \uparrow$	8 X	Fig. 5	IE-EKSX8-P
Other wire- and print-contact-lengths are available upon request.						



Industrial Ethernet _ M12x1 flanges		
Technical data	Poles	Value
Rated voltage [Umax]	4 D	250V
	8 X	50Vac 60Vdc
Current load [Imax]	4 D	4A
	8 X	0.5A
Insulation resistance		$\geq 10^8 \Omega$
Standards		IEC 61076-2-101
Materials	Flange housing	CuZn, nickel-plated
	Contact carrier	TPU, GN
	Contact carrier	PA, GN
	Contacts	CuZn, gold-plated
	Sealing	FPM/FKM
	Sealing (screw in thread)	NBR
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

Coding

4 poles female | D

8 poles female | X

1YE | 2WH | 3OG | 4BU

1WH(OG) | 2OG, 3WH(GN) | 4GN,
5WH(BN) | 6BN, 7WH(BU) | 8BU

IE-

W

WAS

S

Y

4.029-

m /

S3800

Cable quality

Cable length [m]

Contacts.allocation code

D-coded

Shielded Ø

Round connector M12x1 | WAS: *male*

WASC: *male* field-wireable

W: angled ↗ | without: straight ↑

Industrial Ethernet



Product line	Poles	Version	Cable quality	Type-designation		Cable length m		
						2m	5m	10m
IE_M12x1 ⌀	4 D Cat5e	<i>m</i> ↑	PUR S3800 [®]	IE-WASSY4.029-m/S3800		8055493	8055494	8055495
		<i>m</i> ↗	PUR S3800 [®]	IE-WVASSY4.029-m/S3800		8055499	8055500	8055501
		<i>m</i> ↑		IE-WASC SY4S	8032913			
		100m buscable		PUR S3800 [®]		8055782		

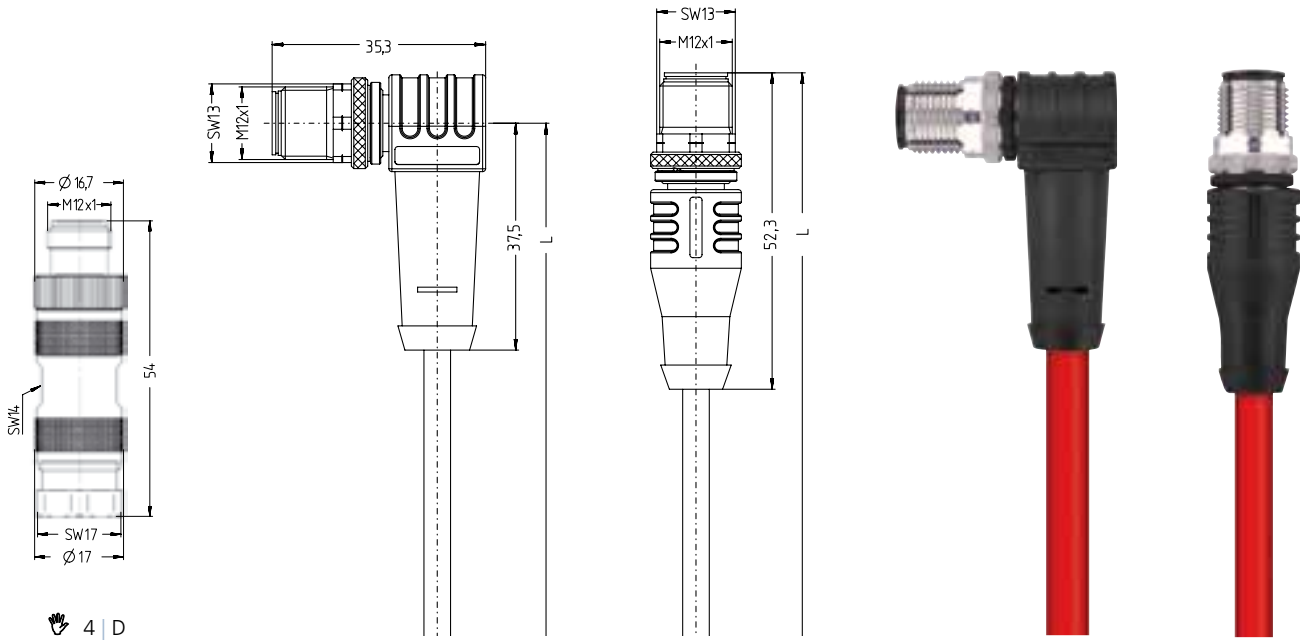
Other versions and cable-lengths are available upon request.

Cable quality

Flexible, PVC-, silicone-, and halogen free Ethernet cable with red PUR outer jacket (similar RAL 6018) and polyethylene wire isolation. This cable is oil resistant according to DIN EN60811-2-1 and flame immune according to IEC 60332-1-2. Drag-chain application is possible. Cable admitted according to UL.

ESCHA Nomenclatur	S3800®
Cable quality for	M12x1 4 D
Transmission category	Cat5e
Nominal diameter	Ø 6.5mm
Wire-structure data	4xAWG22/7
Wire colours	WH YE BU OG

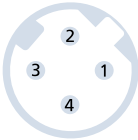
Bending radius	single	4xd
	repeated	8xd
	draig-chain	≥200mm (Vmax = 4m/s amax = 4m/s²)
Temperature range		-40°C...+70°C



Industrial Ethernet | sercos _ M12x1 *male*

Technical data	Round connector	Field-wireable
Rated voltage [Umax]	250V	250V
Current load [Imax]	4A	4A
Insulation resistance	≥10 ⁸ Ω	≥10 ⁸ Ω
Standards	IEC 61076-2-101	IEC 61076-2-101
Materials	Grip Contact carrier Contacts Locking mec. (M12x1) Sealing	CuZn PA, BU CuSn, gold-plated CuZn, nickel-plated FPM/FKM
Ambient temperature	-30°C...+90°C	-25°C...+85°C
Degree of pollution	3	3
Protection class (in threaded condition)	IP67, IP69K	IP67
Mechanical life cycle	>100 mating cycles	>100 mating cycles
Core cross-section/Clamping ability		AWG24/7, AWG22/7, AWG22/1
External diameter of the cable		Ø 6...8mm
Connection		Cut-clamp

Coding | *male*
4 poles | D



1YE | 2WH | 3OG | 4BU

IE -	RJ45	S	C	S	8.003 -	m /	S3800
				Cable quality			
				Cable length [m]			
				Contacts.allocation code			
				Shielded ☉			
				Field-wireable 🖱			
				male			
				RJ45			
				Industrial Ethernet			



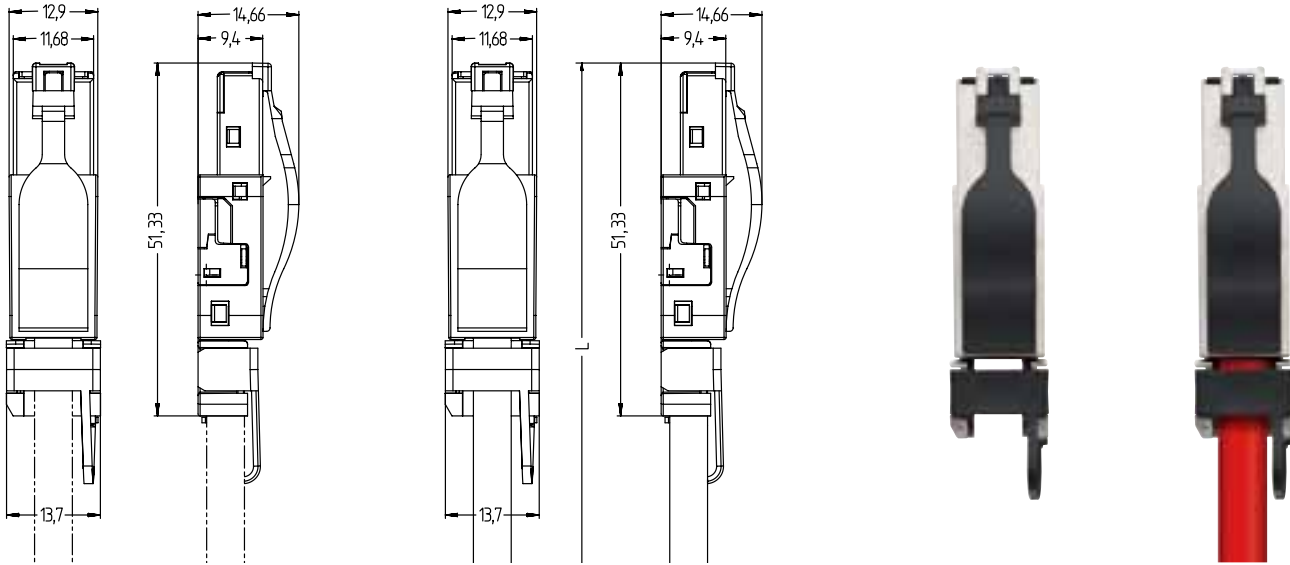
Product line	Poles	Version	Cable quality	Type-designation		Cable length m		
						2m	5m	10m
IE_RJ45 ☉	4-adrig Cat5e	<i>m</i> ↑	PUR S3800 [®]	IE-RJ45SCS8.003-m/S3800		8055645	8055646	8055647
		<i>m</i> ↑ 		IE-RJ45SCS8	8048117			
	100m buscable		PUR S3800 [®]		8055782			

Other versions and cable-lengths are available upon request.

Cable quality

Flexible, PVC-, silicone-, and halogen free Ethernet cable with red PUR outer jacket (similar RAL 6018) and polyethylene wire isolation. This cable is oil resistant according to DIN EN60811-2-1 and flame immune according to IEC 60332-1-2. Drag-chain application is possible. Cable admitted according to UL.

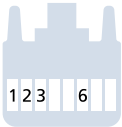
ESCHA Nomenclatur		S3800 [®]
Cable quality for		M12x1 4 D
Transmission category		Cat5e
Nominal diameter		Ø 6.5mm
Wire-structure data		4xAWG22/7
Wire colours		WH YE BU OG
Bending radius	single	4xd
	repeated	8xd
	draig-chain	≥200mm (Vmax = 4m/s amax = 4m/s²)
Temperature range		-40°C...+70°C



Industrial Ethernet | sercos_ RJ45 male

Technical data	RJ45	
	Poles	Value
Rated voltage [Umax]	4	50V
Current load [Imax]	4	1A
Insulation resistance	≥5 ⁸ Ω	
Standards	IEC 60603-7-5	
Materials	Housing	Zinc diecasting
	Loader	PA, transparent
	Contacts	Phosphor Bronze, gold-plated
	Shielding	CuZn, nickel-plated
Ambient temperature	-40°C...+70°C	
Degree of pollution	1	
Protection class (in threaded condition)	IP20	
Mechanical life cycle	>750 mating cycles	
Core cross-section/Clamping ability	4	AWG26/7 - AWG22/7 AWG24/1 - AWG22/1
External diameter of the cable	4	Ø 5.5...8.5mm
Connection	Cut-clamp	

Pinning RJ45
Industrial 4-poles



1YE | 2OG | 3WH | 6BU

[illegible]

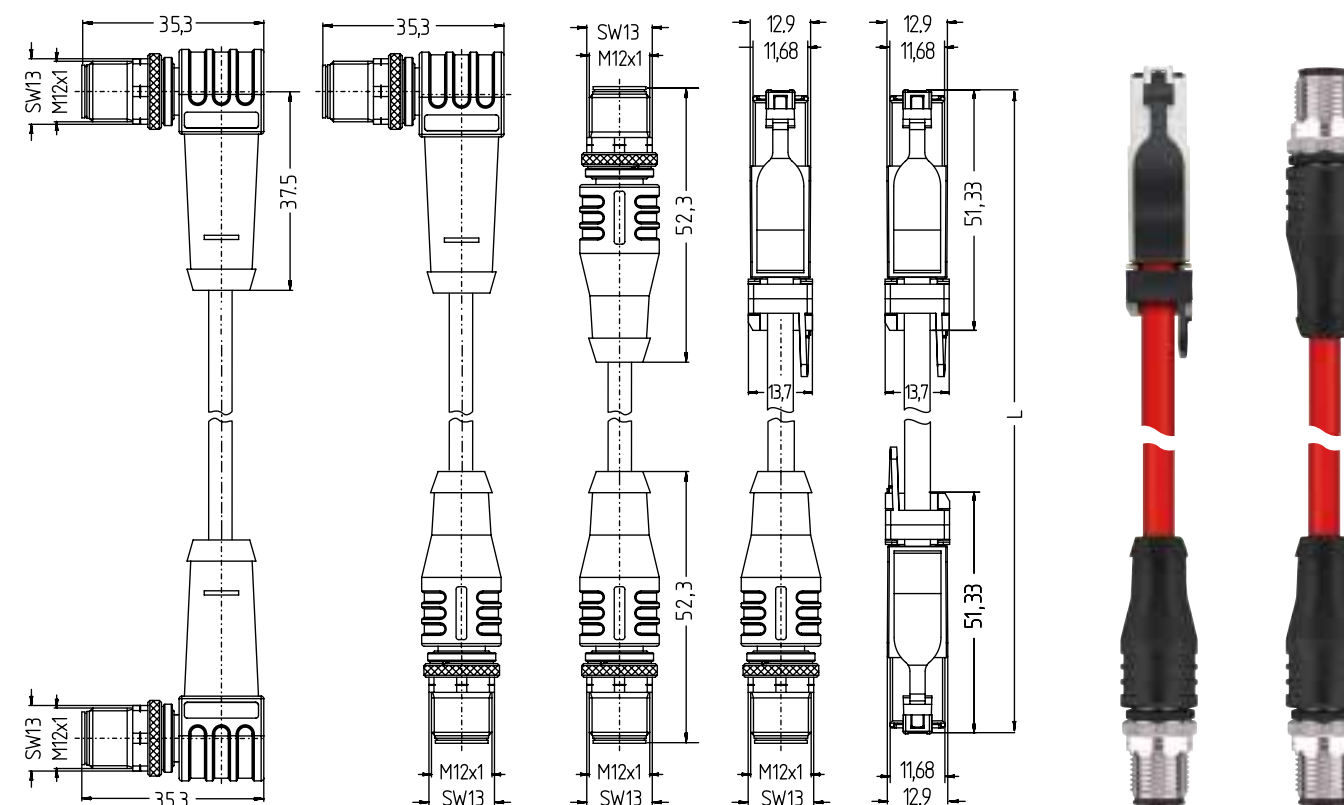
Product line	Poles	Version	Cable quality	Type-designation		Cable length m		
						1m	2m	5m
IE_M12x1 ☉	4 D Cat5e	<i>m ↑ __ m ↑</i>	PUR S3800 [®]	IE-WASSY4.029-m-IE-WASSY4.029/S3800	8055496	8055497	8055498	
		<i>m ↗ __ m ↑</i>	PUR S3800 [®]	IE-WWASSY4.029-m-IE-WASSY4.029/S3800	8055502	8055503	8055504	
		<i>m ↗ __ m ↗</i>	PUR S3800 [®]	IE-WWASSY4.029-m-IE-WWASSY4.029/S3800	8055505	8055506	8055507	
IE_RJ45 ☉	4-adr. Cat5e	RJ45 __ RJ45	PUR S3800 [®]	IE-RJ45SCS8.003-m-IE-RJ45SCS8.003/S3800	8055511	8055512	8055513	
IE_M12x1 _RJ45 ☉	4-adr. Cat5e	<i>m ↑ __</i> RJ45	PUR S3800 [®]	IE-WASSY4.029-m-IE-RJ45SCS8.003/S3800	8055508	8055509	8055510	

Other versions and cable-lengths are available upon request.

Cable quality

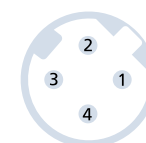
Flexible, PVC-, silicone-, and halogen free Ethernet cable with red PUR outer jacket (similar RAL 6018) and polyethylene wire isolation. This cable is oil resistant according to DIN EN60811-2-1 and flame immune according to IEC 60332-1-2. Drag-chain application is possible. Cable admitted according to UL.

ESCHA Nomenclatur	S3800 
Cable quality for	M12x1 4 D
Transmission category	Cat 5e
Nominal diameter	Ø 6.5 mm
Wire-structure data	4xAWG 22/7
Wire colours	WH YE BU OG
Bending radius	4 x d
single	
repeated	8 x d
draig-chain	≥200 mm (v _{max} = 4 m/s a _{max} = 4 m/s²)
Temperature range	-40°C...+70°C

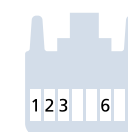


Industrial Ethernet sercos_ M12x1 RJ45 junction cable				
Technical data	M12x1		RJ45	
	Poles	Value	Poles	Value
Rated voltage [Umax]	4 D	250V	4	50V
Current load [Imax]	4 D	4A	4	1A
Insulation resistance	≥10 ⁸ Ω			
Standards	IEC 61076-2-101/-109		IEC 60603-7-5	
Materials	Grip	TPU, BK	Grip	Zinc diecasting
	Contact carrier	TPU, BK	Contact carrier/Loader	PA, BK
	Contacts	CuZn, gold-plated	Contacts	Bronze, gold-plated
	Locking mechanism	CuZn, nickel-plated	Shielding	CuZn, nickel-plated
Ambient temperature	-30°C...+90°C		-40°C...+75°C	
Degree of pollution	4 D	3	1	
Protection class	(in threaded condition)	IP 67, IP69K	(in plugged condition)	IP20
Mechanical life cycle	>100 mating cycles		>750 mating cycles	
Core cross-section/Clamping ability			4	AWG26/7 - AWG22/7 AWG24/1 - AWG22/1
External diameter of the cable			4	Ø 5.5...8.5 mm
Connection			Cut-clamp	

Coding M12x1	Pinning RJ45
4 poles <i>male</i> D	Industrial 4-poles



1YE | 2WH | 3OG | 4BU



1YE | 2OG | 3WH | 6BU

IE-

W

FK

F

S

D

Y

5-

0,5/

16/

S3525

Height-tolerance-balance Δh
for different wall thicknesses

Screw in thread 16: M16x1.5
12: M12x1
without: Pg9

0,5: Wire-length [m] | P: Print-contact

Contacts allocation code

Y: D-coded

Adjustable

Shielded

Threaded front

Flange M12x1 | FK: female

EK: Built-in connector female

W: angled | without: straight

Industrial Ethernet



Industrial Ethernet M12x1-Flanges	Connection	Version		Type-designation	Order-No.
Front-wall mounting (optional threaded rear)	Wire	$f \mid \uparrow$	Fig. 3	IE-FKY4.029-0,5/16/S38	8055845
		$f \mid \uparrow \mid \odot$	Fig. 1	IE-FKSY4.029-0,5/16/S3800/S38	8055846
		$f \mid \uparrow \mid \cup$	Fig. 2	IE-FKDY4.029-0,5/16/S38	8055847
Back-wall mounting (threaded front)	Print-contact	$f \mid \uparrow \mid \cup$	Fig. 6	IE-FKDY4-P/16/S38	8055848
		$f \mid \uparrow \mid \cup$	Fig. 5	IE-FKDY4-P/16/S38	8055849
	Print-contact	$f \mid \curvearrowright \mid \odot \mid \Delta h < 2.5 \text{ mm}$	Fig. 4	IE-WFKFSY4-P/12/S3825	8055850
		$f \mid \curvearrowright \mid \odot \mid \Delta h < 4.0 \text{ mm}$	Fig. 4	IE-WFKFSY4-P/12/S3840	8055851
		$f \mid \curvearrowright \mid \odot \mid \Delta h < 5.0 \text{ mm}$	Fig. 4	IE-WFKFSY4-P/12/S3850	8055852

Other wire- and print-contact-lengths are available upon request.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig.5



Fig. 4



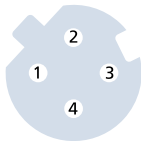
Fig. 6

Dimensional drawings see page 96/97

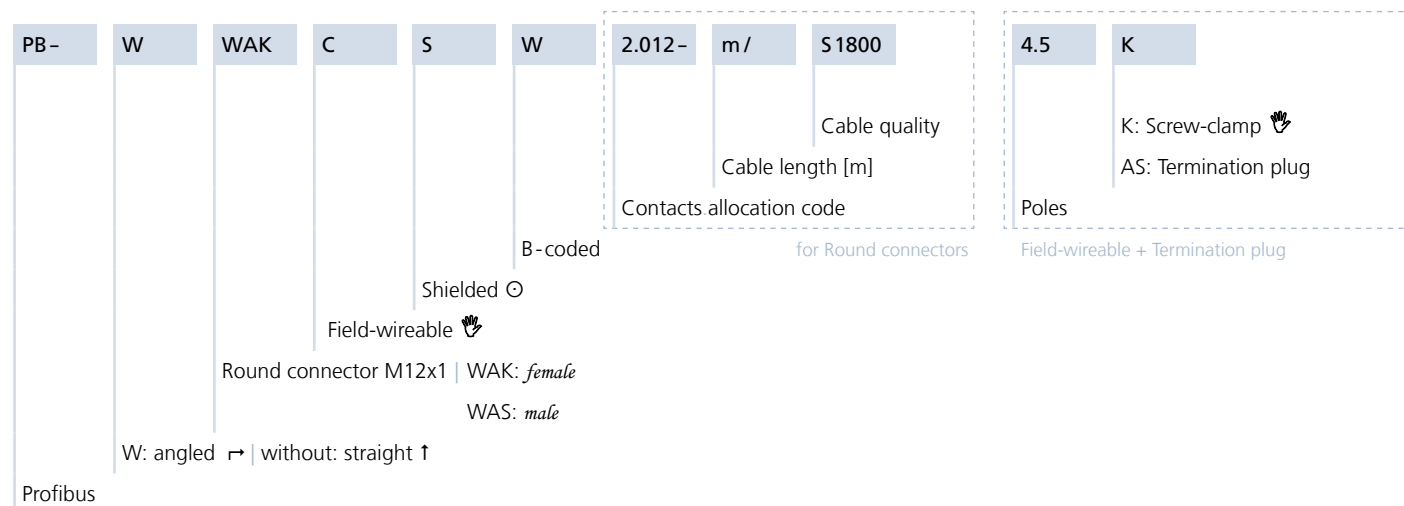
Industrial Ethernet | sercos _ M12x1 flanges

Technical data	Poles	Value
Rated voltage [Umax]	4 D	250V
Current load [Imax]	4 D	4A
Insulation resistance		$\geq 10^8 \Omega$
Standards		IEC 61076-2-101
Materials	Flange housing	CuZn, nickel-plated
	Contact carrier $\uparrow$	TPU, RD
	Contact carrier $\curvearrowright$	PA6, RD
	Contacts	CuZn, gold-plated
	Sealing	FPM/FKM
	Sealing (screw in thread)	NBR
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

Coding
4 poles female | D



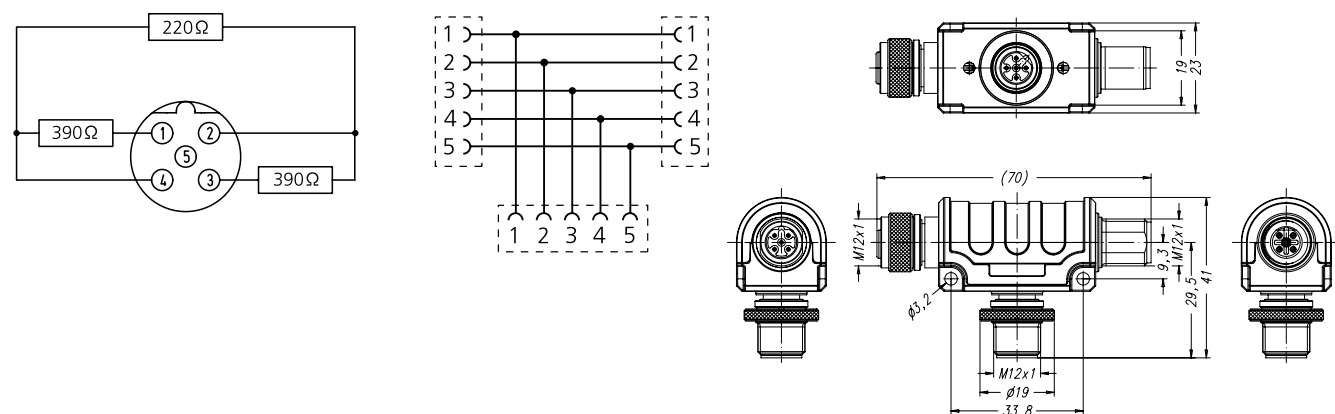
1YE | 2WH | 3OG | 4BU



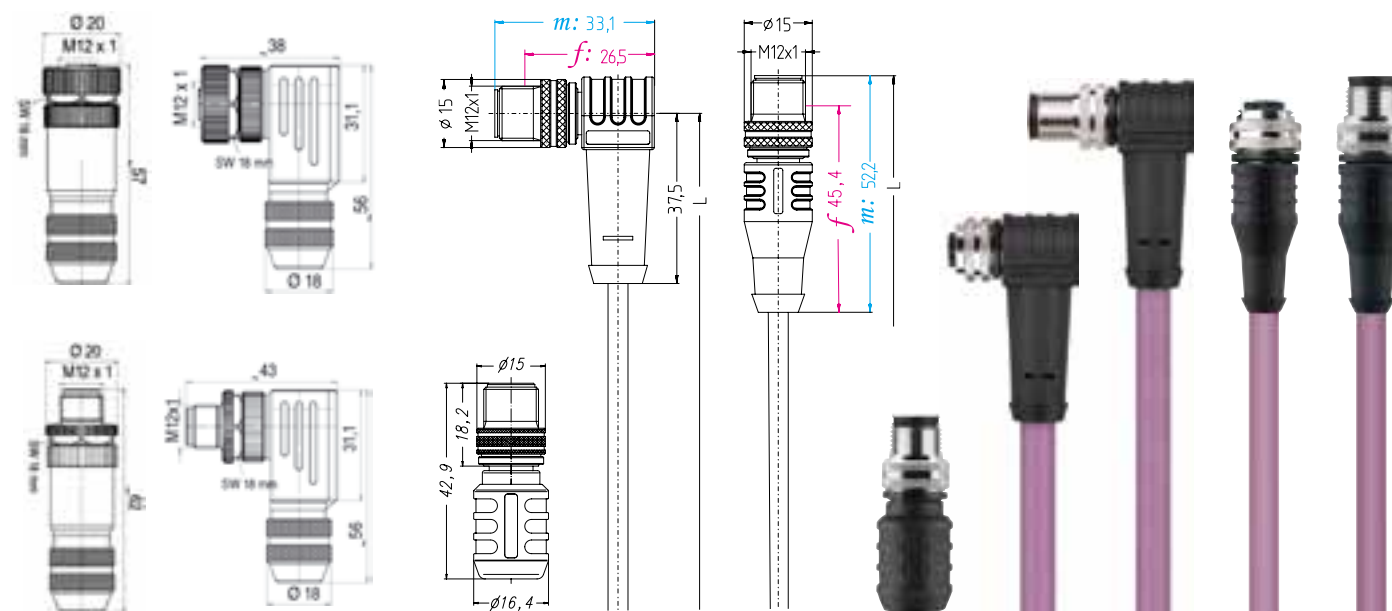
Product line	Version	Cable-quality	Type-designation		2m	Cable length m	10m
PB_M12x1 ☉	$f \mid \uparrow$	PUR S1800 [®]	PB-WAKSW2.012-m/S1800		8043866	8043868	8043869
	$f \mid \rightarrow$	PUR S1800 [®]	PB-WWAKSW2.012-m/S1800		8043870	8043871	8043872
	$m \mid \uparrow$	PUR S1800 [®]	PB-WASSW2.012-m/S1800		8043873	8043874	8043875
	$m \mid \rightarrow$	PUR S1800 [®]	PB-WWASSW2.012-m/S1800		8043876	8043877	8043878
	$f \mid \uparrow \mid \img alt="Hand icon" data-bbox="798 488 818 518"/>$		PB-WAKCSW4.5K	8031376			
	$f \mid \rightarrow \mid \img alt="Hand icon" data-bbox="798 538 818 568"/>$		PB-WASCSW4.5K	8031375			
	$m \mid \uparrow \mid \img alt="Hand icon" data-bbox="798 588 818 618"/>$		PB-WWAKCSW4.5K	8040235			
	$m \mid \rightarrow \mid \img alt="Hand icon" data-bbox="798 638 818 668"/>$		PB-WWASCSW4.5K	8040236			
	Termination plug $m \mid \uparrow$		PB-WASSW4.5-AS	8043520			
	T-junction m_m_f		FSW5-WASW5-WAKW5-PDP	8011228			
	100m buscable	PUR S1800 [®]		8043857			

Other cable lengths are available upon request.

Wiring	Dimensional drawing
Termination plug	T-junction $\ominus$

Cable quality PUR | S1800

Flexible PVC- silicon- and halogen-free bus cable with PUR outer jacket and wire insulation of Polyethylene. Shielded cable meets the transmission values for RSA485 (cable type A) of the Profibus organization and is especially suitable for the high requirements of industrial machinery- and plant construction. Temperature range -25°C...+80°C. Drag-chain application with a bending radius of min.10xD as well as a travel speed of 200m/min related to a maximum acceleration of 5m/s² is possible. The cable is oil resistant and flame retardant according to DINEN60332-2-2 as well as chemicals-, hydrolysis-, and microbes resistant. UL and CSA approved.



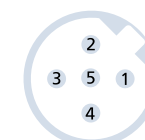
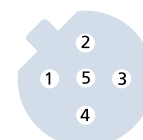
Profibus _ M12x1

Technical data	Round connector		Field-wireable 	
	Poles	Value	Poles	Value
Rated voltage [Umax]	5	60V	5	125V
Current load [Imax]	5	4A	5	4A
Insulation resistance		≥10 ⁸ Ω	≥10 ⁸ Ω	
Standards		IEC 61076-2-101	IEC 61076-2-101	
Materials	Grip	TPU, BK	Grip	PA, Zinc diecasting, nickel-pl.
	Contact carrier	TPU, BK	Contact carrier	PA
	Sealing (<i>female</i>)	FPM/FKM	Contacts	CuZn, gold-plated
	Contacts	CuZn, gold-plated		
	Locking mechanism	CuZn, nickel-plated		
Ambient temperature		-30°C...+90°C	-25°C...+85°C	
Degree of pollution		3	3	
Protection class (in threaded condition)		IP67, IP69K	IP67	
Mechanical life cycle		>100 mating cycles	>100 mating cycles	
Core cross-section/Clamping ability		0.75 mm² AWG 18		
External diameter of the cable		Ø 6...8 mm		
Connection			Screw-clamp, shieldable	

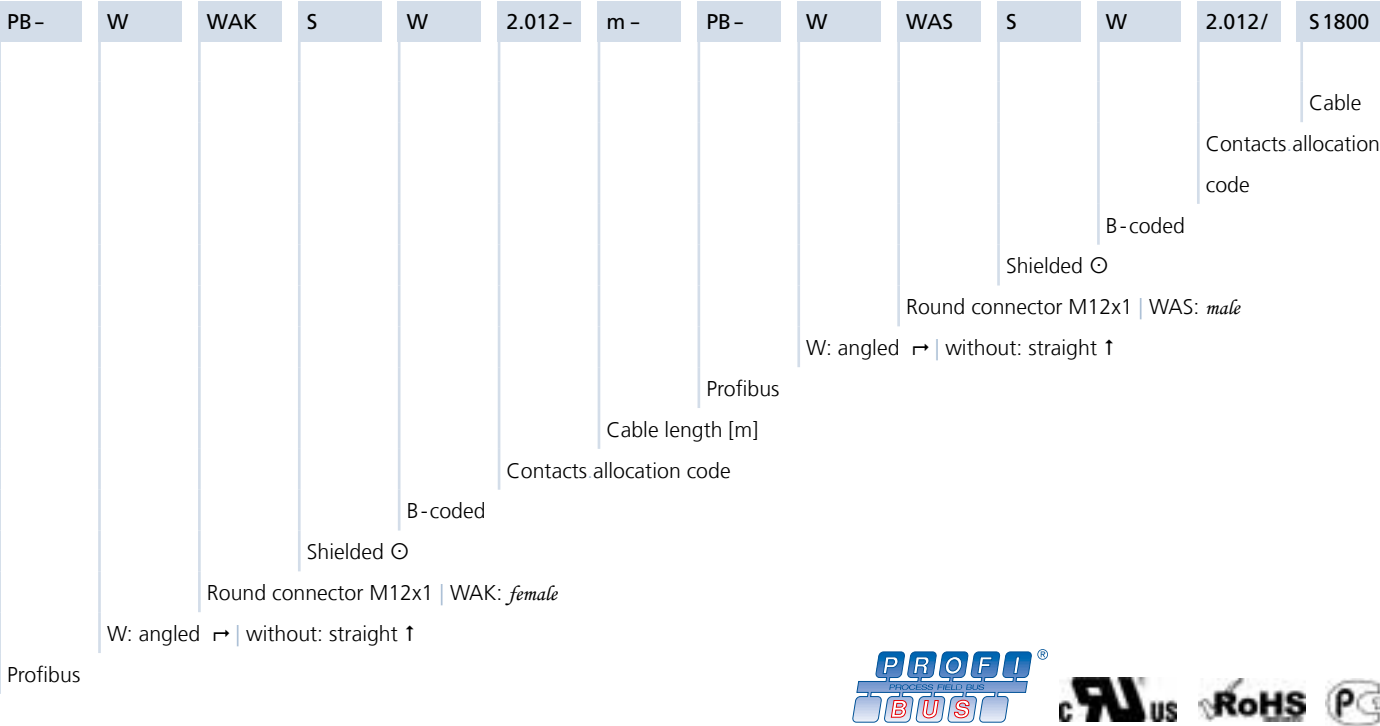
Coding B

5 poles | *female*

5 poles | male



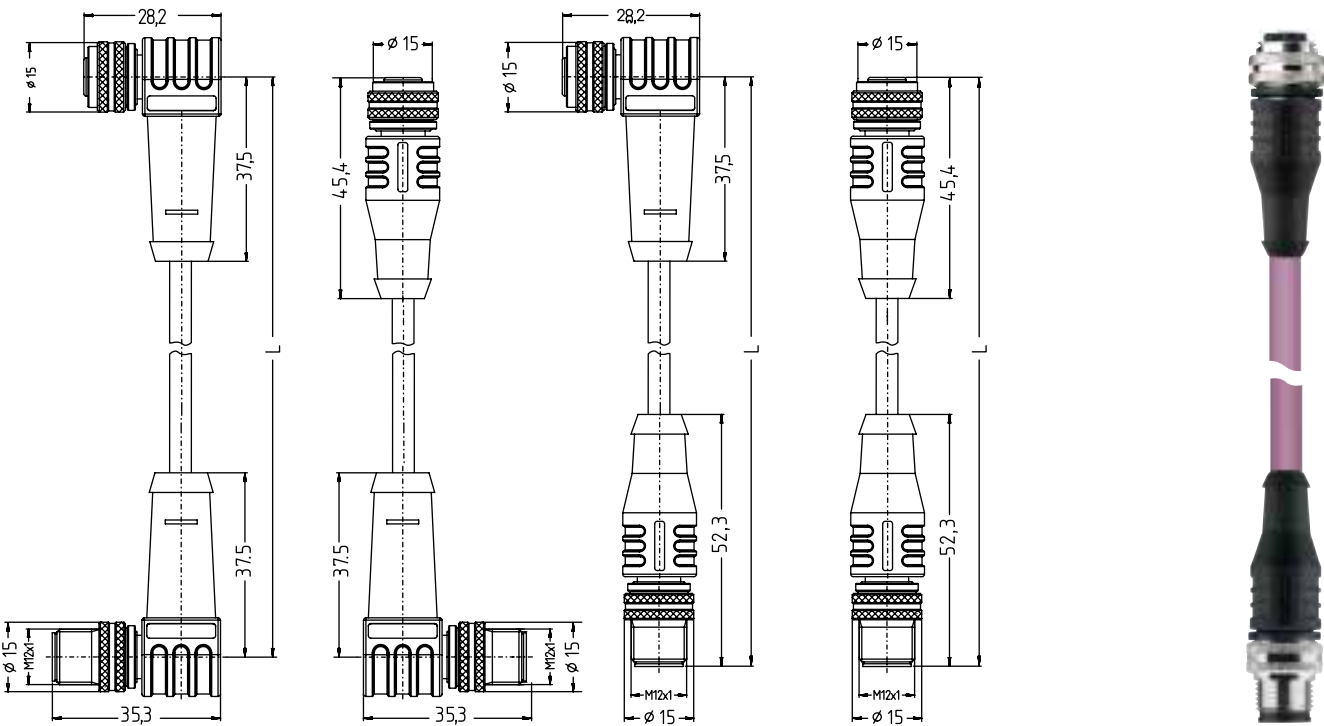
1n.c. | 2GN | 3n.c. | 4RD | 5n.c.



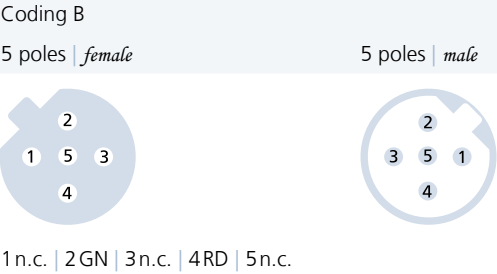
Product line	Version	Cable-quality	Type-designation	Cable length m		
				1m	2m	5m
PB_M12x1 ○	<i>f</i> ↑ __ <i>m</i> ↑	PUR S2800 [®]	PB-WAKSW2.012-m-PB-WASSW2.012/S1800	8045613	8043867	8043879
	<i>f</i> ↗ __ <i>m</i> ↑	PUR S1800 [®]	PB-WWAKSW2.012-m-PB-WASSW2.012/S1800	8046479	8043881	8043882
	<i>f</i> ↑ __ <i>m</i> ↗	PUR S1800 [®]	PB-WAKSW2.012-m-PB-WWASSW2.012/S1800	8051935	8043884	8043885
	<i>f</i> ↗ __ <i>m</i> ↗	PUR S1800 [®]	PB-WWAKSW2.012-m-PB-WWASSW2.012/S1800	8051936	8043887	8043888
Other cable lengths are available upon request.						

Cable quality PUR | S1800[®]

Flexible PVC- silicon- and halogen-free bus cable with PUR outer jacket and wire insulation of Polyethylene. Shielded cable meets the transmission values for RSA485 (cable type A) of the Profibus organization and is especially suitable for the high requirements of industrial machinery- and plant construction. Temperature range -25°C...+80°C. Drag-chain application with a bending radius of min.10xD as well as a travel speed of 200m/min related to a maximum acceleration of 5m/s² is possible. The cable is oil resistant and flame retardant according to DINEN60332-2-2 as well as chemicals-, hydrolysis-, and microbes resistant. UL and CSA approved.



Profibus _ M12x1 junction cable		
Technical data	Poles	Value
Rated voltage [Umax]	5	60V
Current load [Imax]	5	4A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles



PB-

W

FK

F

S

D

W

5-

0,5/

16/

S3525

Height-tolerance-balance Δh for different wall thicknesses

Screw in thread 16: M16x1,5 | 12: M12x1

0,5: wire-length [m] | P: print-contact

Contacts allocation code

B-Coding

Adjustable $\odot$

Shielded $\odot$

Threaded front

Flange M12x1 | FK: *female*
FS: *male*

W: angled $\rightarrow$ | without: straight $\uparrow$

PROFI[®]

not for $\rightarrow$

RoHS

PC

Profibus M12x1 flanges	Connection	Version	Type-designation	Order-No.
Front-wall mounting (optional threaded rear)	Wire	$f \mid \uparrow$	Fig. 8 PB-FKW2.012-0,5/16	8043506
		$f \mid \uparrow \mid \odot$	Fig. 7 PB-FKDW2.012-0,5/16	8043507
		$m \mid \uparrow$	Fig. 6 PB-FSW2.012-0,5/16	8043503
		$m \mid \uparrow \mid \odot$	Fig. 5 PB-FSDW2.012-0,5/16	8043504
Back-wall mounting (threaded front)	Wire	$f \mid \uparrow \mid \odot$	Fig. 4 PB-FKFDW2.012-0,5/16	8043508
		$m \mid \uparrow \mid \odot$	Fig. 3 PB-FSFDW2.012-0,5/16	8043505
	Print-contact	$m \mid \rightarrow \mid \odot$	Fig. 2 PB-WFSFSW5-P/12	8045658
		$f \mid \rightarrow \mid \odot \mid \Delta h < 2.5\text{mm}$	Fig. 1 PB-WFKFSW5-P/12/S3525	8050279
		$f \mid \rightarrow \mid \odot \mid \Delta h < 4.0\text{mm}$	Fig. 1 PB-WFKFSW5-P/12/S3540	8050280
		$f \mid \rightarrow \mid \odot \mid \Delta h < 5.0\text{mm}$	Fig. 1 PB-WFKFSW5-P/12/S3550	8050281

Other wire-lengths are available upon request.



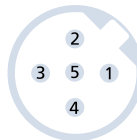
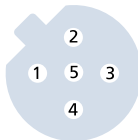
Fig. 1
Dimensional drawings see page 96/97

Profibus _ M12x1 Flanges		
Technical data	Poles	Value
Rated voltage [Umax]	5	60V
Current load [Imax]	5	4A
Insulation resistance		$\geq 10^8 \Omega$
Standards		IEC 61076-2-101
Materials	Flange housing	CuZn, nickel-plated
	Contact carrier	TPU, VT
	Contacts	CuZn, gold-plated
	Sealing (<i>female</i>)	FPM/FKM
	Sealing (screw in thread)	NBR
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

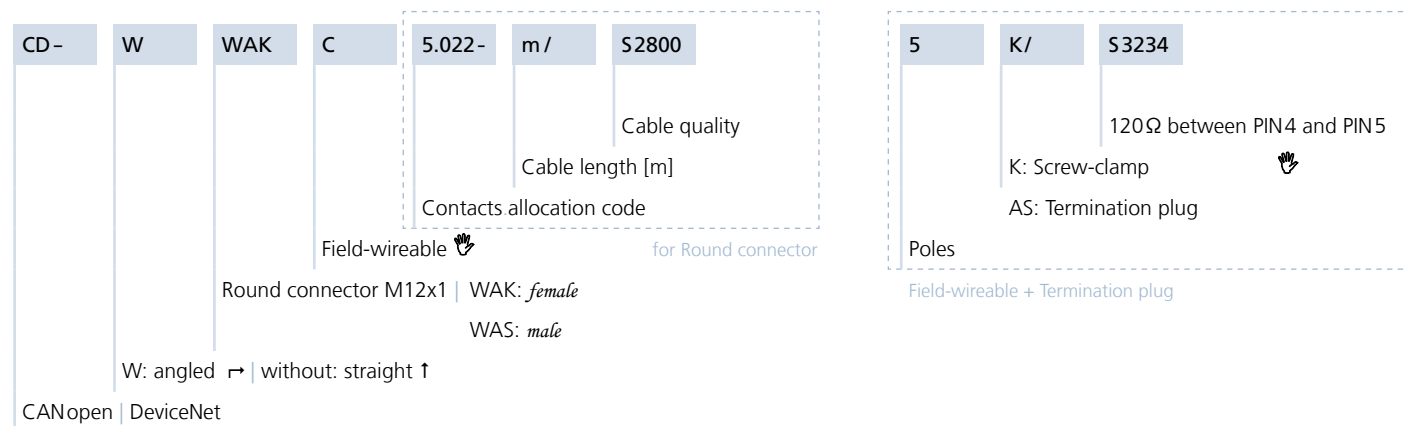
Coding B

5 poles | *female*

5 poles | *male*



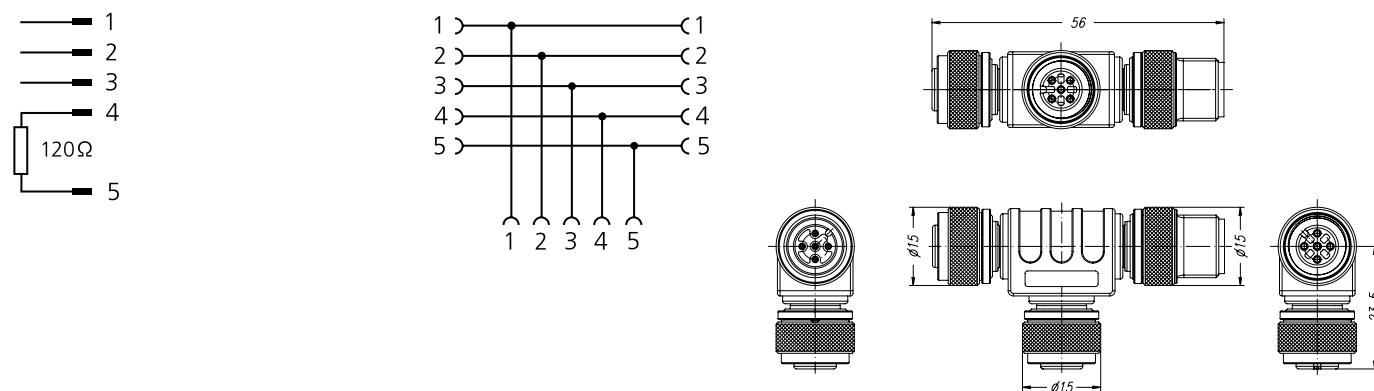
1 n.c. | 2 GN | 3 n.c. | 4 RD | 5 n.c.



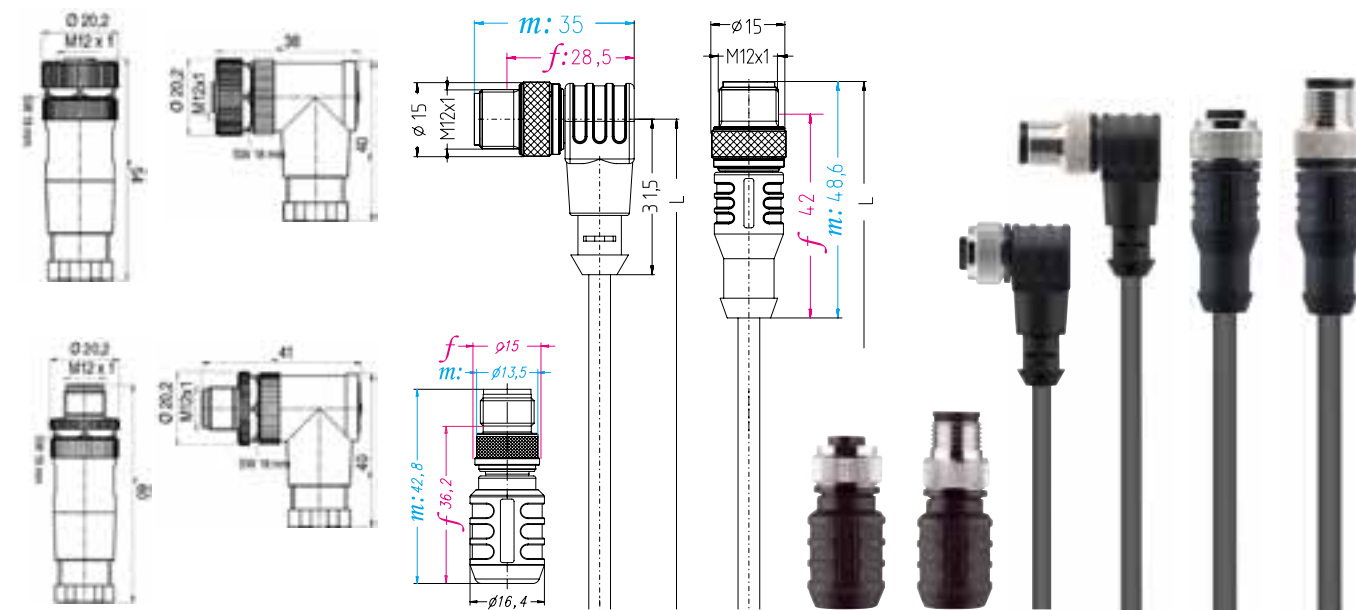
Product line	Version	Cable-quality	Type-designation		Cable length m		
					2m	5m	10m
CD_M12x1	$f \mid \uparrow$	PUR S2800 [®]	CD-WAK5.022-m/S2800		8047517	8047518	8047519
	$f \mid \rightarrow$	PUR S2800 [®]	CD-WWAK5.022-m/S2800		8047520	8047521	8047522
	$m \mid \uparrow$	PUR S2800 [®]	CD-WAS5.022-m/S2800		8047523	8047524	8047525
	$m \mid \rightarrow$	PUR S2800 [®]	CD-WWAS5.022-m/S2800		8047526	8047527	8047528
	$f \mid \uparrow \mid \text{Hand icon}$		WAKC5K	8004815			
	$f \mid \rightarrow \mid \text{Hand icon}$		WWAKC5K	8004809			
	$m \mid \uparrow \mid \text{Hand icon}$		WASC5K	8004805			
	$m \mid \rightarrow \mid \text{Hand icon}$		WWASC5K	8004807			
	Termination plug $f \mid \uparrow$		CD-WAK2.010-AK/S3234	8047942			
	Termination plug $m \mid \uparrow$		CD-WAS2.010-AS/S3234	8047943			
	T-junction f_f_m		FKM5-FKM5-FSM5/S222	8035172			
	100m buscable	PUR S2800 [®]		8047939			

Other cable lengths are available upon request.

Wiring	Dimensional drawing
Termination plug S3234	T-junction

Cable quality PUR | S2800 [®] _{UL}

Flexible PVC-, silicon-, and halogen-free bus cable with PUR outer jacket and a wire insulation of polyethylene. Developed for CANopen- and DeviceNet-systems with excellent EMV features. Temperature range -50°C...+80°C in fixed condition and -25°C...+80°C in moving condition. Drag-chain application with a bending radius of min.10xD is possible and guarantees >1 million cycles. Very good chemicals- and oil-resistance.



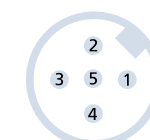
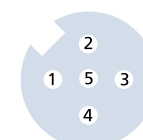
CANopen | DeviceNet_M12x1

Technical data	Round connector		Field-wireable 	
	Poles	Value	Poles	Value
Rated voltage [U _{max}]	4+GND	60V	4+GND	125V
Current load [I _{max}]	4+GND	4A	4+GND	4A
Insulation resistance		≥10 ⁸ Ω		≥10 ⁸ Ω
Standards		IEC 61076-2-101		IEC 61076-2-101
Materials	Grip	TPU, BK	Grip	PA, BK
	Contact carrier	TPU, BK	Contact carrier	PA, BK
	Sealing <i>(female)</i>	FPM/FKM	Contacts	CuZn, CuSnZn
	Contacts	CuZn, gold-plated		
	Locking mechanism	CuZn, nickel-plated		
Ambient temperature		-30°C...+90°C		-25°C...+85°C
Degree of pollution		3		3
Protection class (in threaded condition)		IP67, IP69K		IP67
Mechanical life cycle		>100 mating cycles		>100 mating cycles
Core cross-section/Clamping ability				0.75 mm² AWG18
External diameter of the cable				Ø 4...6 mm
Connection			Screw-clamp	

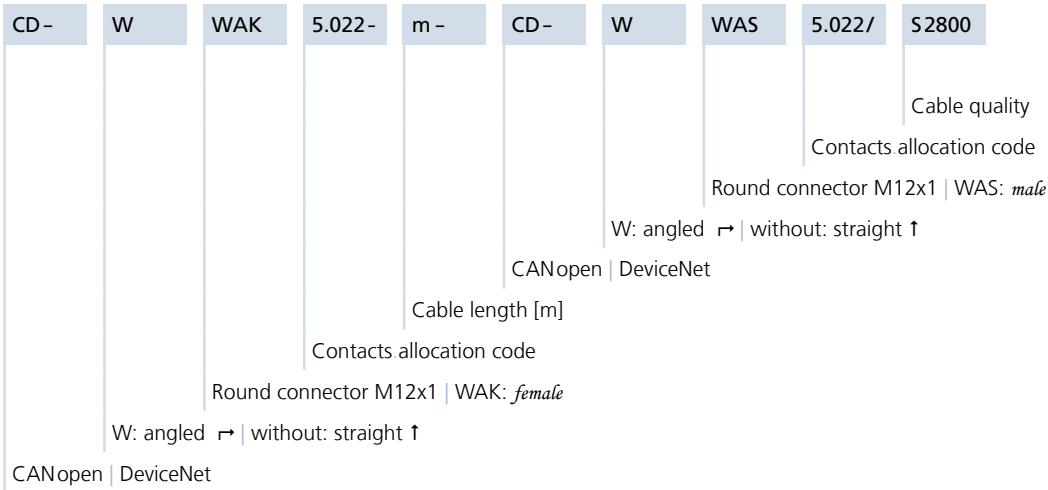
Coding A

4+GND | female

4+GND | male



1 (GND) | 2RD (+) | 3BK (-) | 4WH (CAN_H) | 5BU (CAN_L)

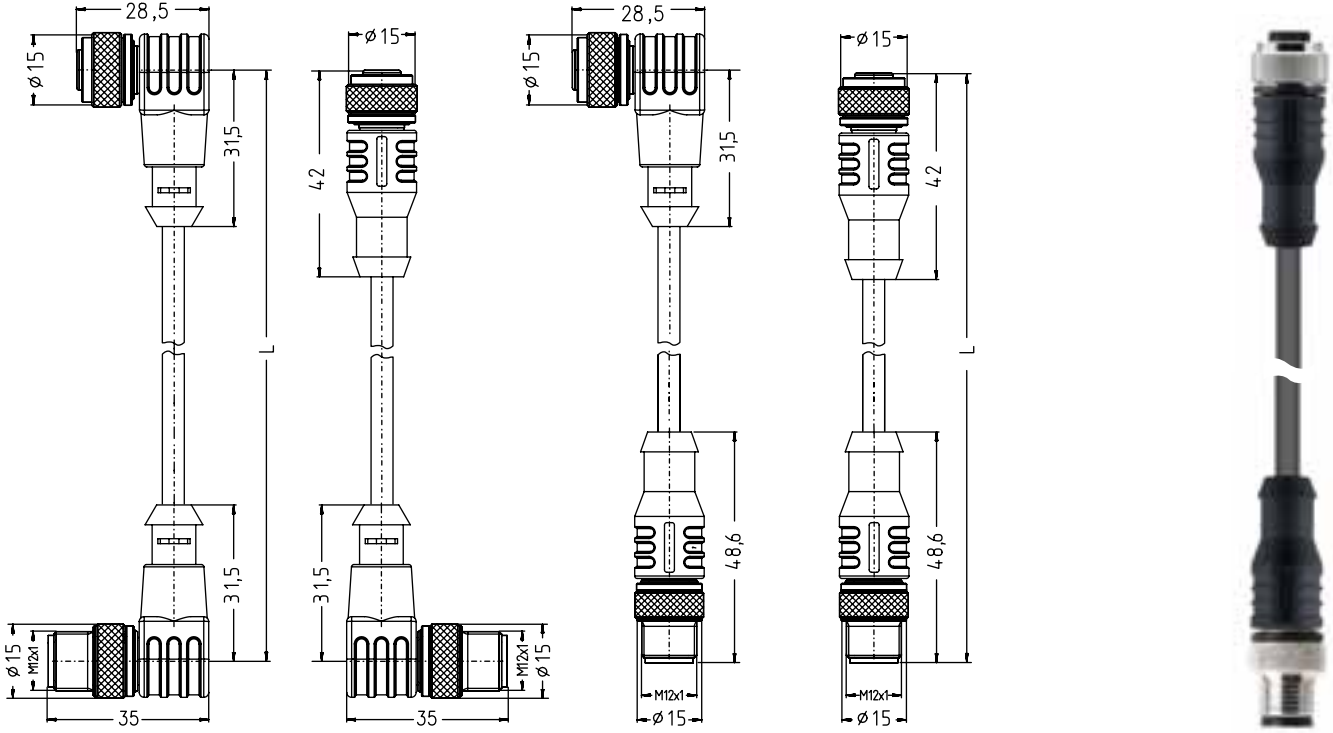


Product line	Version	Cable-quality	Type-designation	1m	Cable length m	
					2m	5m
CD_M12x1	<i>f</i> ↑ __ <i>m</i> ↑	PUR S2800 [®]	CD-WAK5.022-m-CD-WAS5.022/S2800	8047491	8047492	8047494
	<i>f</i> ↗ __ <i>m</i> ↑		CD-WWAK5.022-m-CD-WAS5.022/S2800	8051937	8047529	8047530
	<i>f</i> ↑ __ <i>m</i> ↗		CD-WAK5.022-m-CD-WWAS5.022/S2800	8051938	8047532	8047533
	<i>f</i> ↗ __ <i>m</i> ↗		CD-WWAK5.022-m-CD-WWAS5.022/S2800	8051939	8047535	8047536

Other cable lengths are available upon request.

Cable quality PUR | S2800[®]

Flexible PVC-, silicon-, and halogen-free bus cable with PUR outer jacket and a wire insulation of polyethylene. Developed for CANopen- and DeviceNet-systems with excellent EMV features. Temperature range -50°C...+80°C in fixed condition and -25°C...+80°C in moving condition. Drag-chain application with a bending radius of min.10xD is possible and guarantees >1 million cycles. Very good chemicals- and oil-resistance.



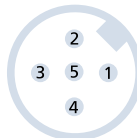
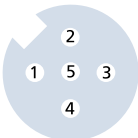
CANopen | DeviceNet _ M12x1 junction cable

Technical data		Poles	Value
Rated voltage [Umax]		4+GND	60V
Current load [Imax]		4+GND	4A
Insulation resistance			≥10 ⁸ Ω
Standards			IEC 61076-2-101
Materials	Grip		TPU, BK
	Contact carrier		TPU, BK
	Sealing (<i>female</i>)		FPM/FKM
	Contacts		CuZn, gold-plated
	Locking mechanism		CuZn, nickel-plated
Ambient temperature			-30°C...+90°C
Degree of pollution			3
Protection class (in threaded condition)			IP 67, IP69K
Mechanical life cycle			>100 mating cycles

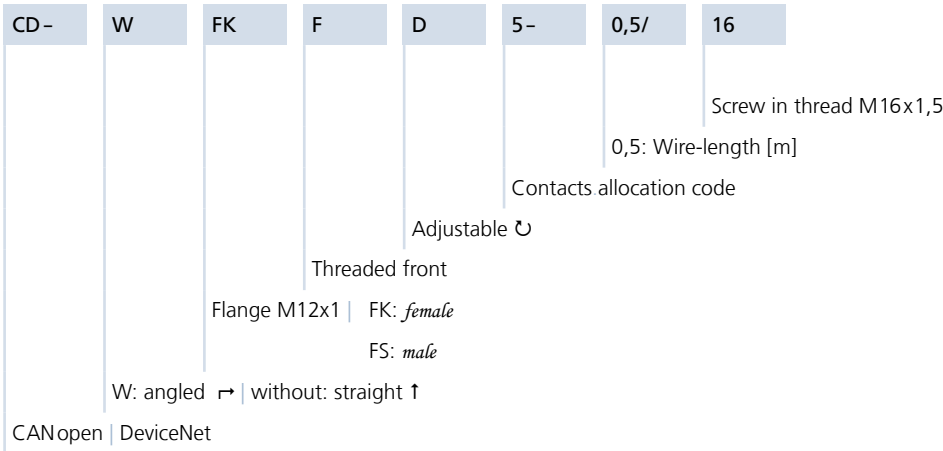
Coding A

4+GND | *female*

4+GND | *male*



1 (GND) | 2RD (+) | 3BK (-) | 4WH (CAN_H) | 5BU (CAN_L)



CANopen DeviceNet M12x1-Flanges	Connection	Version		Type-designation	Order-No.
Front-wall mounting (optional threaded rear)	Litze	<i>f</i> ↑	Fig. 4	CD-FK5.022-0,5/16	8047958
		<i>m</i> ↑	Fig. 3	CD-FS5.022-0,5/16	8047960
Back-wall mounting (threaded front)	Litze	<i>f</i> ↑ ⤵	Fig. 2	CD-FKFD5.022-0,5/16	8047961
		<i>m</i> ↑ ⤵	Fig. 1	CD-FSFD5.022-0,5/16	8047962

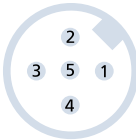
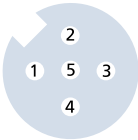
Other wire-lengths are available upon request.



Fig. 1 Fig. 2 Fig. 3 Fig. 4

Dimensional drawings see page 96/97

CANopen DeviceNet _ M12x1 Flanges		
Technical data	Poles	Value
Rated voltage [U _{max}]	5	60V
Current load [I _{max}]	5	4A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Flange housing	CuZn, nickel-plated
	Contact carrier	TPU, BK
	Contacts	CuZn, gold-plated
	Sealing (<i>female</i>)	FPM/FKM
	Sealing (screw in thread)	NBR
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP 67
Mechanical life cycle		>100 mating cycles
Coding A		
4+GND <i>female</i>	4+GND <i>male</i>	



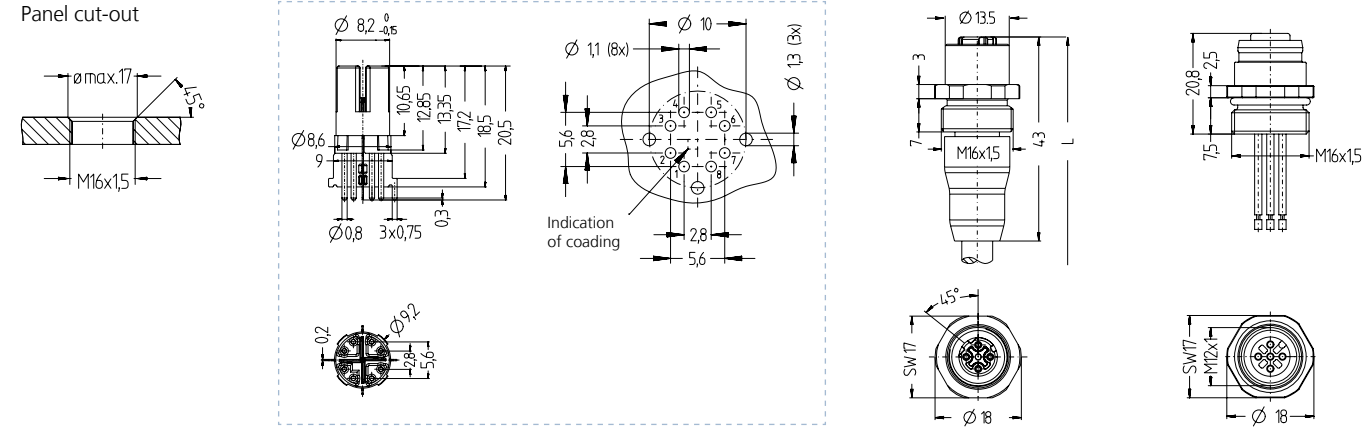
1 (GND) | 2RD (+) | 3BK (-) | 4WH (CAN_H) | 5BU (CAN_L)

Front-wall mounting (optional threaded rear) Spare nuts are not included | see accessories on page 174

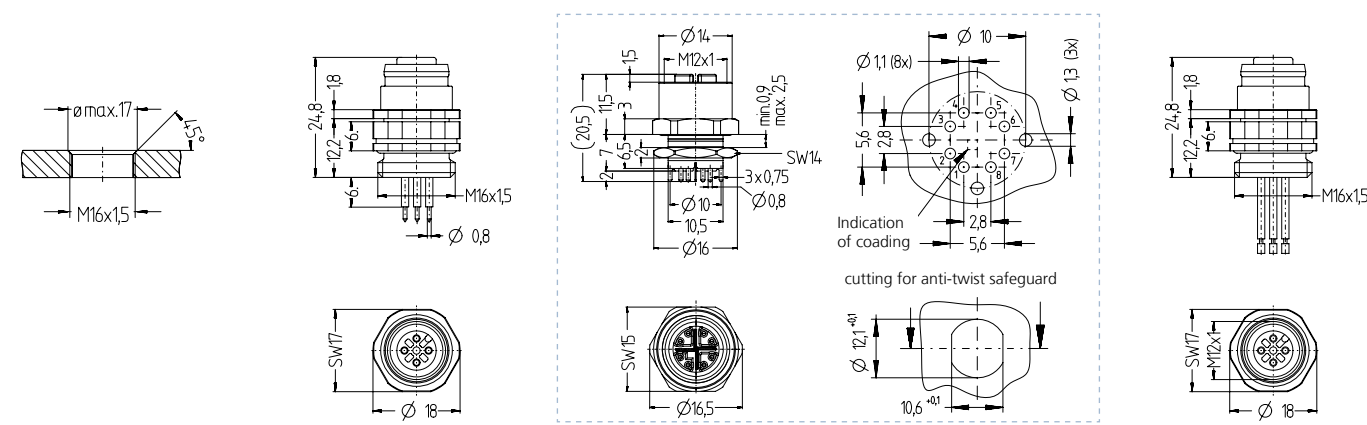
Print-contact

Wire-contact

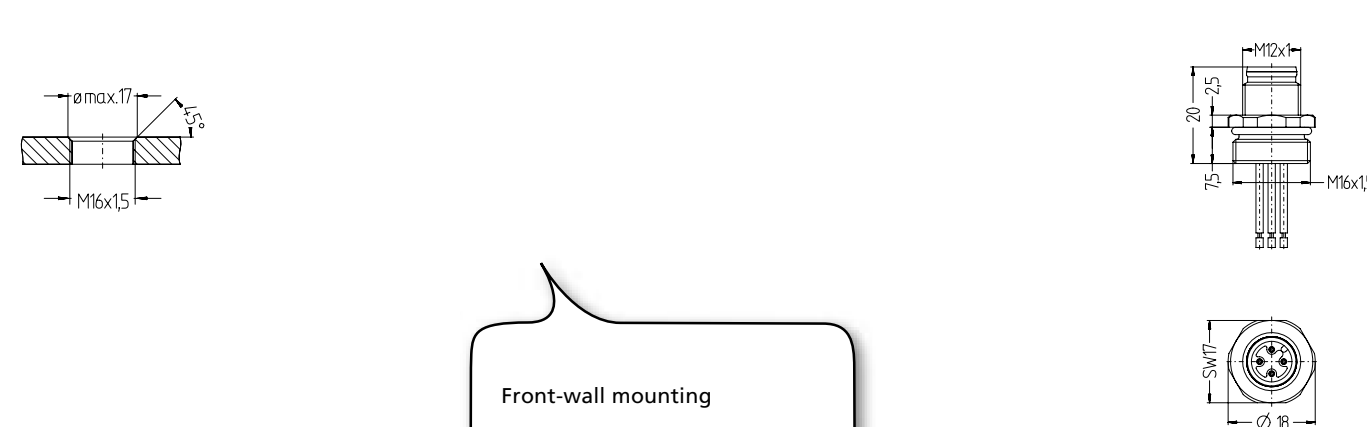
f | ↑ | CuZn IE-EKSX8P IE-FKS_0,5/16 O (IE/PB/CD)-FK_-0,5/16



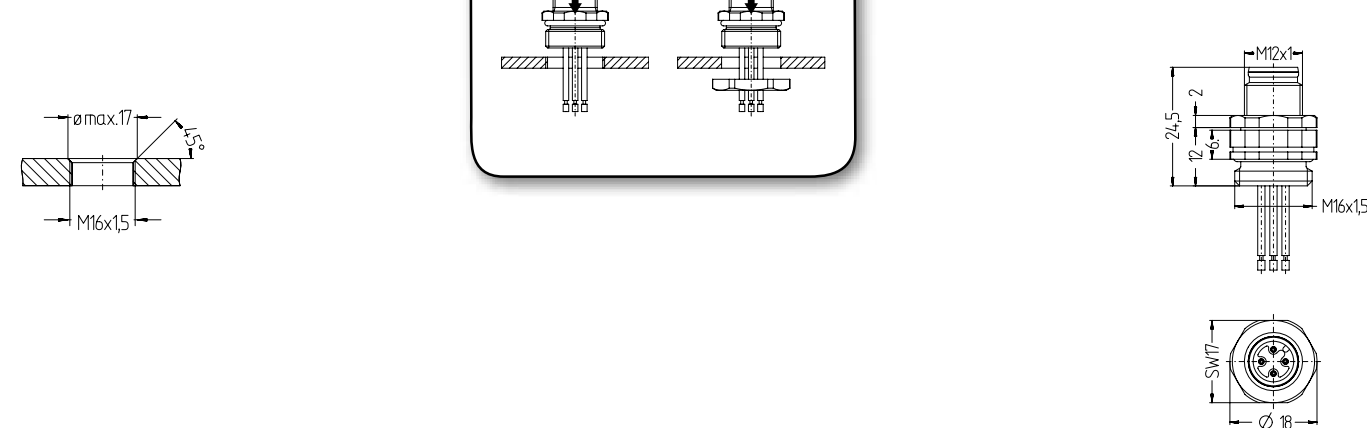
f | ↑ | CuZn | U IE-FKD_-P/16 IE-FKD(H)SX8-P/12 (IE/PB)-FKD_-0,5/16



m | ↑ | CuZn (PB/CD)-FS_-0,5/16



m | ↑ | CuZn | U PB-FSD_-0,5/16



For pinning see corresponding article.

Back-wall mounting (threaded front)

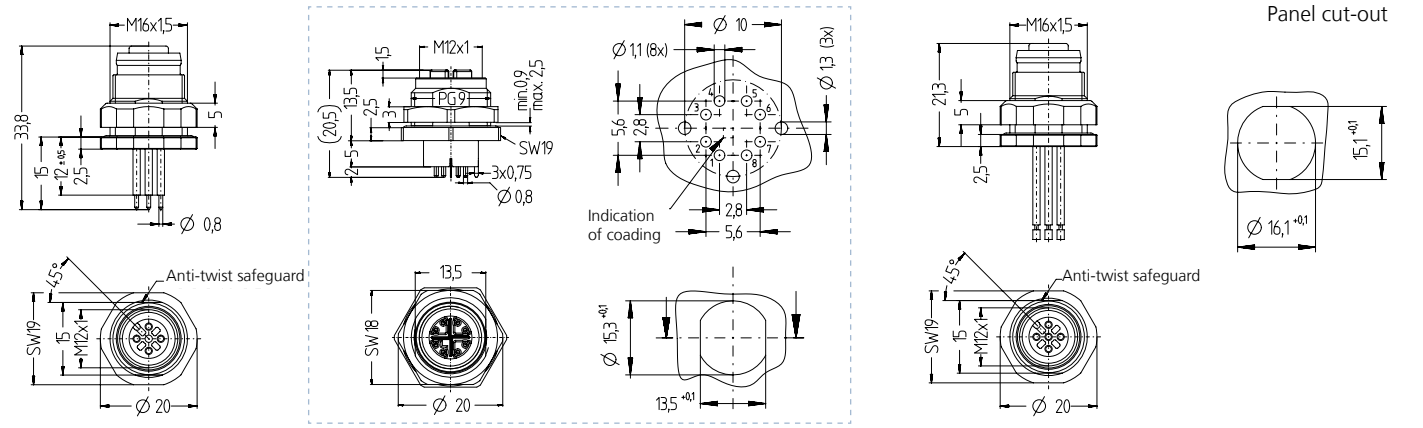
Wire-contact

f | ↑ | CuZn

Print-contact

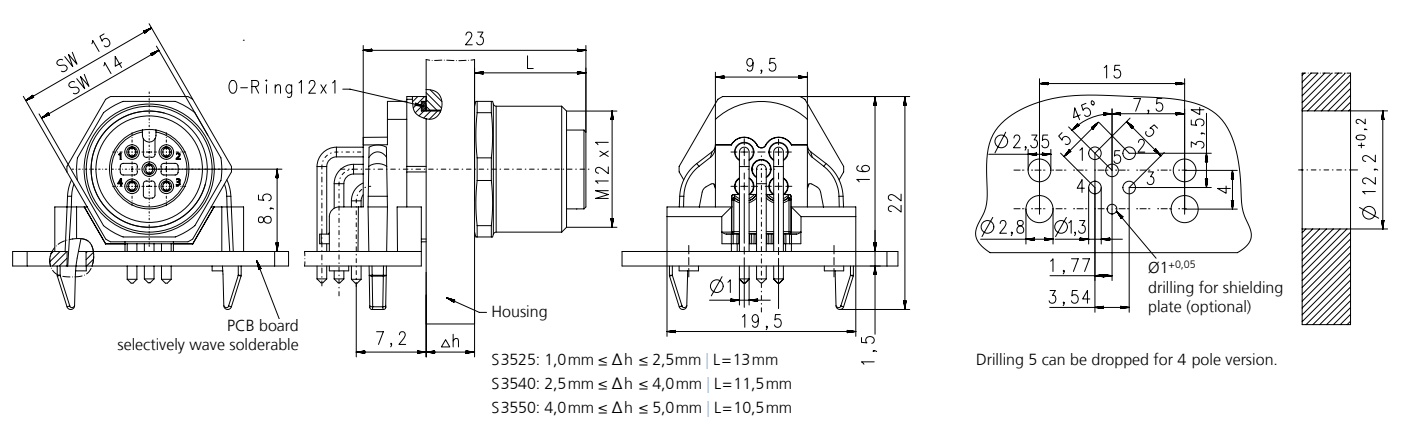
IE-FKFD-P IE-FKFD(H)SX8-P

CD-FKFD_-0,5/16

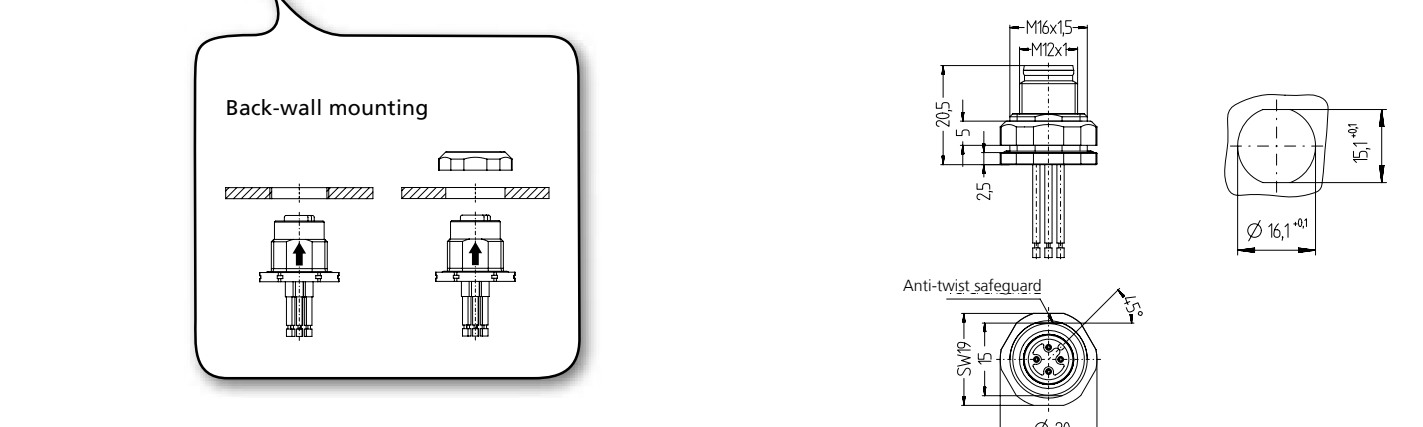


(IE/PB)-WFKF_-P/12/S... | see Δh

f | ↑ | CuZn | Δh

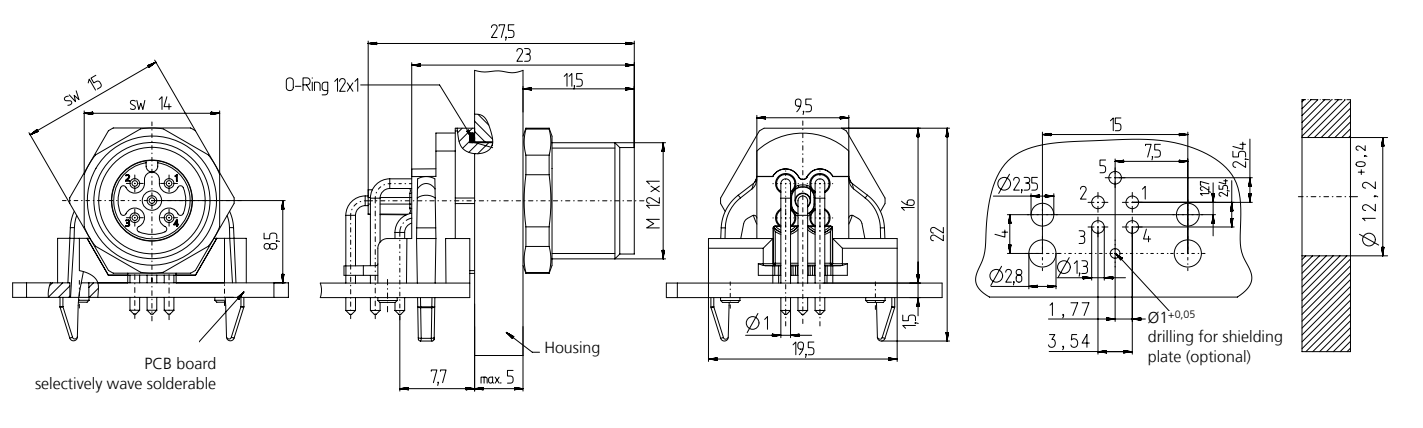


(PB/CD)-FSFD_-0,5/16 m | ↑ | CuZn (V4A)



PB-WFSF_-P/12

m | ↑ | CuZn



AL -

S

W

KP

3 -

m /

S370

Cable quality

Cable length [m]

Poles

Round connector M8x1 | KP: *female*

W: angled ↗ | without: straight ↑

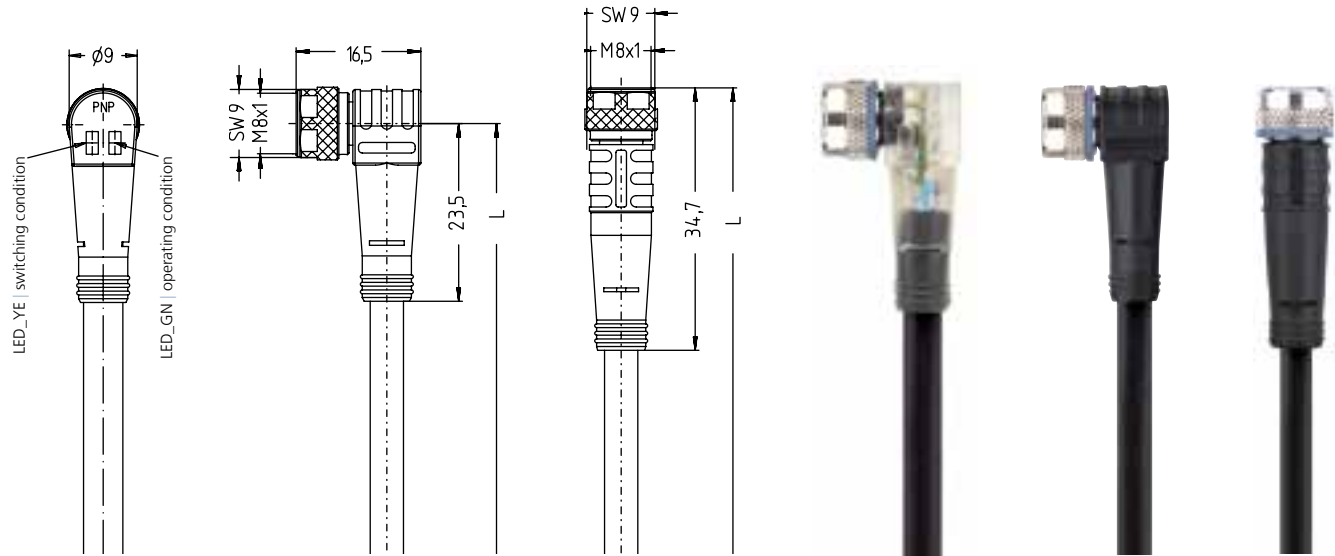
Screwable M8x1

Automation Line



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M8x1	f ↑	PUR S370 [®]	3	AL-SKP3-m/S370	8043748	8043749	8043750
			4	AL-SKP4-m/S370	8043760	8043761	8043762
			5	AL-SKP4.5-m/S370	8051859	8051858	8051860
		PVC P00	3	AL-SKP3-m/P00	8048639	8048640	8048641
			4	AL-SKP4-m/P00	8048645	8048646	8048647
			5	AL-SKP4.5-m/P00	8047045	8051850	8051851
	f ↗	PVC P01 [®]	3	AL-SKP3-m/P01	8051226	8051227	8051228
			4	AL-SKP4-m/P01	8051238	8051239	8051240
			5	AL-SKP4.5-m/P01	8051238	8051239	8051240
		PUR S370 [®]	3	AL-SWKP3-m/S370	8043751	8043752	8043753
			4	AL-SWKP4-m/S370	8043763	8043764	8043765
			5	AL-SWKP4.5-m/S370	8051861	8051862	8051863
	f ↗ LED2	PVC P00	3	AL-SWKP3-m/P00	8048642	8048643	8048644
			4	AL-SWKP4-m/P00	8048648	8048649	8048650
			5	AL-SWKP4.5-m/P00	8047049	8051852	8051853
		PVC P01 [®]	3	AL-SWKP3-m/P01	8051229	8051230	8051231
			4	AL-SWKP4-m/P01	8051241	8051242	8051243
			5	AL-SWKP4.5-m/P01	8051241	8051242	8051243
	f ↗ LED2	PUR S370 [®]	3	AL-SWKP3P2-m/S370	8045344	8045419	8045420
			4	AL-SWKP4P2-m/S370	8045345	8045421	8045422
		PVC P00	3	AL-SWKP3P2-m/P00	8051113	8051114	8051115
			4	AL-SWKP4P2-m/P00	8051116	8051117	8051118
		PVC P01 [®]	3	AL-SWKP3P2-m/P01	8051322	8051323	8051324
			4	AL-SWKP4P2-m/P01	8051325	8051326	8051327

Other versions and cable-lengths are available upon request.



Automation Line® M8x1 female + female LED

Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
	LED-version	10...24V _{DC}
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK LED: TPU, transparent
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Pinning | female

3 poles

4 poles

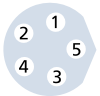
5 poles



1BN | 3BU | 4BK



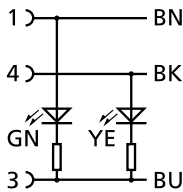
1BN | 2WH
3BU | 4BK



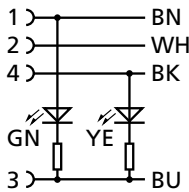
1BN | 2WH
3BU | 4BK | 5GY

LED-versions

3P2



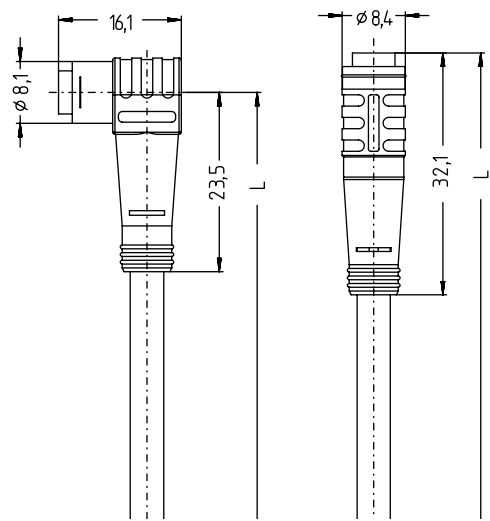
4P2



AL –	W	KP	3 –	m /	S370
					Cable quality
					Cable length [m]
					Poles
					Round connector Ø8mm snap KP: <i>female</i>
					W: angled ↗ without: straight ↑
					Automation Line

Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_Ø8snap	f ↑	PUR S370 [®]	3	AL-KP3-m/S370	8051894	8044517	8051895
			4	AL-KP4-m/S370	8043940	8045033	8052669
			5	AL-KP4.5-m/S370	8050016	8050017	8050018
		PVC P00	3	AL-KP3-m/P00	8052490	8052491	8052492
			4	AL-KP4-m/P00	8052690	8052691	8052692
			5	AL-KP4.5-m/P00	8043847	8050005	8050006
	f ↗	PVC P01 [®]	3	AL-KP3-m/P01	8052493	8052494	8052495
			4	AL-KP4-m/P01	8052717	8052718	8052719
			3	AL-WKP3-m/S370	8052670	8044518	8052671
		PUR S370 [®]	4	AL-WKP4-m/S370	8052672	8045620	8052673
			5	AL-WKP4.5-m/S370	8050022	8050023	8050024
			3	AL-WKP3-m/P00	8052693	8052694	8052695
		PVC P00	4	AL-WKP4-m/P00	8052696	8052697	8052698
			5	AL-WKP4.5-m/P00	8049767	8050007	8050008
		PVC P01 [®]	3	AL-WKP3-m/P01	8052724	8052725	8052726
			4	AL-WKP4-m/P01	8052720	8052721	8052722

Other versions and cable-lengths are available upon request.



Automation Line® Ø8mm snap *female*

Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP 67
Mechanical life cycle		>100 mating cycles

Pinning <i>female</i>		
3 poles	4 poles	5 poles



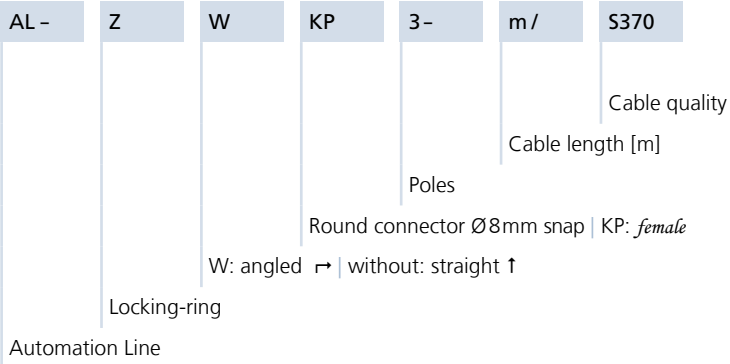
1BN | 3BU | 4BK



1BN | 2WH
3BU | 4BK

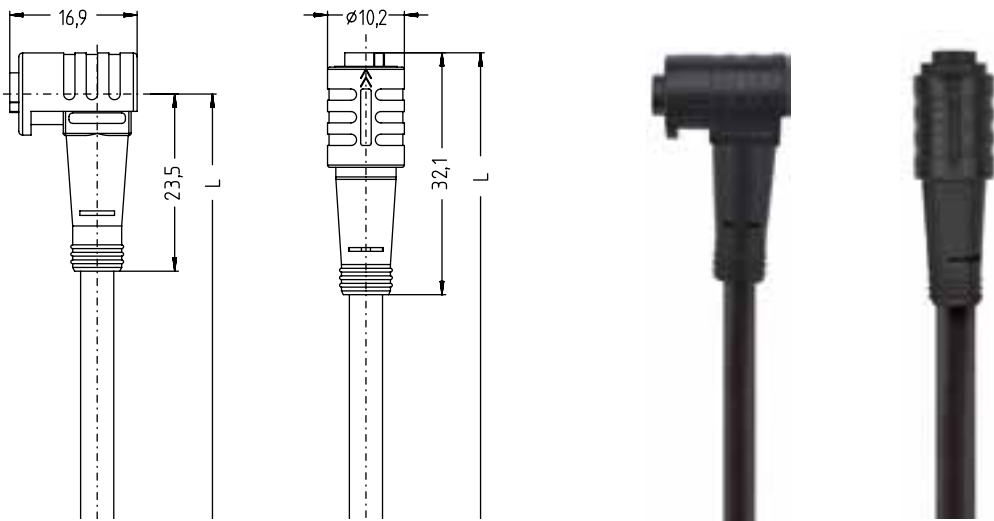


1BN | 2WH
3BU | 4BK | 5GY



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_Ø8snap	ƒ ↑ Locking-ring	PUR S370 ®	3	AL-ZKP3-m/S370	8052680	8052681	8052682
			4	AL-ZKP4-m/S370	8046076	8051911	8051912
			5	AL-ZKP4.5-m/S370	8050025	8050026	8050027
		PVC P00	3	AL-ZKP3-m/P00	8052705	8052706	8052707
			4	AL-ZKP4-m/P00	8052708	8052709	8052710
			5	AL-ZKP4.5-m/P00	8049768	8050009	8050010
	ƒ ↗ Locking-ring	PVC P01 ®	3	AL-ZKP3-m/P01	8052733	8052734	8052735
			4	AL-ZKP4-m/P01	8052736	8052737	8052738
			5	AL-ZWKP4.5-m/S370	8050028	8050029	8050030
		PVC P00	3	AL-ZWKP3-m/P00	8052711	8052712	8052713
			4	AL-ZWKP4-m/P00	8052714	8052715	8052716
			5	AL-ZWKP4.5-m/P00	8049769	8050011	8050012
		PVC P01 ®	3	AL-ZWKP3-m/P01	8052739	8052740	8052741
			4	AL-ZWKP4-m/P01	8052742	8052743	8052744

Other versions and cable-lengths are available upon request.



Automation Line® Ø8mm snap with locking-ring <i>female</i>		
Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	POM
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

Pinning | *female*

3 poles

4 poles

5 poles



1BN | 3BU | 4BK



1BN | 2WH
3BU | 4BK



1BN | 2WH
3BU | 4BK | 5GY

AL –

S

W

SP

3–

m /

S370

Cable quality

Cable length [m]

Poles

Round connector M8x1 | SP: *male*

W: angled ↗ | without: straight ↑

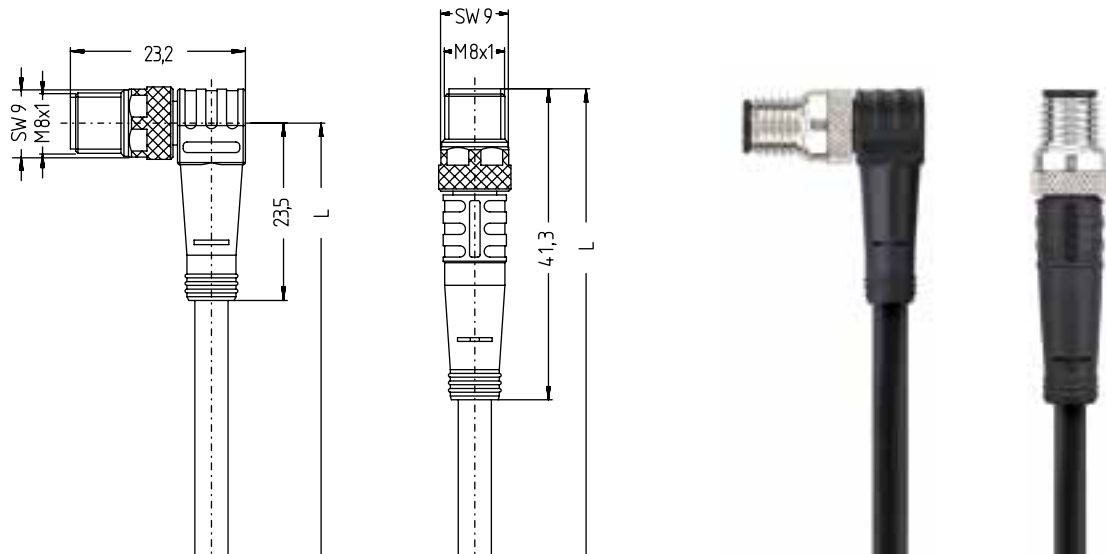
Screwable

Automation Line



Product line	Version	Cable-quality	Poles	Type - designation	Cable length m		
					2m	5m	10m
AL_M8x1	m ↑	PUR S370 [®]	3	AL-SSP3-m/S370	8043754	8043755	8043756
			4	AL-SSP4-m/S370	8043766	8043767	8043768
			5	AL-SSP4.5-m/S370	8050052	8050053	8050054
		PVC P00	3	AL-SSP3-m/P00	8051031	8051032	8051033
			4	AL-SSP4-m/P00	8051037	8051038	8051039
			5	AL-SSP4.5-m/P00	8047066	8050044	8050045
	m ↗	PVC P01 [®]	3	AL-SSP3-m/P01	8051232	8051233	8051234
			4	AL-SSP4-m/P01	8051244	8051245	8051246
			PUR S370 [®]	3	AL-SWSP3-m/S370	8043757	8043758
		4		AL-SWSP4-m/S370	8043769	8043770	8043771
		5		AL-SWSP4.5-m/S370	8050055	8050056	8050057
		PVC P00	3	AL-SWSP3-m/P00	8051034	8051035	8051036
4	AL-SWSP4-m/P00		8051040	8051041	8051042		
5	AL-SWSP4.5-m/P00		8047050	8050046	8050047		
	PVC P01 [®]	3	AL-SWSP3-m/P01	8051235	8051236	8051237	
		4	AL-SWSP4-m/P01	8051247	8051248	8051249	

Other versions and cable-lengths are available upon request.



Automation Line® M8x1 *male*

Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP 67, IP 69K
Mechanical life cycle		>100 mating cycles

Pinning | *male*

3 poles

4 poles

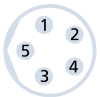
5 poles



1BN | 3BU | 4BK



1BN | 2WH
3BU | 4BK



1BN | 2WH
3BU | 4BK | 5GY

AL –

W

SP

3 –

m /

S370

Cable quality

Cable length [m]

Poles

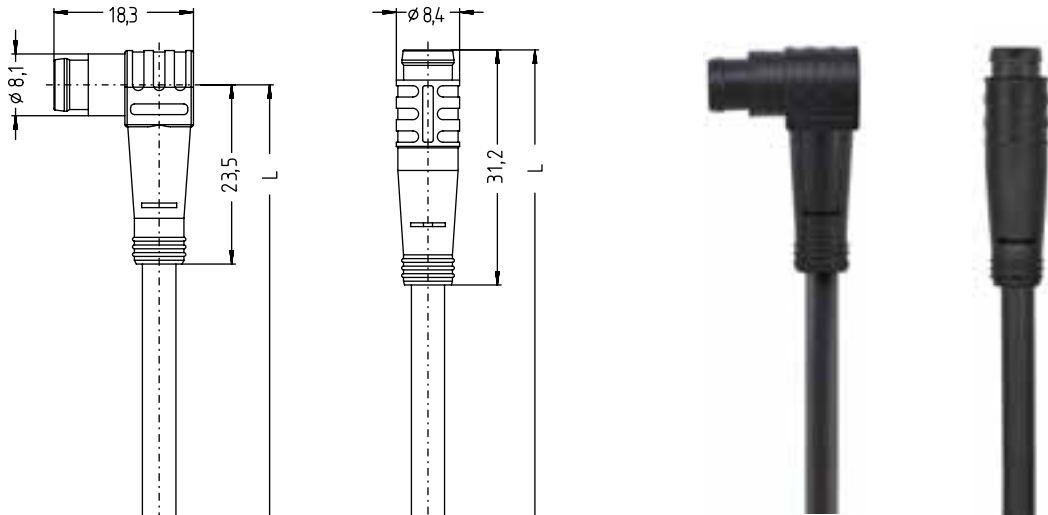
Round connector Ø8mm snap | SP: *male*

W: angled ↗ | without: straight ↑

Automation Line

Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_Ø8snap	<i>m</i> ↑	PUR S370 [®]	3	AL-SP3-m/S370	8051905	8051906	8051907
			4	AL-SP4-m/S370	8052674	8052675	8052676
			5	AL-SP4.5-m/S370	8050013	8050014	8050015
		PVC P00	3	AL-SP3-m/P00	8052496	8052497	8052498
			4	AL-SP4-m/P00	8052699	8052700	8052701
			5	AL-SP4.5-m/P00	8050000	8050001	8050002
	<i>m</i> ↗	PVC P01 [®]	3	AL-SP3-m/P01	8052499	8052500	8052501
			4	AL-SP4-m/P01	8052727	8052728	8052729
			5	AL-SP4.5-m/P01	8050019	8050020	8050021
		PVC P00	3	AL-WSP3-m/P00	8052502	8052503	8052504
			4	AL-WSP4-m/P00	8052702	8052703	8052704
			5	AL-WSP4.5-m/P00	8043900	8050003	8050004
		PVC P01 [®]	3	AL-WSP3-m/P01	8052505	8052506	8052507
			4	AL-WSP4-m/P01	8052730	8052731	8052732

Other versions and cable-lengths are available upon request.



Automation Line® Ø8mm snap *male*

Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Contacts	CuZn, gold-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in plugged condition)		IP67
Mechanical life cycle		>100 mating cycles

Pinning <i>male</i>		
3 poles	4 poles	5 poles



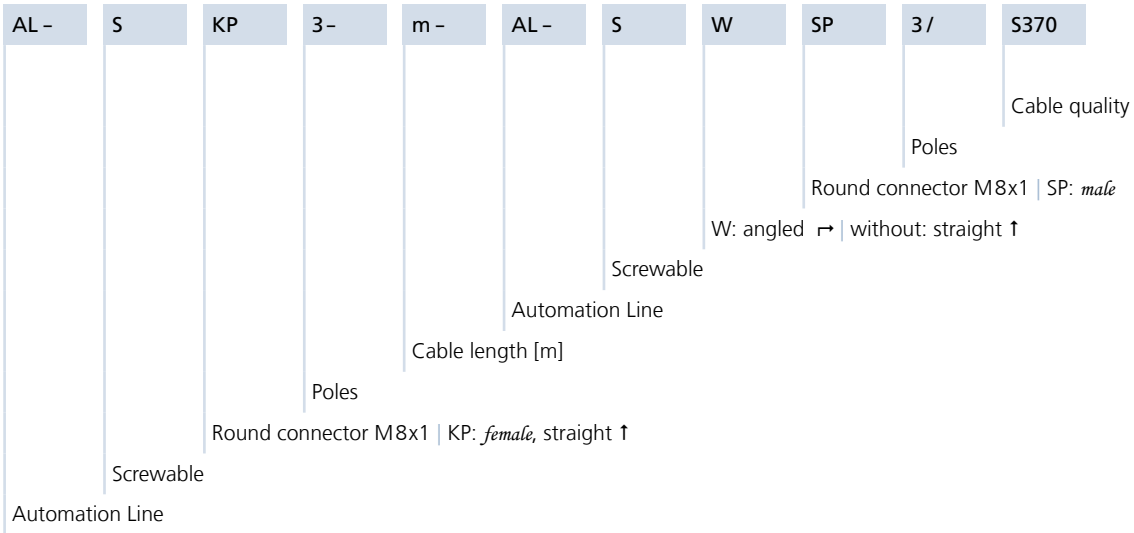
1BN | 3BU | 4BK



1BN | 2WH
3BU | 4BK

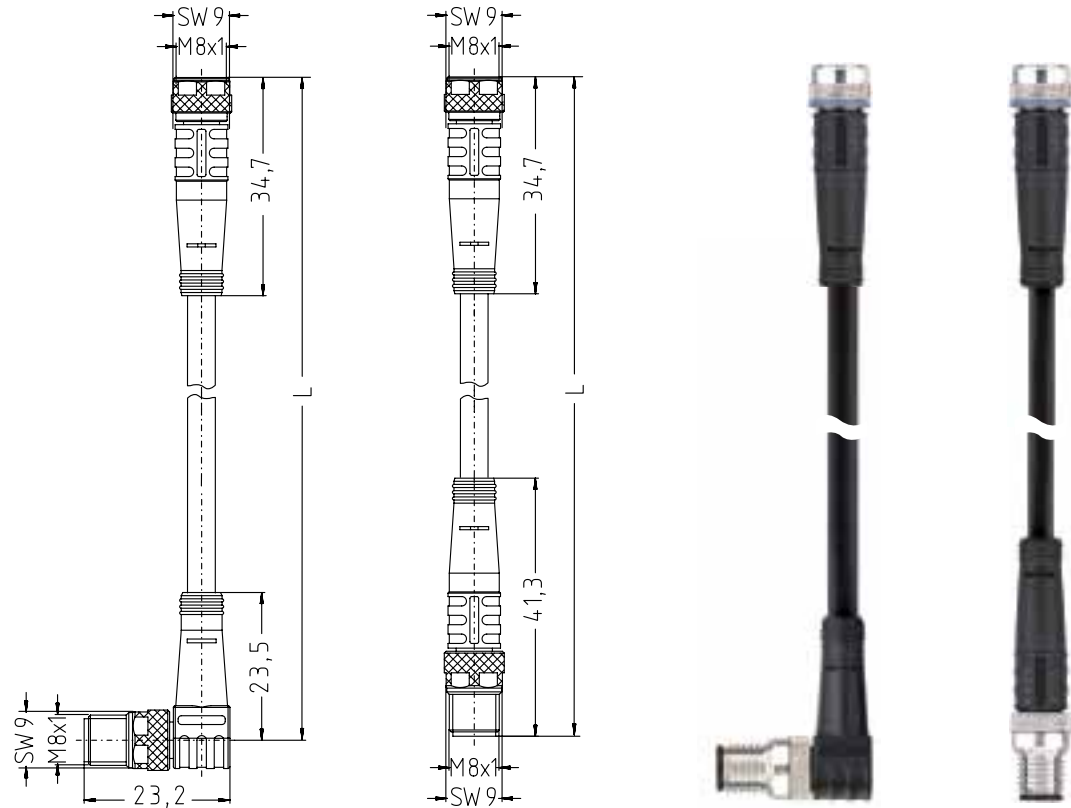


1BN | 2WH | 3BU
4BK | 5GY

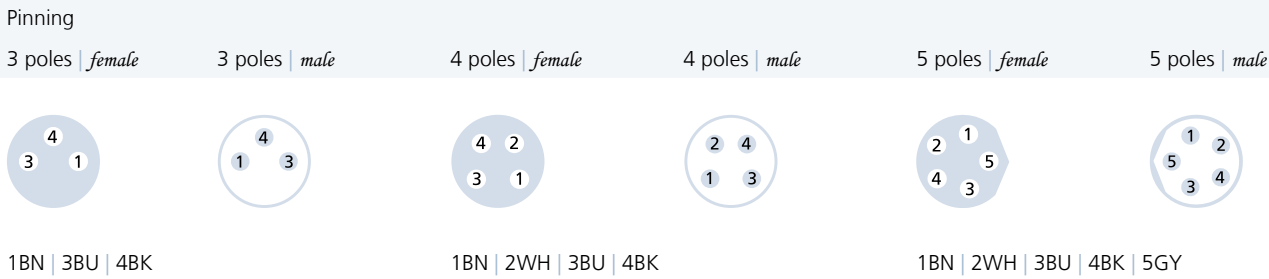


Product line	Version	Cable-quality	Poles	Type-designation	1 m	Cable length m 2 m	5 m
AL_M8x1	$f \mid \uparrow _ m \mid \uparrow$	PUR S370 [®]	3	AL-SKP3-m-AL-SSP3/S370	8044811	8044002	8044003
			4	AL-SKP4-m-AL-SSP4/S370	8045944	8044017	8044018
			5	AL-SKP4.5-m-AL-SSP4.5/S370	8052755	8052756	8052757
		PVC P00	3	AL-SKP3-m-AL-SSP3/P00	8051434	8051435	8051436
			4	AL-SKP4-m-AL-SSP4/P00	8051447	8051448	8051449
			5	AL-SKP4.5-m-AL-SSP4.5/P00	8052860	8042846	8042848
	$f \mid \uparrow _ m \mid \rightarrow$	PVC P01 [®]	3	AL-SKP3-m-AL-SSP3/P01	8051642	8051643	8051644
			4	AL-SKP4-m-AL-SSP4/P01	8051655	8051656	8051657
			5	AL-SKP4.5-m-AL-SSP4.5/P01	8051913	8044011	8044012
		PUR S370 [®]	3	AL-SKP3-m-AL-SWSP3/S370	8051913	8044011	8044012
			4	AL-SKP4-m-AL-SWSP4/S370	8046587	8044023	8044024
			5	AL-SKP4.5-m-AL-SWSP4.5/S370	8052764	8052765	8052766
	PVC P00	PVC P00	3	AL-SKP3-m-AL-SWSP3/P00	8051440	8051441	8051442
			4	AL-SKP4-m-AL-SWSP4/P00	8051453	8051454	8051455
			5	AL-SKP4.5-m-AL-SWSP4.5/P00	8042859	8042860	8042861
	PVC P01 [®]	PVC P01 [®]	3	AL-SKP3-m-AL-SWSP3/P01	8051649	8051650	8051651
			4	AL-SKP4-m-AL-SWSP4/P01	8051661	8051662	8051663
			5	AL-SKP4.5-m-AL-SWSP4.5/P01	8051661	8051662	8051663

Other versions and cable-lengths are available upon request.



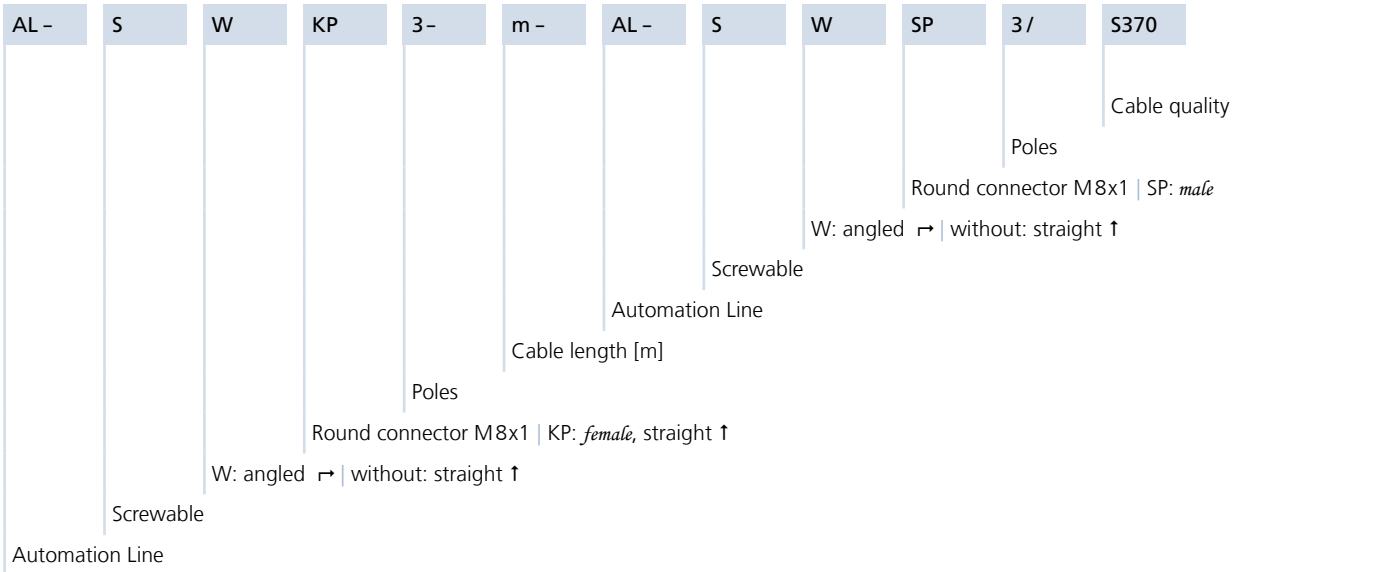
Automation Line® M8x1 junction cable		
Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP 67, IP 69K
Mechanical life cycle		>100 mating cycles



1BN | 3BU | 4BK

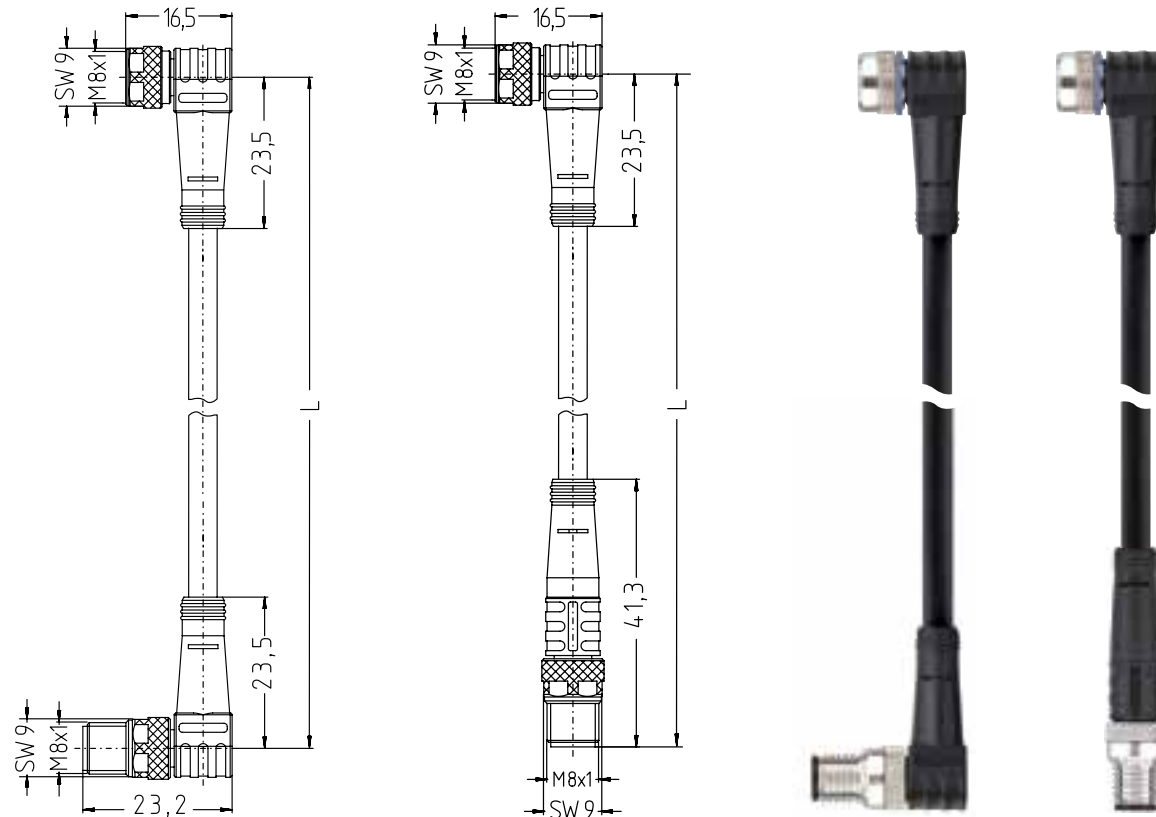
1BN | 2WH | 3BU | 4BK

1BN | 2WH | 3BU | 4BK | 5GY

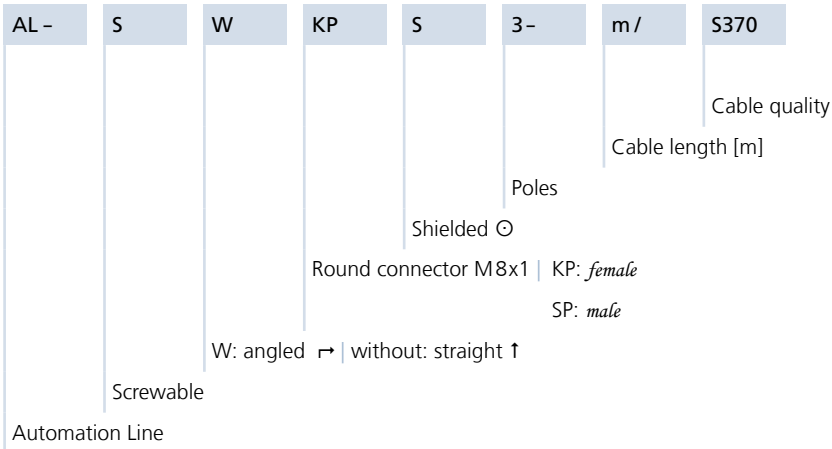


Product line	Version	Cable-quality	Poles	Type-designation	1 m	Cable length m 2 m	5 m
AL_M8x1	f ↗ m ↑	PUR S370 [®]	3	AL-SWKP3-m-AL-SSP3/S370	8044842	8044014	8044015
			4	AL-SWKP4-m-AL-SSP4/S370	8046576	8044026	8044027
			5	AL-SWKP4.5-m-AL-SSP4.5/S370	8052761	8052762	8052763
		PVC P00	3	AL-SWKP3-m-AL-SSP3/P00	8051444	8051445	8051446
			4	AL-SWKP4-m-AL-SSP4/P00	8051456	8051457	8051458
			5	AL-SWKP4.5-m-AL-SSP4.5/P00	8042855	8050039	8042857
		PVC P01 [®]	3	AL-SWKP3-m-AL-SSP3/P01	8051652	8051653	8051654
			4	AL-SWKP4-m-AL-SSP4/P01	8051664	8051665	8051666
			5	AL-SWKP4.5-m-AL-SSP4.5/P01	8051676	8051677	8051678
	f ↗ m ↗	PUR S370 [®]	3	AL-SWKP3-m-AL-SWSP3/S370	8046572	8044008	8044009
			4	AL-SWKP4-m-AL-SWSP4/S370	8046573	8044020	8044021
			5	AL-SWKP4.5-m-AL-SWSP4.5/S370	8052758	8052759	8052760
		PVC P00	3	AL-SWKP3-m-AL-SWSP3/P00	8051437	8051438	8051439
			4	AL-SWKP4-m-AL-SWSP4/P00	8051450	8051451	8051452
			5	AL-SWKP4.5-m-AL-SWSP4.5/P00	8042850	8050038	8042852
		PVC P01 [®]	3	AL-SWKP3-m-AL-SWSP3/P01	8051646	8051647	8051648
			4	AL-SWKP4-m-AL-SWSP4/P01	8051658	8051659	8051660
			5	AL-SWKP4.5-m-AL-SWSP4.5/P01	8051670	8051671	8051672
	f ↗ LED2 __ m ↑	PUR S370 [®]	3	AL-SWKP3P2-m-AL-SSP3/S370	8047130	8045932	8045933
			4	AL-SWKP4P2-m-AL-SSP4/S370	8049863	8045935	8045936
			5	AL-SWKP4.5P2-m-AL-SSP4.5/S370	8052758	8052759	8052760
		PVC P00	3	AL-SWKP3P2-m-AL-SSP3/P00	8051531	8051532	8051533
			4	AL-SWKP4P2-m-AL-SSP4/P00	8051534	8051535	8051536
			5	AL-SWKP4.5P2-m-AL-SSP4.5/P00	8052758	8052759	8052760
		PVC P01 [®]	3	AL-SWKP3P2-m-AL-SSP3/P01	8051739	8051740	8051741
			4	AL-SWKP4P2-m-AL-SSP4/P01	8051742	8051743	8051744
			5	AL-SWKP4.5P2-m-AL-SSP4.5/P01	8052758	8052759	8052760

Other versions and cable-lengths are available upon request.

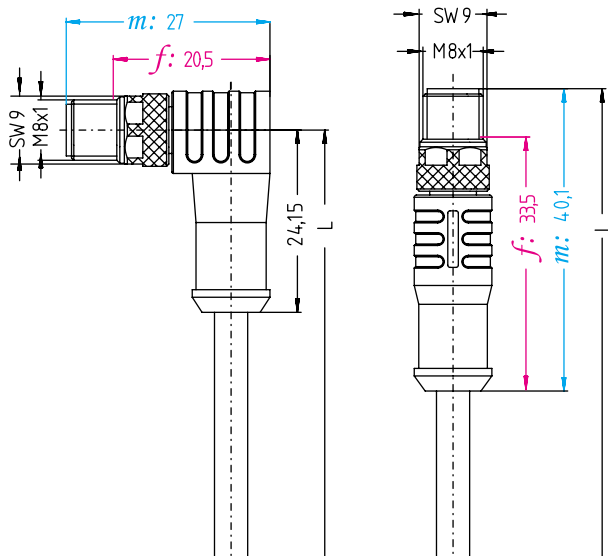


AUTOMATION LINE [®]			M8x1 junction cable								
Technical data		Poles	Value								
Rated voltage [U _{max}]	3		60V								
	4, 5		30V								
Current load [I _{max}]	3, 4		4A								
	5		3A								
Insulation resistance			≥ 10 ⁸ Ω								
Standards			IEC 61076-2-104								
Materials	Grip		TPU, BK								
	Contact carrier		TPU, BK								
	Sealing (<i>female</i>)		FPM/FKM								
	Contacts		CuZn, gold-plated								
	Locking mechanism		CuZn, nickel-plated								
Ambient temperature			-30°C...+90°C								
Degree of pollution			3								
Protection class (in threaded condition)			IP 67, IP 69K								
Mechanical life cycle			>100 mating cycles								
Pinning											
3 poles <i>female</i>		3 poles <i>male</i>		4 poles <i>female</i>		4 poles <i>male</i>		5 poles <i>female</i>		5 poles <i>male</i>	
											
1BN 3BU 4BK		1BN 2WH 3BU 4BK		1BN 2WH 3BU 4BK 5GY							



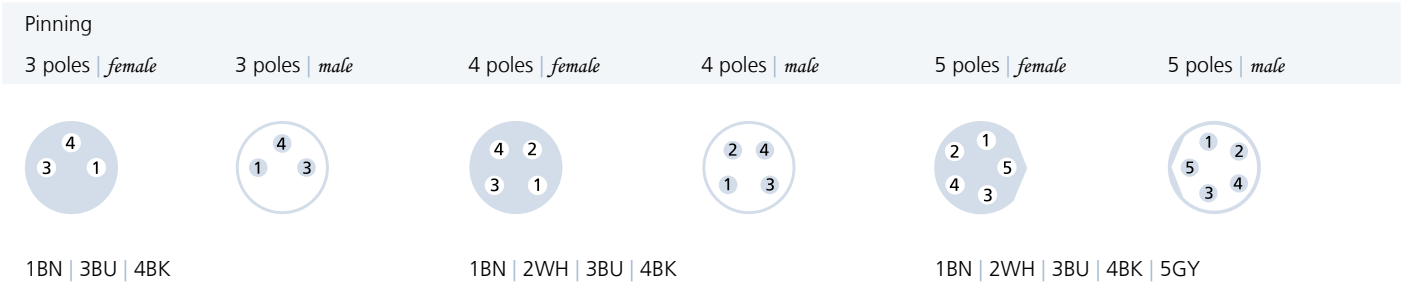
Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M8x1 ○	f ↑	PUR S370 [®]	3	AL-SKPS3-m/S370	8046192	8046193	8046194
			4	AL-SKPS4-m/S370	8046204	8046205	8046206
			5	AL-SKPS4.5-m/S370	8047058	8051864	8051865
		PVC P00	3	AL-SKPS3-m/P00	8051140	8051141	8051142
			4	AL-SKPS4-m/P00	8051152	8051153	8051154
			5	AL-SKPS4.5-m/P00	8047046	8051854	8051855
	f ↗	PVC P01 [®]	3	AL-SKPS3-m/P01	8051349	8051350	8051351
			4	AL-SKPS4-m/P01	8051362	8051363	8051364
			5	AL-SKPS4.5-m/P01	8051362	8051363	8051364
		PUR S370 [®]	3	AL-SWKPS3-m/S370	8046195	8046196	8046197
			4	AL-SWKPS4-m/S370	8046207	8046208	8046209
			5	AL-SWKPS4.5-m/S370	8047060	8051866	8051867
	m ↑	PVC P00	3	AL-SWKPS3-m/P00	8051143	8051144	8051145
			4	AL-SWKPS4-m/P00	8051155	8051156	8051157
			5	AL-SWKPS4.5-m/P00	8047051	8051856	8051857
		PVC P01 [®]	3	AL-SWKPS3-m/P01	8051353	8051354	8051355
			4	AL-SWKPS4-m/P01	8051365	8051366	8051367
			5	AL-SWKPS4.5-m/P01	8051365	8051366	8051367
	m ↑	PUR S370 [®]	3	AL-SSPS3-m/S370	8046198	8046199	8046200
			4	AL-SSPS4-m/S370	8046210	8046211	8046212
			5	AL-SSPS4.5-m/S370	8047061	8050058	8050059
		PVC P00	3	AL-SSPS3-m/P00	8051146	8051147	8051148
			4	AL-SSPS4-m/P00	8051158	8051159	8051160
			5	AL-SSPS4.5-m/P00	8047048	8050048	8050049
	PVC P01 [®]	PVC P01 [®]	3	AL-SSPS3-m/P01	8051356	8051357	8051358
			4	AL-SSPS4-m/P01	8051368	8051369	8051370
			5	AL-SSPS4.5-m/P01	8051368	8051369	8051370
		PUR S370 [®]	3	AL-SWSPS3-m/S370	8046201	8046202	8046203
			4	AL-SWSPS4-m/S370	8046214	8046215	8046216
			5	AL-SWSPS4.5-m/S370	8047062	8050060	8050061
	m ↗	PVC P00	3	AL-SWSPS3-m/P00	8051149	8051150	8051151
			4	AL-SWSPS4-m/P00	8051161	8051162	8051163
			5	AL-SWSPS4.5-m/P00	8047052	8050050	8050051
		PVC P01 [®]	3	AL-SWSPS3-m/P01	8051359	8051360	8051361
			4	AL-SWSPS4-m/P01	8051371	8051372	8051373
			5	AL-SWSPS4.5-m/P01	8051371	8051372	8051373

Other versions and cable-lengths are available upon request.



Automation Line® M8x1 shielded ○

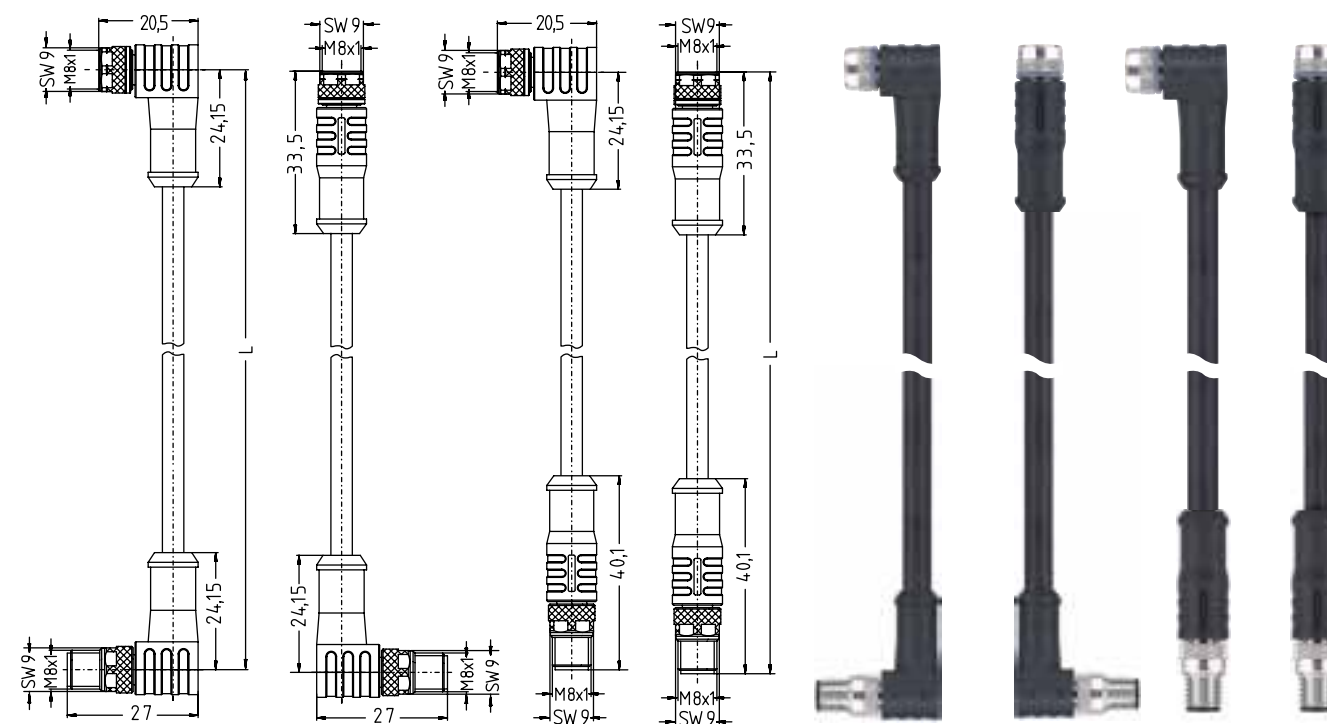
Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles



[illegible]

Product line	Version	Cable-quality	Poles	Type-designation	1m	Cable length 2m	5m
AL_M8x1⊙	f ↑__m ↑	PUR S370 [®]	3	AL-SKPS3-m-AL-SSPS3/S370	8051896	8046246	8046247
			4	AL-SKPS4-m-AL-SSPS4/S370	8051914	8046258	8046259
			5	AL-SKPS4.5-m-AL-SSPS4.5/S370	8052768	8052769	8052770
		PVC P00	3	AL-SKPS3-m-AL-SSPS3/P00	8051558	8051559	8051560
			4	AL-SKPS4-m-AL-SSPS4/P00	8051570	8051571	8051572
			5	AL-SKPS4.5-m-AL-SSPS4.5/P00	8042863	8042864	8042865
		PVC P01 [®]	3	AL-SKPS3-m-AL-SSPS3/P01	8051766	8051767	8051768
			4	AL-SKPS4-m-AL-SSPS4/P01	8051778	8051779	8051780
		f ↑__m ↗	PUR S370 [®]	3	AL-SKPS3-m-AL-SWSPS3/S370	8051915	8046252
	4			AL-SKPS4-m-AL-SWSPS4/S370	8051916	8046264	8046265
	5			AL-SKPS4.5-m-AL-SWSPS4.5/S370	8052777	8052778	8052779
	PVC P00		3	AL-SKPS3-m-AL-SWSPS3/P00	8051564	8051565	8051566
			4	AL-SKPS4-m-AL-SWSPS4/P00	8051576	8051577	8051578
			5	AL-SKPS4.5-m-AL-SWSPS4.5/P00	8042876	8042877	8042878
	PVC P01 [®]		3	AL-SKPS3-m-AL-SWSPS3/P01	8051772	8051773	8051774
			4	AL-SKPS4-m-AL-SWSPS4/P01	8051784	8051785	8051786
	f ↗__m ↑		PUR S370 [®]	3	AL-SWKPS3-m-AL-SSPS3/S370	8051917	8046255
		4		AL-SWKPS4-m-AL-SSPS4/S370	8051918	8046267	8046268
		5		AL-SWKPS4.5-m-AL-SSPS4.5/S370	8052774	8052775	8052776
		PVC P00	3	AL-SWKPS3-m-AL-SSPS3/P00	8051567	8051568	8051569
			4	AL-SWKPS4-m-AL-SSPS4/P00	8051579	8051580	8051581
			5	AL-SWKPS4.5-m-AL-SSPS4.5/P00	8042872	8042873	8042874
		PVC P01 [®]	3	AL-SWKPS3-m-AL-SSPS3/P01	8051775	8051776	8051777
			4	AL-SWKPS4-m-AL-SSPS4/P01	8051787	8051788	8051789
f ↗__m ↗		PUR S370 [®]	3	AL-SWKPS3-m-AL-SWSPS3/S370	8051919	8046249	8046250
	4		AL-SWKPS4-m-AL-SWSPS4/S370	8051920	8046261	8046262	
	5		AL-SWKPS4.5-m-AL-SWSPS4.5/S370	8052771	8052772	8052773	
	PVC P00	3	AL-SWKPS3-m-AL-SWSPS3/P00	8051561	8051562	8051563	
		4	AL-SWKPS4-m-AL-SWSPS4/P00	8051573	8051574	8051575	
		5	AL-SWKPS4.5-m-AL-SWSPS4.5/P00	8042868	8042869	8042870	
	PVC P01 [®]	3	AL-SWKPS3-m-AL-SWSPS3/P01	8051769	8051770	8051771	
		4	AL-SWKPS4-m-AL-SWSPS4/P01	8051781	8051782	8051783	

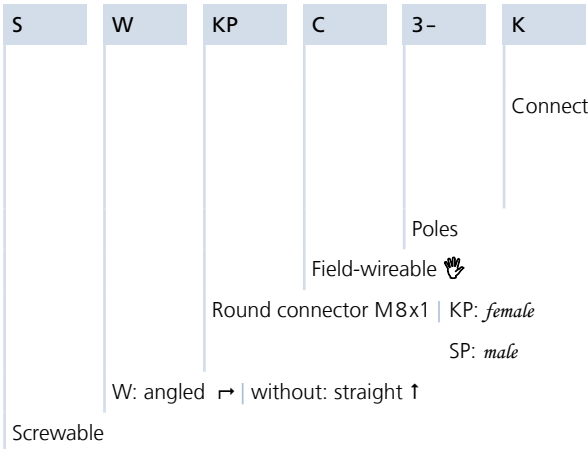
Other versions and cable-lengths are available upon request.



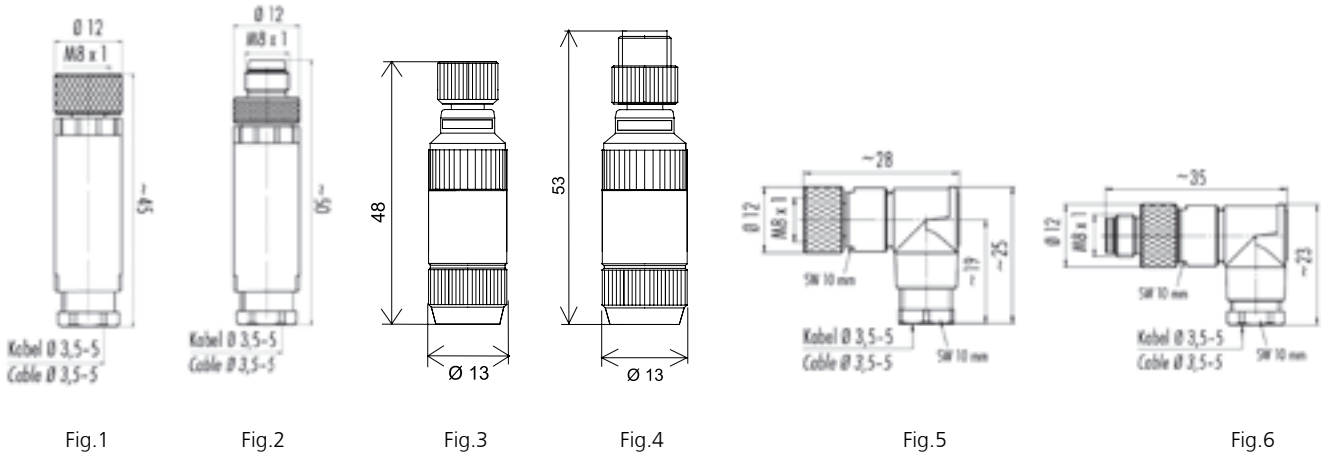
AUTOMATION LINE® M8x1 junction cable shielded ⊙

Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Pinning					
3 poles <i>female</i>	3 poles <i>male</i>	4 poles <i>female</i>	4 poles <i>male</i>	5 poles <i>female</i>	5 poles <i>male</i>
					
1BN 3BU 4BK		1BN 2WH 3BU 4BK		1BN 2WH 3BU 4BK 5GY	



Product line	Connection	Connection	Figure	Poles	Type-designation	Order-No.	Order-No.
M8x1	Screw-clamp	<i>f</i> ↑	Fig. 1	3	SKPC3K	8004833	
				4	SKPC4K	8004834	
		<i>m</i> ↑	Fig.2	3	SSPC3K	8004831	
				4	SSPC4K	8004832	
	Cut-clamp	<i>f</i> ↑	Fig. 3	3	SKPC3S	8019721	
				4	SKPC4S	8019723	
		<i>m</i> ↑	Fig. 4	3	SSPC3S	8019720	
				4	SSPC4S	8019722	
	Soldering	<i>f</i> ↗	Fig. 5	3	SWKPC3L	8017351	
				4	SWKPC4L	8017364	
		<i>m</i> ↗	Fig. 6	3	SWSPC3L	8017365	
				4	SWSPC4L	8017366	



M8x1 field-wireable				
Technical data	Poles	Value		
		Screw-clamp	Cut-clamp	Soldering
Rated voltage [U _{max}]	3, 4	60V	32V	60V
Current load [I _{max}]	3, 4	4A	3A	4A
Insulation resistance		≥10 ⁸ Ω	≥10 ⁸ Ω	≥10 ⁸ Ω
Standards		IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-104
Materials	Grip	PBT/PA, BK	PBT/PA, BK	PBT/PA, BK
	Contact carrier	PA, BK	PA, BK	PA, BK
	Contacts	CuZn, gold-plated	CuZn, gold-plated	CuZn, gold-plated
Ambient temperature		-40°C...+85°C	-40°C...+85°C	-40°C...+85°C
Degree of pollution		3	3	3
Protection class (in threaded condition)		IP67	IP67	IP67
External diameter of the cable		3.5...5mm	4...5.1mm	3.5...5mm
Core cross-section/Clamping ability		0.14...0.5mm ²	0.25...0.5mm ²	0.25mm ²
		AWG 26...20	AWG 24...20	AWG 24

Pinning

3 poles | female

3 poles | male

4 poles | female

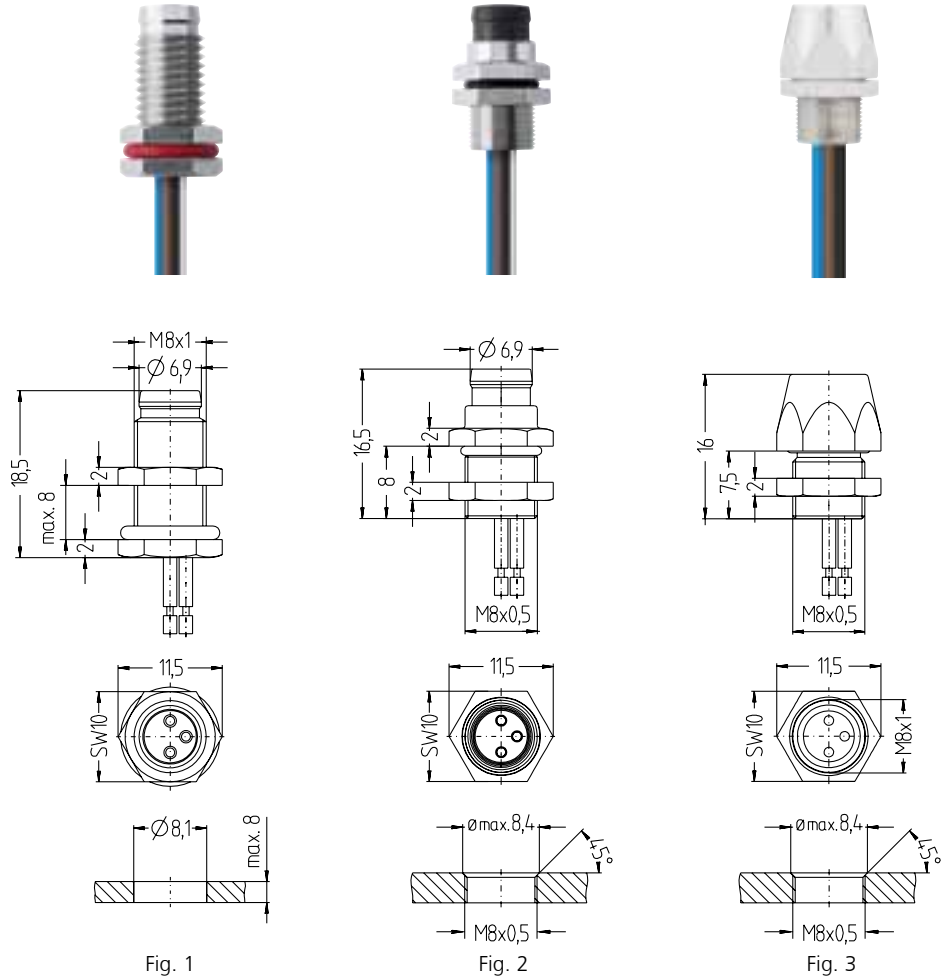
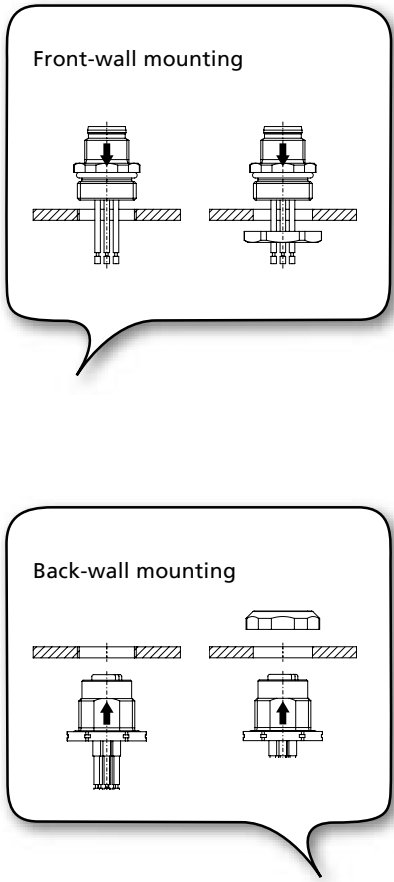
4 poles | male



P	FK	S	4 -	F -	0,2
					Wire-length [m]
					Back-wall mounting (threaded front)
			Poles		
		Screwable			
	FK: <i>female</i>				
	FS: <i>male</i>				
M8x1/Ø8mm snap					

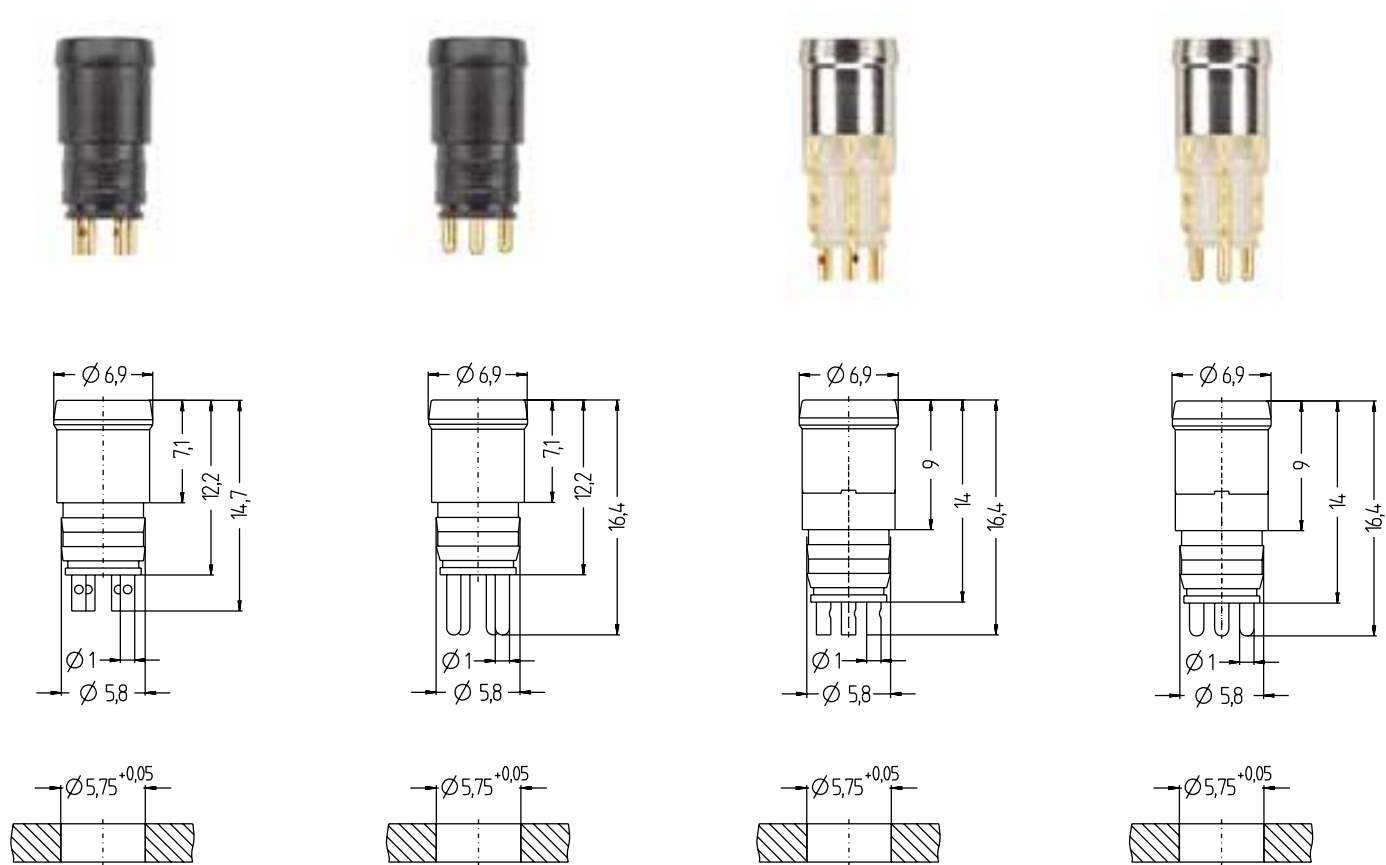
M8x1-Flanges	Version	Poles	Type-designation.	Order-No.
Front-wall mounting (optional threaded rear)	<i>f</i> ↑ CuZn	3	Fig. 3	PFKS3-0,2 8008169
		4		PFKS4-0,2 8008170
		5		PFKS4.5-0,2 8044266
	<i>m</i> ↑ CuZn	3	Fig. 2	PFS3-0,2 8008165
		4		PFS4-0,2 8008166
		5		PFS4.5-0,2 8044347
Back-wall mounting (threaded front)	<i>m</i> ↑ CuZn	3	Fig. 1	PFS3F-0,2 8008167
		4		PFS4F-0,2 8008168

Other versions, wire-lengths and -colours are available upon request.



M8x1 Flanges		
Technical data	Poles	Value
Rated voltage [U _{max}]	3	60V
	4, 5	30V
Current load [I _{max}]	3, 4	4A
	5	3A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Contact carrier	PA, BK
	Sealing (<i>female</i>)	NBR
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles
Accessories		Spare nuts are not included see accessories on page 154

Pinning					
3 poles <i>female</i>	3 poles <i>male</i>	4 poles <i>female</i>	4 poles <i>male</i>	5 poles <i>female</i>	5 poles <i>male</i>
1BN 3BU 4BK		1BN 2WH 3BU 4BK		1BN 2WH 3BU 4BK 5GY	

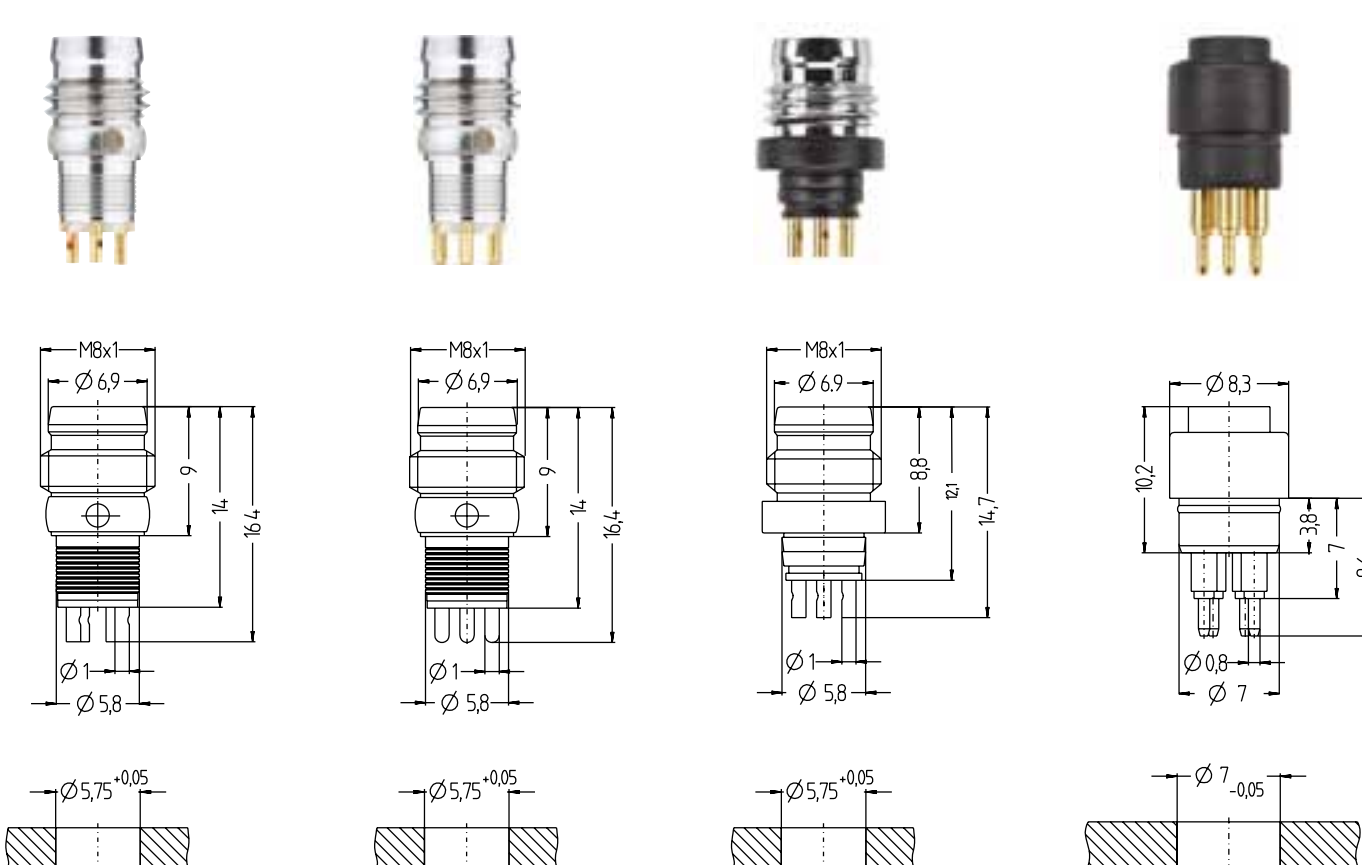


Built-in connector	Version	Poles	Soldering-contact		Print-contact	
			Type-designation	Order-No.	Type-designation	Order-No.
Ø8mm snap	<i>m</i> plastics BK	3	ESP3SL	8008163		
		4	ESP4SL	8008164	ESP4SP	8036657
		5	ESP5SL	8044283	ESP5SP	8044285
	<i>f</i> plastics BK	3			EKP3SP	8009728
		4			EKP4SP	8009729
		5			EKP4.5SP	8043797
	<i>m</i> metall/plastics transparent	3	ESHP3L	8008161	ESHP3P	8008159
		4	ESHP4L	8008162	ESHP4P	8008160
	<i>m</i> metall	3	ESGP3L	8008744	ESGP3P	8008742
		4	ESGP4L	8008745	ESGP4P	8008743
M8x1	<i>m</i> plastics BK	3	SESP3SL	8008157		
		4	SESP4SL	8037479		

Other versions are available upon request.



only for ESP 3-, 4-poles



ESGP_soldering-contact ESGP_print-contact SESP_soldering-contact EKP_print-contact

M8x1 Build-in connector

Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Contact carrier	PA, BK PA, transparent
	Metal housing	CuZn, nickel-plated
	Contacts	CuZn, gold-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP 67
Mechanical life cycle		>100 mating cycles

Pinning					
3 poles <i>female</i>	3 poles <i>male</i>	4 poles <i>female</i>	4 poles <i>male</i>	5 poles <i>female</i>	5 poles <i>male</i>



1BN | 3BU | 4BK

1BN | 2WH | 3BU | 4BK

1BN | 2WH | 3BU | 4BK | 5GY

FB -

S

W

KP

3 -

m /

S2300

Cable quality

Cable length [m]

Poles

Round connector M8x1 | KP: female
SP: male

W: angled ↗ | without: straight ↑

Screwable

Food & Beverage

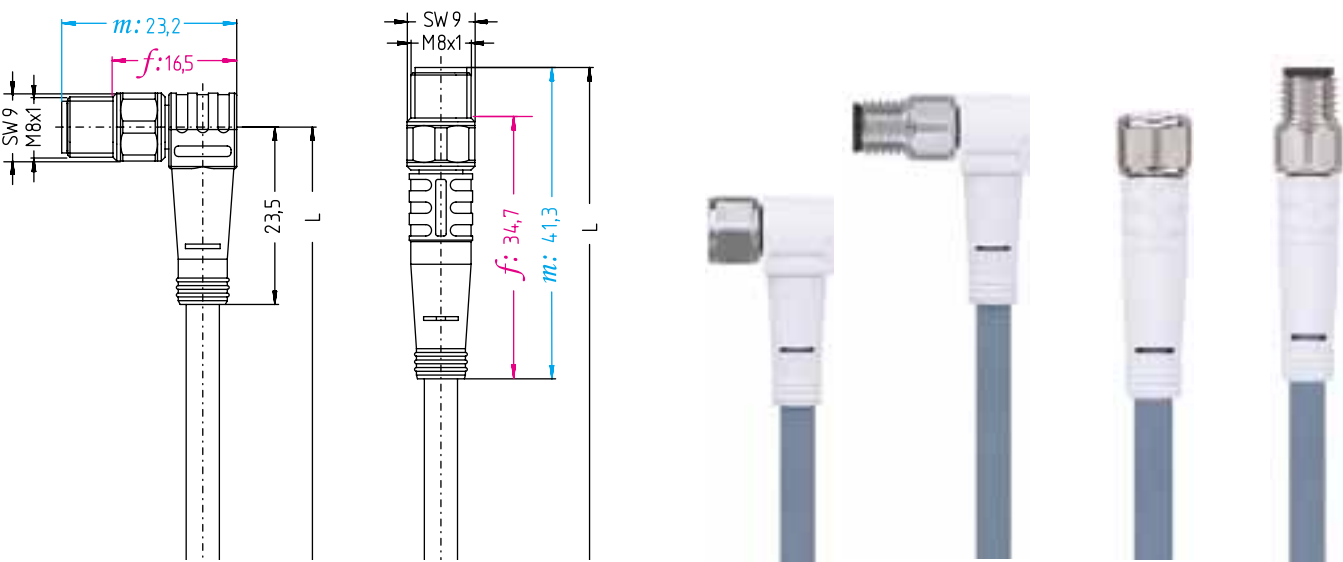


Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
FB_M8x1	f ↑	PP S2300	3	FB-SKP3-m/S2300	8039414	8035188	8039415
			4	FB-SKP4-m/S2300	8036165	8035867	8036166
	f ↗	PP S2300	3	FB-SWKP3-m/S2300	8039416	8035868	8039417
			4	FB-SWKP4-m/S2300	8039418	8035869	8039420
	m ↑	PP S2300	3	FB-SSP3-m/S2300	8039419	8035870	8039421
			4	FB-SSP4-m/S2300	8039422	8035871	8039423
	m ↗	PP S2300	3	FB-SWSP3-m/S2300	8039424	8035872	8039425
			4	FB-SWSP4-m/S2300	8039426	8035873	8039427

Other versions and cable-lengths are available upon request.

Cable quality PP | S2300

Flexible PVC-free polypropylene cable with great strength against highly effective detergents of the Food & Beverage industry. In addition, good microbes- and chemicals resistance and suitable for drag-chain applications. Torque up to 50N/mm². Well adapted for use in food industry, packaging-, bottling plants as well as industrial machinery- and plant construction .



Food & Beverage plus | PVC-free _ M8x1

Technical data		
Rated voltage [Umax]	Poles	Value
	3	60V
Current load [Imax]	4	30V
	3, 4	4A
Insulation resistance	≥ 10 ⁸ Ω	
Standards	IEC 61076-2-104	
Materials	Grip	PP, WH
	Contact carrier	PP, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	V4A
Ambient temperature	-40°C...+105°C	
Degree of pollution	3	
Protection class (in threaded condition)	IP67, IP69K	
Mechanical life cycle	>100 mating cycles	

Pinning			
3 poles <i>female</i>	3 poles <i>male</i>	4 poles <i>female</i>	4 poles <i>male</i>

4
3 1

1BN | 3BU | 4BK

4
1 3

4 2
3 1

1BN | 2WH | 3BU | 4BK

2 4
1 3

M8x1

Food & Beverage plus | PVC-free

122

123

FB -	S	W	KP	3 -	m -	FB -	S	W	SP	3 /	S2300
											Cable quality
											Poles
											Round connector. M8x1 SP: <i>male</i>
											W: angled ↗ without: straight ↑
											Screwable
											Food & Beverage
											Cable length [m]
											Poles
											Round connector M8x1 KP: <i>female</i>
											W: angled ↗ without: straight ↑
											Screwable
											Food & Beverage

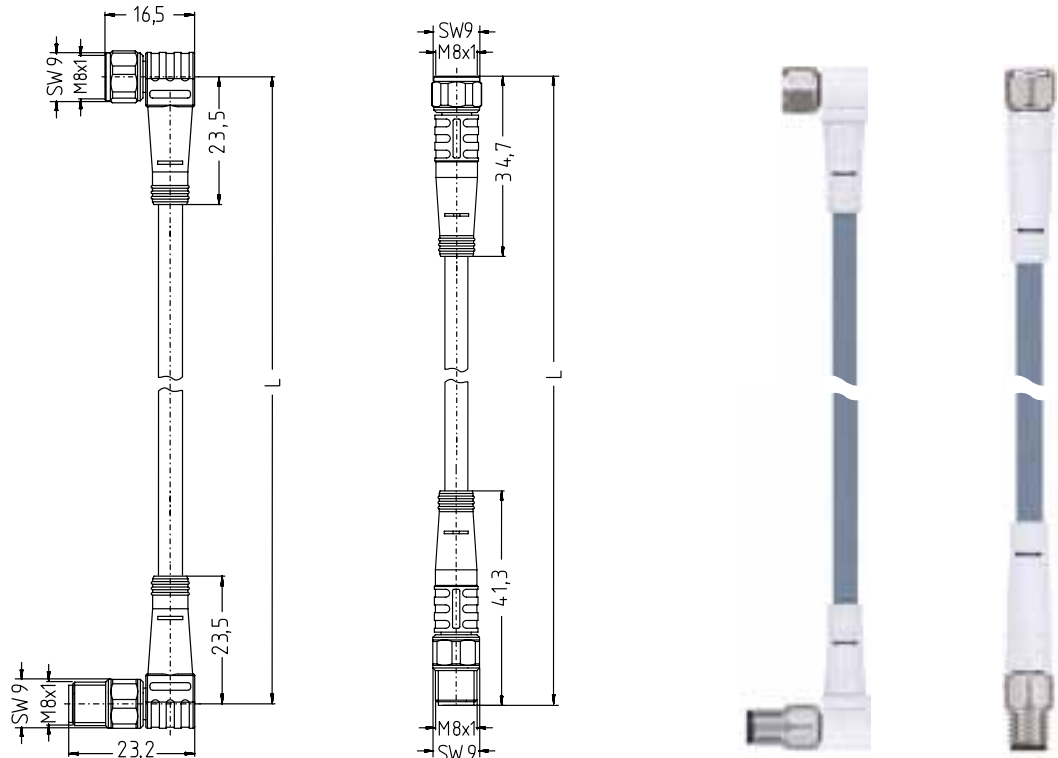


Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m10m
FB_M8x1	<i>f</i> ↑__ <i>m</i> ↑	PP S2300	3	FB-SKP3-m-FB-SSP3/S2300	8051993	80396968039697
			4	FB-SKP4-m-FB-SSP4/S2300	8051994	80396998039700
	<i>f</i> ↗__ <i>m</i> ↗	PP S2300	3	FB-SWKP3-m-FB-SWSP3/S2300	8051995	80397028039703
			4	FB-SWKP4-m-FB-SWSP4/S2300	8051996	80397058039706

Other versions and cable-lengths are available upon request.

Cable quality PP | S2300

Flexible PVC-free polypropylene cable with great strength against highly effective detergents of the Food&Beverage industry. In addition, good microbes- and chemicals resistance and suitable for drag-chain applications. Torque up to 50N/mm². Well adapted for use in food industry, packaging-, bottling plants as well as industrial machinery- and plant construction .



Food & Beverage plus | PVC-free _ M8x1 junction cable

Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4	30V
Current load [Imax]	3, 4	4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	PP, WH
	Contact carrier	PP, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	V4A
Ambient temperature		-40°C...+105°C
Degree of pollution		3
Protection class (in threaded condition)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Pinning			
3 poles <i>female</i>	3 poles <i>male</i>	4 poles <i>female</i>	4 poles <i>male</i>
1BN 3BU 4BK		1BN 2WH 3BU 4BK	

HT -

S

W

KP

3 -

m /

S2430

Cable quality

Cable length [m]

Poles

Round connector M8x1 | KP: *female*
SP: *male*

W: angled ↗ | without: straight ↑

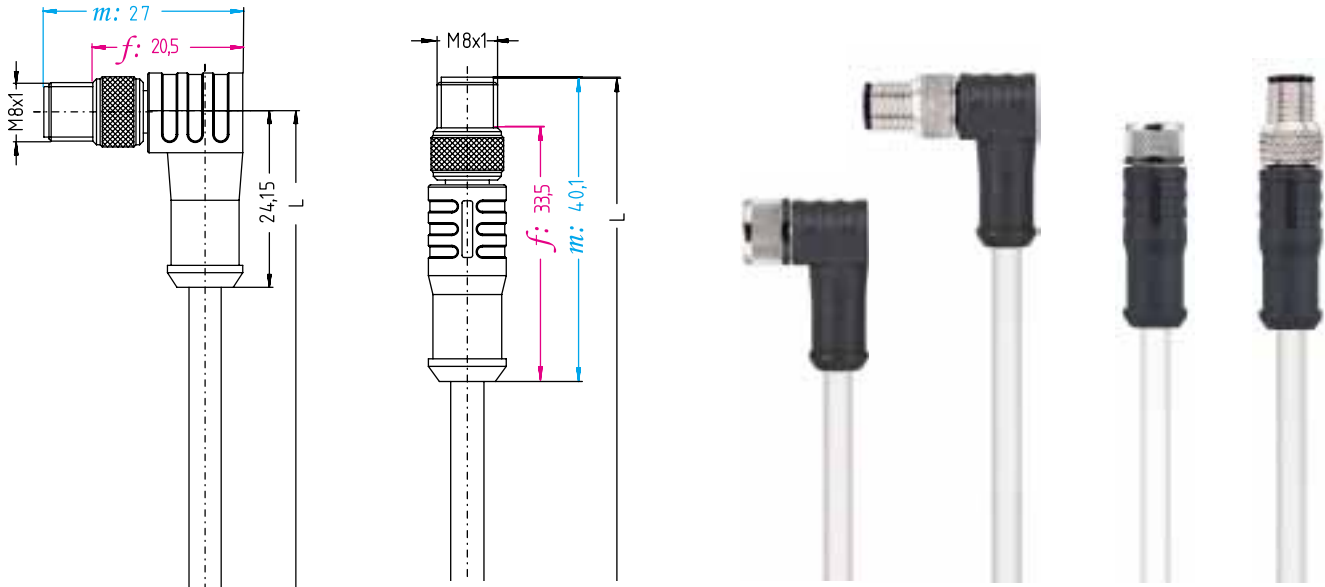
Screwable

High temperature-proof

Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
HT_M8x1	f ↑	PTFE S2430	3	HT-SKP3-m/S2430	8036605	8036097	8039482
			4	HT-SKP4-m/S2430	8039483	8036098	8037215
	f ↗	PTFE S2430	3	HT-SWKP3-m/S2430	8039484	8036099	8039485
			4	HT-SWKP4-m/S2430	8039486	8036100	8037216
	m ↑	PTFE S2430	3	HT-SSP3-m/S2430	8039487	8036101	8039488
			4	HT-SSP4-m/S2430	8039489	8036102	8039490
	m ↗	PTFE S2430	3	HT-SWSP3-m/S2430	8039491	8036103	8039492
			4	HT-SWSP4-m/S2430	8039493	8036104	8039494
	Other versions and cable-lengths are available upon request.						

Cable quality PTFE | S2430

Flexible PTFE-cable with high temperature resistance (300°C/3000 h), cold bending resistance down to -65°C. Excellent oil-, acids-, chemicals-, ozone- and weather resistance and flame retardant. It is low-smoke without corrosive fire gases. Applications in extended temperature-range of industrial machinery- and plant construction as well as the chemical- and automotive industries.



M8x1 High temperature-proof

Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4	30V
Current load [Imax]	3, 4	4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	PBT, BK
	Contact carrier	PBT, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-20°C...+150°C
Degree of pollution		3
Protection class (in threaded condition)		IP65
Mechanical life cycle		>100 mating cycles

Pinning			
3 poles <i>female</i>	3 poles <i>male</i>	4 poles <i>female</i>	4 poles <i>male</i>

4
3 1

1BN | 3BU | 4BK

4
1 3

4 2
3 1

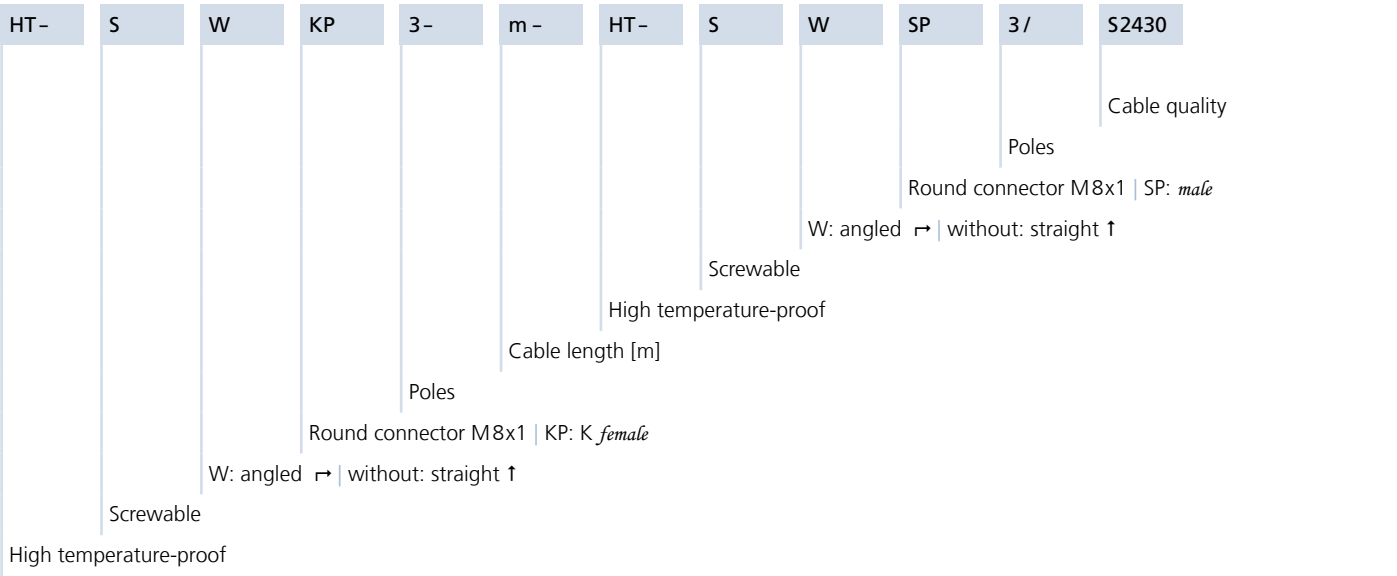
1BN | 2WH | 3BU | 4BK

2 4
1 3

M8x1
High temperature-proof

126

127

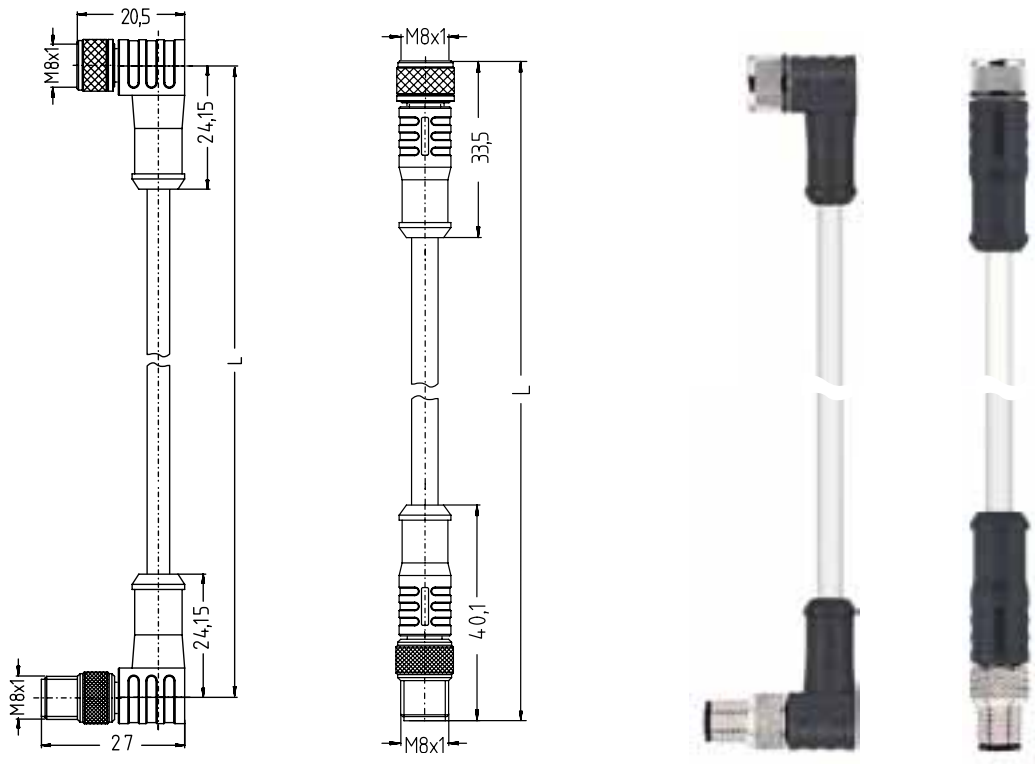


Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
HT_M8x1	<i>f</i> ↑__ <i>m</i> ↑	PTFE S2430	3	HT-SKP3-m-HT-SSP3/S2430	8043355	8039972	8039973
			4	HT-SKP4-m-HT-SSP4/S2430	8051990	8039975	8039976
HT_M8x1	<i>f</i> ↗__ <i>m</i> ↗	PTFE S2430	3	HT-SWKP3-m-HT-SWSP3/S2430	8051991	8039978	8039979
			4	HT-SWKP4-m-HT-SWSP4/S2430	8051992	8039981	8039982

Other versions and cable-lengths are available upon request.

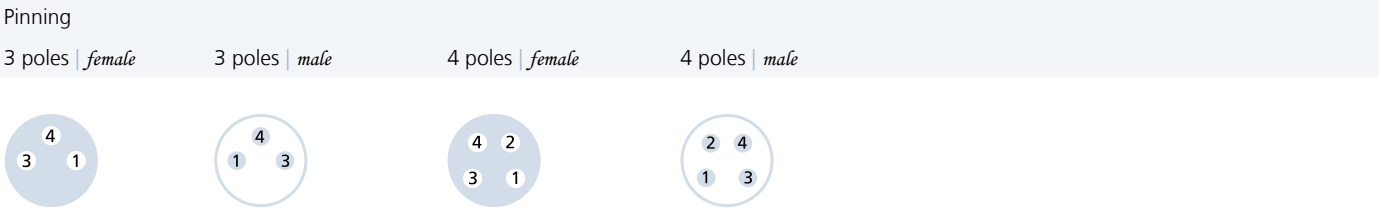
Cable quality PTFE | S2430

Flexible PTFE-cable with high temperature resistance (300°C/3000h), cold bending resistance down to -65°C. Excellent oil-, acids-, chemicals-, ozone- and weather resistance and flame retardant. It is low-smoke without corrosive fire gases. Applications in extend- ed temperature-range of industrial machinery- and plant construction as well as the chemical- and automotive industries.



M8x1 High temperature-proof | junction cable

Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4	30V
Current load [Imax]	3, 4	4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	PBT, BK
	Contact carrier	PBT, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-20°C...+150°C
Degree of pollution		3
Protection class (in threaded condition)		IP65
Mechanical life cycle		>100 mating cycles



1BN | 3BU | 4BK

1BN | 2WH | 3BU | 4BK

IE-

S

W

SP

S

4.027-

m /

S3400

Cable quality

Cable length [m]

Contacts.allocation code

Shielded ☉

Round connector M8x1 | SP: *male*

W: angled ↗ | without: straight ↑

Screwable

Industrial Ethernet



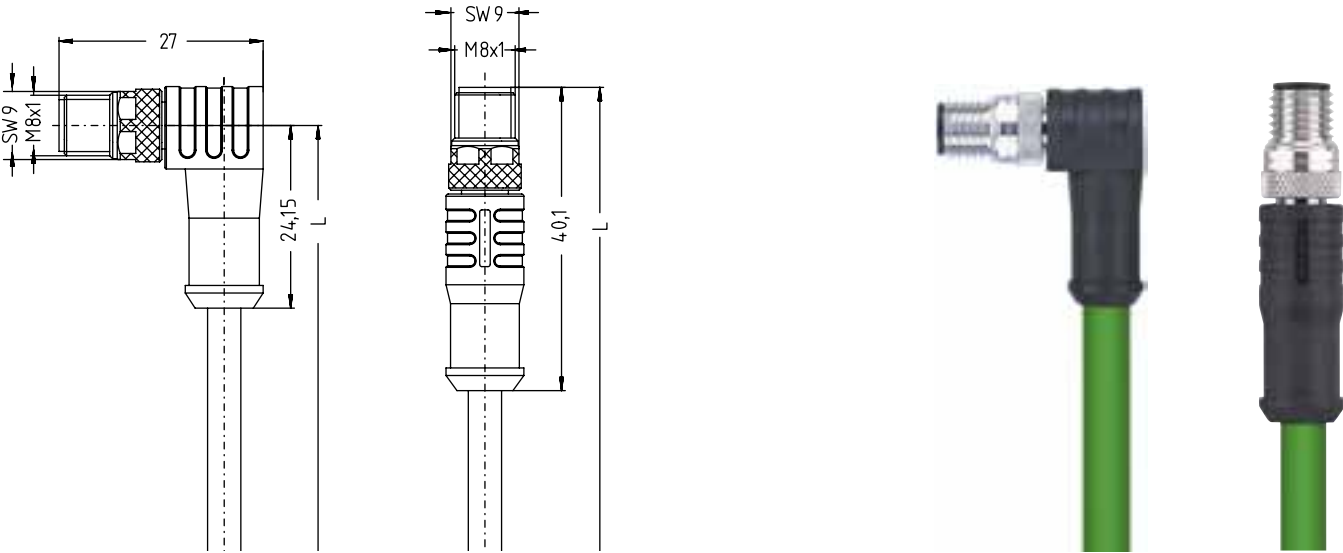
Product line	Poles	Version	Cable-quality		Type-designation	Cable length m		
						2m	5m	10m
IE_M8x1 ☉	4 Cat5e	<i>m</i> ↑	PUR S3400 [®]		IE-SSPS4.027-m/S3400	8055529	8055530	8055531
			PVC S3242 [®]		IE-SSPS4.027-m/S3242	8055463	8055514	8055515
	4 Cat5e	<i>m</i> ↗	PUR S3400 [®]		IE-SWSPS4.027-m/S3400	8055789	8055790	8055791
			PVC S3242 [®]		IE-SWSPS4.027-m/S3242	8055786	8055787	8055788
	100m buscable		PUR S3400 [®]	8055896				
			PVC S3242 [®]	8055780				

Other versions and cable-lengths are available upon request.

Cable-quality

Shielded Ethernet-cables in PUR-quality for safe and industrial-suited data transmission in automation- and fieldbus technology. Realtime requirements based on IEC 61158 are viable. The cables are UL-approved and meet the Cat5e requirements. Oil-resistance is according to DIN EN 60811-2-1 and flame retardancy according to IEC 60332-1-2. Materials and constructive setup allow for the mechanical stresses mentioned below.

ESCHA Nomenclatur	S3400 [®]	S3242 [®]
Cable quality for	PUR	PVC
Transmission category	according to Cat5e	Cat5e
Nominal diameter	Ø 4.8mm	Ø 4.7mm
Wire-structure data	4xAWG26/19	4xAWG26/7
Wire colours	WHOG WHBU BU OG	WHOG WHBU BU OG
Bending radius	single	5xd
	repeated	7xd
	draig-chain	≥ 36mm (v _{max} = 3 m/s a _{max} = 5 m/s²)
Temperature range	-40°C...+80°C	-40°C...+70°C



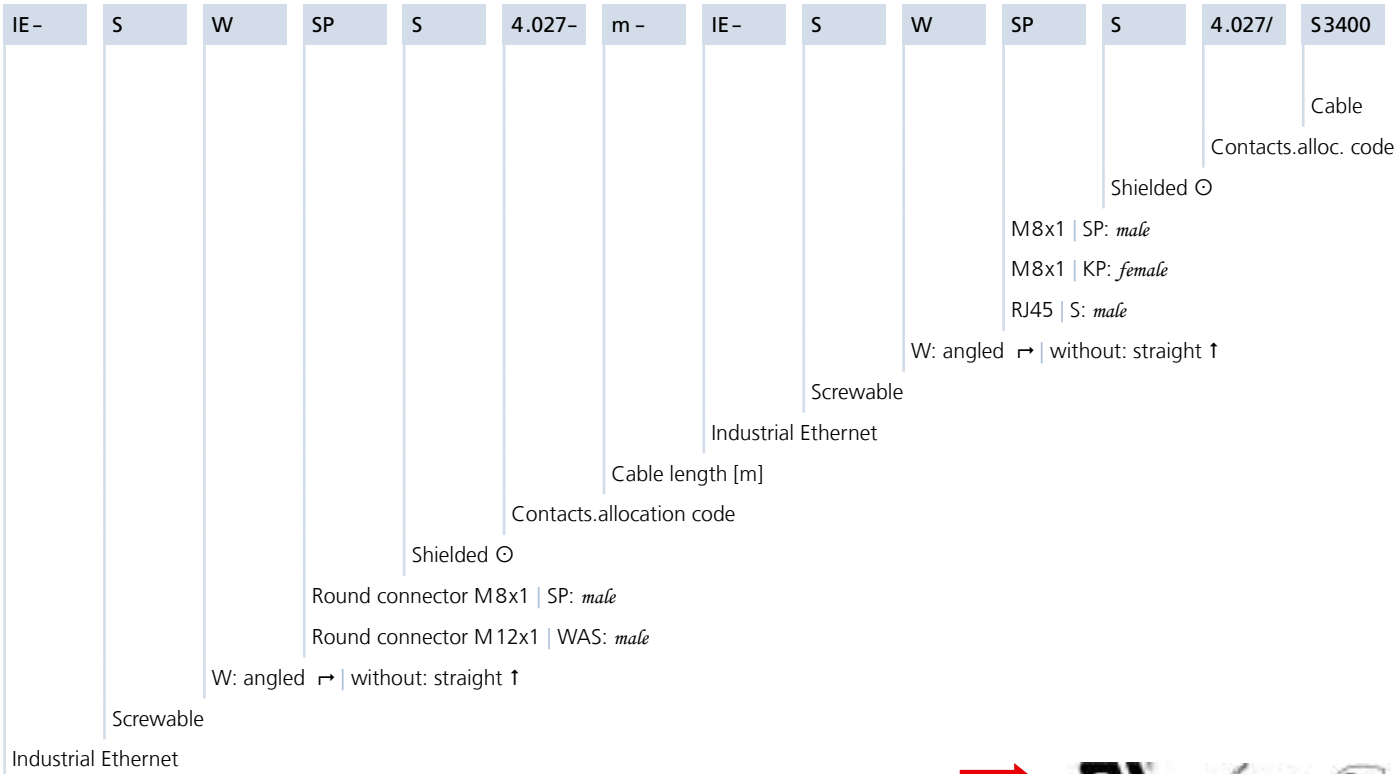
Industrial Ethernet | EtherCAT_M8x1 shielded ☉

Technical data	Poles	Value
Rated voltage [U _{max}]	4	30V
Current load [I _{max}]	4	4A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	PA, sBK
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP 67, IP69K
Mechanical life cycle		>100 mating cycles

Pinning
4-poles | *male*



1WHOG | 2WHBU | 3BU | 4BOG



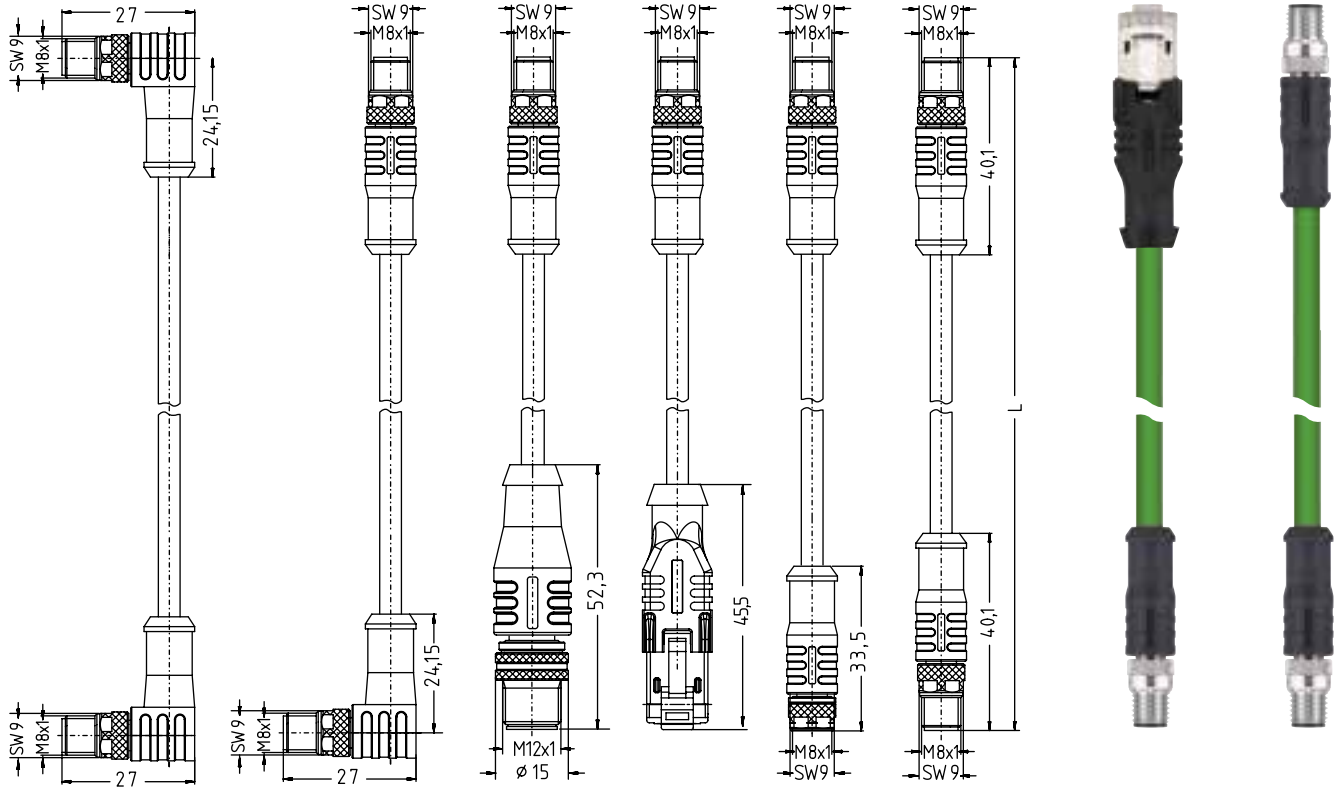
Product line	Poles	Version	Cable-quality	Type-designation	1 m	Cable length m 2 m	5 m
IE_M8x1 O	4 Cat5e	<i>m</i> ↑__ <i>m</i> ↑	PUR S3400 [®]	IE-SSPS4.027-m-IE-SSPS4.027/S3400	8055532	8055533	8055534
			PVC S3242 [®]	IE-SSPS4.027-m-IE-SSPS4.027/S3242	8055516	8055517	8055518
		<i>m</i> ↑__ <i>m</i> ↗	PUR S3400 [®]	IE-SWSPS4.027-m-IE-SSPS4.027/S3400	8055795	8055796	8055797
			PVC S3242 [®]	IE-SWSPS4.027-m-IE-SSPS4.027/S3242	8055792	8055793	8055794
		<i>m</i> ↗__ <i>m</i> ↗	PUR S3400 [®]	IE-SWSPS4.027-m-IE-SWSPS4.027/S3400	8055801	8055802	8055804
			PVC S3242 [®]	IE-SWSPS4.027-m-IE-SWSPS4.027/S3242	8055798	8055799	8055800
	4 Cat5e	<i>m</i> ↑__ <i>f</i> ↑	PUR S3400 [®]	IE-SSPS4.027-m-IE-SKPS4.027/S3400	8055535	8055537	8055538
			PVC S3242 [®]	IE-SSPS4.027-m-IE-SKPS4.027/S3242	8055519	8055520	8055521
		<i>m</i> ↑__RJ45	PUR S3400 [®]	IE-SSPS4.027-m-IE-RJ45S8.005/S3400	8055536	8055539	8055540
			PVC S3242 [®]	IE-SSPS4.027-m-IE-RJ45S8.005/S3242	8055522	8055523	8055525
	4 Cat5e	<i>m</i> ↑__ <i>m</i> ↑	PUR S3400 [®]	IE-WASSY4.082-m-IE-SSPS4.027/S3400	8055552	8055553	8055554
			PVC S3242 [®]	IE-WASSY4.082-m-IE-SSPS4.027/S3242	8055549	8055550	8055551

Other versions and cable-lengths are available upon request.

Cable-quality

Shielded Ethernet-cables in PUR-quality for safe and industrial-suited data transmission in automation- and fieldbus technology. Realtime requirements based on IEC 61158 are viable. The cables are UL-approved and meet the Cat5e requirements. Oil-resistance is according to DIN EN 60811-2-1 and flame retardancy according to IEC 60332-1-2. Materials and constructive setup allow for the mechanical stresses mentioned below.

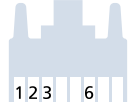
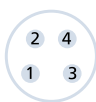
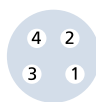
ESCHA Nomenclatur	S3400 [®]	S3242 [®]
Cable quality for	PUR	PVC
Transmission category	according to Cat5e	Cat5e
Nominal diameter	Ø 4.8mm	Ø 4.7mm
Wire-structure data	4xAWG26/19	4xAWG26/7
Wire colours	WHOG WHBU BU OG	WHOG WHBU BU OG
Bending radius	single repeated draig-chain	single repeated draig-chain
Temperature range	-40°C...+80°C	-40°C...+70°C



Industrial Ethernet | EtherCAT_M8x1 junction cable shielded O

Technical data		M8x1	M12x1	RJ45	
	Poles	Value	Value	Poles	Value
Rated voltage [U _{max}]	4	30V	250V	4-adrig	50V
Current load [I _{max}]	4	4A	4A	4-adrig	1A
Insulation resistance		≥ 10 ⁸ Ω	≥ 10 ⁸ Ω	≥ 10 ⁸ Ω	
Standards		IEC 61076-2-104	IEC 61076-2-101	IEC 60603-7-5	
Materials	Grip	TPU, BK	TPU, BK	Grip	TPU, BK
	Contact carrier <i>m</i>	TPU, BK	TPU, BK	Contact carrier/Loader	PC, transparent
	Contact carrier <i>f</i>	PA, BK		Contacts	CuZn, gold-plated
	Sealing (<i>female</i>)	FPM/FKM		Shielding	CuZn, nickel-plated
	Contacts	CuZn, gold-plated	CuZn, gold-plated		
	Locking mec.	CuZn, nickel-plated	CuZn, nickel-plated		
Ambient temperature		-30°C...+90°C	-30°C...+90°C	-20°C...+75°C	
Degree of pollution		3	3	1	
Protection class (in threaded condition)		IP67, IP69K	IP67, IP69K	IP20	
Mechanical life cycle		>100 mating cycles	>100 mating cycles	>750 mating cycles	

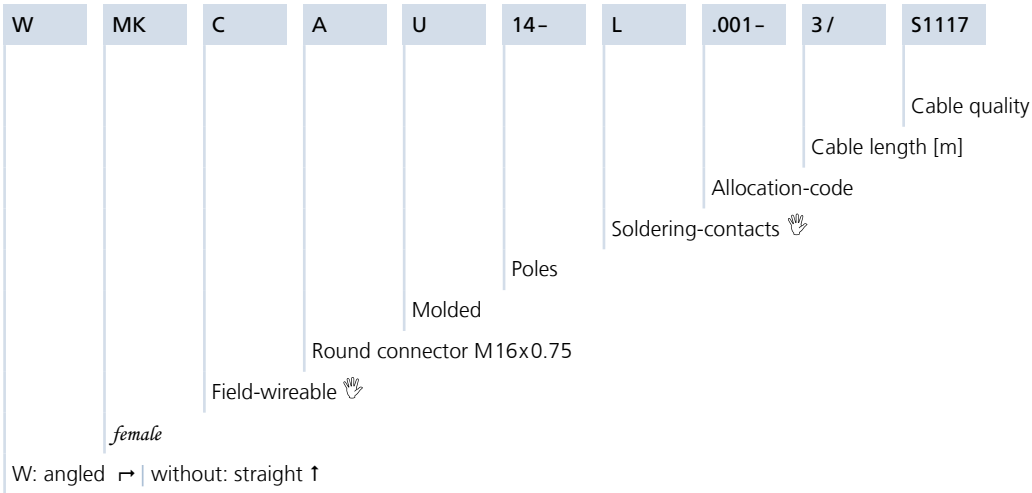
Pinning M8x1	Pinning M12x1	Pinning RJ45
4-poles <i>female</i>	4-poles <i>male</i>	4-poles <i>male</i> D
Industrial 4-poles	Industrial 4-poles	Industrial 4-poles
1WHOG 2OG 3WHBU 4BU	1WHOG 2OG 3WHBU 4BU	1WHOG 2OG 3WHBU 6BU



1WHOG | 2OG | 3WHBU | 4BU

1WHOG | 2OG | 3WHBU | 4BU

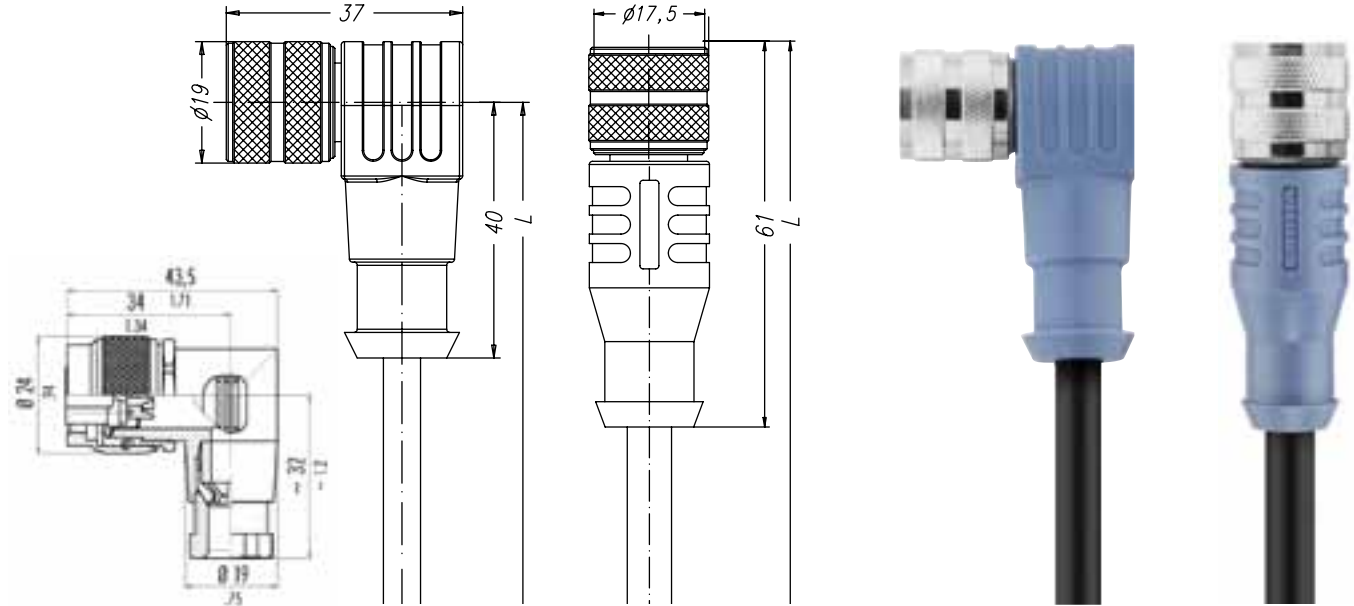
1WHOG | 2OG | 3WHBU | 6BU



Product line	Version	Poles. allcocation	Cable quality	Type-designation		2m	Cable length m 5m10m
M16x0.75	f ↑	14.001	PUR S1117®	MKAU14.001-m/S1117		8029796	80298658029866
		14.003		MKAU14.003-m/S1117		8029798	80298698029870
		19.001		MKAU19.001-m/S1117		8029813	80298738029874
		14.001	PVC S1118	MKAU14.001-m/S1118		8029797	80298678029868
		14.003		MKAU14.003-m/S1118		8029799	80298718029872
	f ↗	19.001		MKAU19.001-m/S1118		8029814	80298758029876
		14.001	PUR S1117®	WMKAU14.001-m/S1117		8019431	80194328019443
		14.003		WMKAU14.003-m/S1117		8026802	80272318027232
		19.001		WMKAU19.001-m/S1117		8022166	80272358027236
		14.001	PVC S1118	WMKAU14.001-m/S1118		8018508	80194448019445
	f ↗	14.003		WMKAU14.003-m/S1118		8026801	80272338027234
		19.001		WMKAU19.001-m/S1118		8022167	80272378027238

WMKCA14L 8017607

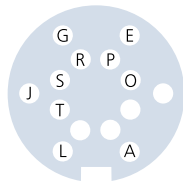
Other versions and cable-lengths are available upon request.



M16x0.75 female				
Technical data	Molded		Field-wireable	
	Poles	Value	Poles	Value
Rated voltage [Umax]	14, 19	32V	14	60V
Current load [Imax]	14, 19	6A contacts A, L, M, U 2A other contacts	14	3A
Insulation resistance		≥10 ⁸ Ω		≥10 ⁸ Ω
Standards		IEC 61076-2-106		IEC 61076-2-106
Materials	Grip	TPU, BU	Grip	PA, BK
	Contact carrier	TPU, BK	Contact carrier	PBT, BK
	Sealing	NBR	Sealing	NBR
	Contacts	CuZn, gold-plated	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated	Locking mechanism	CuZn, chrome-plated
Ambient temperature		-30°C...+90°C		-30°C...+90°C
Degree of pollution		3		3
Protection class (in threaded condition)		IP67		IP67
Mechanical life cycle		>100 mating cycles		>100 mating cycles
Core cross-section/Clamping ability		0.5mm ² A, L, M, U 0.25mm ² others		0.25...0.5 mm ²
External diameter of the cable				6...8mm

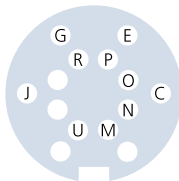
Pinning | female

14.001



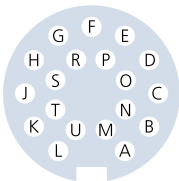
A:BN | E:BK | G:PK | J:GN | L:BU
O:VT | P:WH | R:RD | S:GY | T:YE

14.003



C:GN | E:PK | G:RD | J:VT | M:BN
N:YE | O:GY | P:BK | R:WH | U:BU

19.001



A:WH/GY | B:WH/YE | C:GN | D:RD | E:GY/PK | F:PK
G:RD/BU | H:BK | J:BN/GN | K:YE/BN | L:GY/BN | M:BN
N:YE | O:GY | P:WH/GN | R:WH | S:VT | U:BU

W

MK

C

E

C

U

19-

L

.001-

3 /

S370

Cable quality

Cable length [m]

Allocation-code

Connection  L: Soldering-contacts, C: Crimp-contacts

Poles

Molded

Round connector M23x1

Locking mechanism stainless steel

Field-wireable 

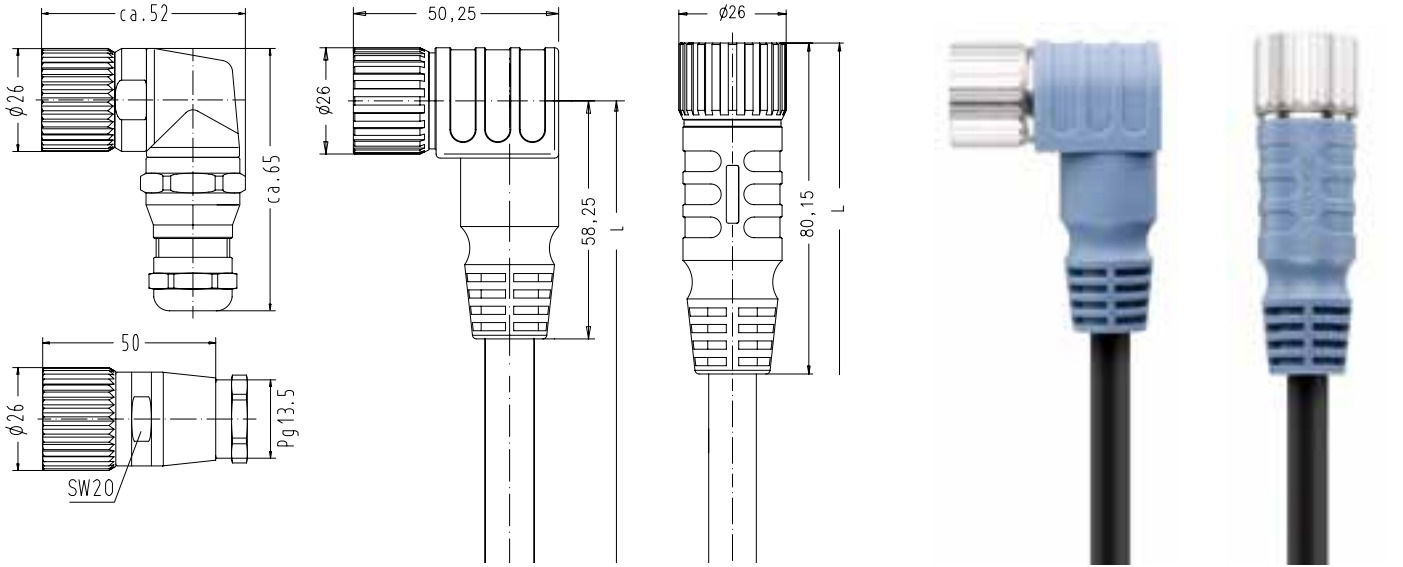
female

W: angled  without: straight 

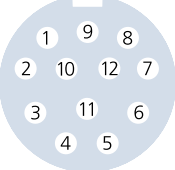
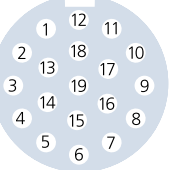
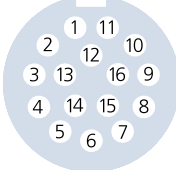


Product line	Version	Poles. allocation	Cable quality	Type-designation		2m	Cable length m	
						5m	10m	
M23x1	f ↑	12.001	PUR S370 [®]	MKCU12.001-m/S370		8027363	8026032	8026033
		12.003		MKCU12.003-m/S370		8026243	8026039	8026041
		19.001		MKCU19.001-m/S370		8027364	8026036	8026037
		19.003		MKCU19.003-m/S370		8027365	8017221	8017222
	f ↗	12.001	WMKCU12.001-m/S370		8027366	8026043	8026044	
		12.003	WMKCU12.003-m/S370		8026244	8026049	8026050	
		19.001	WMKCU19.001-m/S370		8027368	8026046	8026047	
		19.003	WMKCU19.003-m/S370		8027370	8017111	8017112	
	f ↑ 	12	Crimp-contacts	MKCC12C	8017132			
		16		MKCC16C	8017131			
		19		MKCC19C	8017130			
	f ↑ 	12	Soldering-contacts	MKCC12L	8013694			
16		MKCC16L		8013695				
19		MKCC19L		8013696				
f ↗ 	12	Crimp-contacts	WMKCC12C	8017156				
	16		WMKCC16C	8017155				
	19		WMKCC19C	8017154				
f ↗ 	12	Soldering-contacts	WMKCC12L	8017153				
	16		WMKCC16L	8017152				
	19		WMKCC19L	8017151				

Other versions and cable-lengths are available upon request.



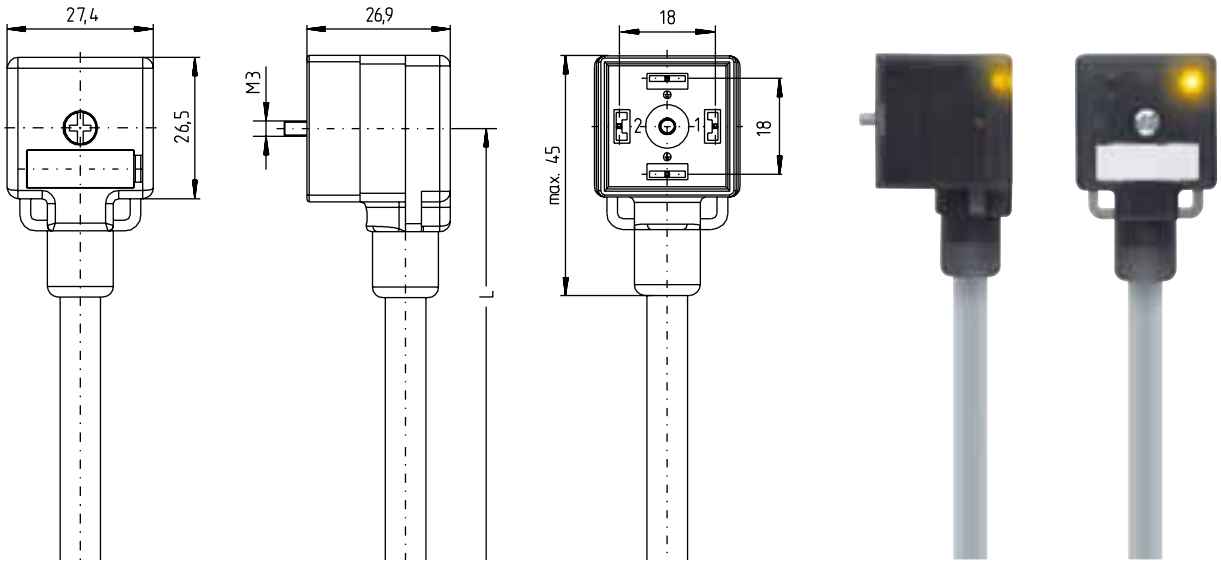
M23x1 female

Technical data	Round connector		Field-wireable 			
	Poles	Value	Poles	Value		
Rated voltage [Umax]	12, 19	125V	12, 16, 19	125V		
Current load [Imax]	12	8A contacts 10,11,12	12	8A contacts 10,11,12		
	19	10A contacts 10,11,12	19	10A contacts 10,11,12		
	12, 19	4A other contacts	12, 19	4A other contacts		
Insulation resistance		≥10 ⁸ Ω		≥10 ⁸ Ω		
Standards		IEC 61076-2-101		IEC 61076-2-101		
Materials	Grip	TPU, BU	Grip	CuZn, nickel-, silver-plated		
	Contact carrier	PBT, WH	Contact carrier	PBT, GY		
	Sealing	NBR	Sealing	NBR		
	Contacts	CuZn, gold-plated	Contacts	CuZn, gold-plated		
	Locking mechanism	CuZn, nickel-plated	Locking mechanism	CuZn, nickel-plated		
Ambient temperature		-30°C...+90°C		-40°C...+125°C		
Degree of pollution		3		3		
Protection class (in threaded condition)		IP67		IP67		
Mechanical life cycle		>100 mating cycles		>100 mating cycles		
Core cross-section/Clamping ability	12 poles: 10,11,12	1mm ²	12 poles: 10,11,12	0.75...1.0mm ²		
	19-poles: 6,12,19	1mm ²	19-poles: 6,12,19	0.75...1.0mm ²		
	others	0.34mm ²	others	0.5...0.75mm ²		
External diameter of the cable				6...12mm		
Pinning female						
12 poles		19 poles	16 poles 			
						
.001 1:WH 2:GN 3:YE 4:GY 5, 6, 7, 8, 9: free 10:BU 11:BN 12:GN/YE		1, 2, 9, 10, 11,13, 17, 18: free 3:GY 4:RD/BU 5:GN 6:BU 7:GY/PK 8:WH/GN 12:GNYE 14:BN/GN 15:WH 16:YE 19:BN				
.003 1:WH 2:GN 3:YE 4:GY 5:PK 6:RD 7:BK 8:VT 9: free 10:BU 11:BN 12:GN/YE		1:VT 2: RD 3:GY 4:RD/BU 5:GN 6:BU 7:GY/PK 8:WH/GN 9:WH/YE 10:WH/GY 11:BK 12:GNYE 13:YE/BN 14:BN/GN 15:WH 16:YE 17:PK 18:GYBN 19:BN				

V	A	21-	24.	0-	m /	S370
						Cable quality
						Cable length [m]
						Protective circuit (0 1 2 3 5)
						Disposal of working voltage: 24Vdc 24VAC/DC 230VAC/DC
						21: 2 contacts+PE 22: 2 contacts+PE jumpered 31: 3 contacts+PE 41: 3 contacts+PE+Wire-connection (pressure switch)
						Type A
Valve connector V: PE across from cable dispatch (0°)						

Type	Voltage	Circuit	Contacts	Cable quality	Type-designation	2m	Cable length m	
							5m	10m
A	24VAC/DC	1	2+PE jumpered	PUR S370 [®]	VA22-24.1-m/S370	8050501	8047803	8048240
		3	2+PE jumpered		VA22-24.3-m/S370	8050293	8047804	8048527
		2	3+PE wire		VA41-24.2-m/S370	8050500	8047805	8049933
	230VAC/DC	0	2+PE	PVC P00	VA21-230.0-m/S370	8050753	8047806	8050754
		0	2+PE jumpered		VA22-230.0-m/S370	8052299	8052300	8052301
		5	2+PE jumpered		VA22-230.5-m/S370	8050755	8046704	8050756
	24VAC/DC	1	2+PE jumpered	PVC P00	VA22-24.1-m/P00	8050819	8048818	8050820
		3	2+PE jumpered		VA22-24.3-m/P00	8048840	8048839	8049537
		2	3+PE wire		VA41-24.2-m/P00	8050822	8049310	8050540
	230VAC/DC	0	2+PE	PVC P01 [®]	VA21-230.0-m/P00	8048838	8048841	8050824
		0	2+PE jumpered		VA22-230.0-m/P00	8052302	8052303	8052304
		5	2+PE jumpered		VA22-230.5-m/P00	8050827	8048819	8050828
	24VAC/DC	1	2+PE jumpered	PVC P01 [®]	VA22-24.1-m/P01	8050861	8046613	8050862
		3	2+PE jumpered		VA22-24.3-m/P01	8049306	8047821	8050863
		2	3+PE wire		VA41-24.2-m/P01	8050865	8047822	8050866
	230VAC/DC	0	2+PE		VA21-230.0-m/P01	8050873	8047823	8050874
		0	2+PE jumpered		VA22-230.0-m/P01	8052305	8052306	8052307
		5	2+PE jumpered		VA22-230.5-m/P01	8050875	8047824	8050876

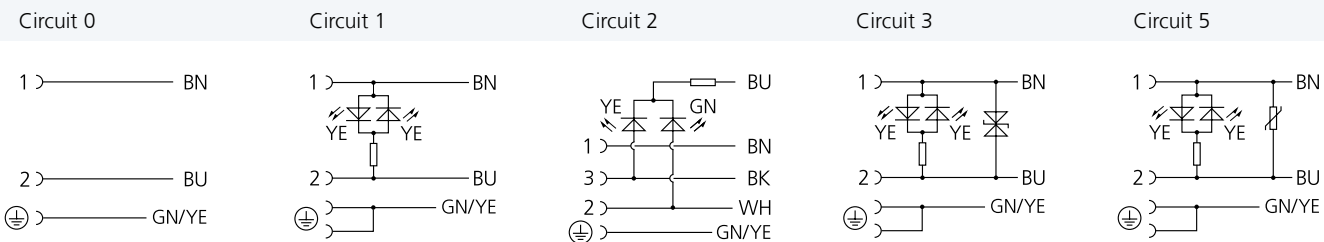
Other versions and cable-lengths are available upon request.



Valve connector type A

Technical data

Current load [Imax]	4A
Standards	DIN EN 175301-803
Materials	Grip: TPU, BK Contact carrier: PA, BK Sealing: TPU Contacts: CuSn, silver-plated Fastening screw: CuZn, nickel-plated
Ambient temperature	-30°C...+90°C
Degree of pollution	3
Protection class (installed)	IP67, IP69K
Mechanical life cycle	>100 mating cycles



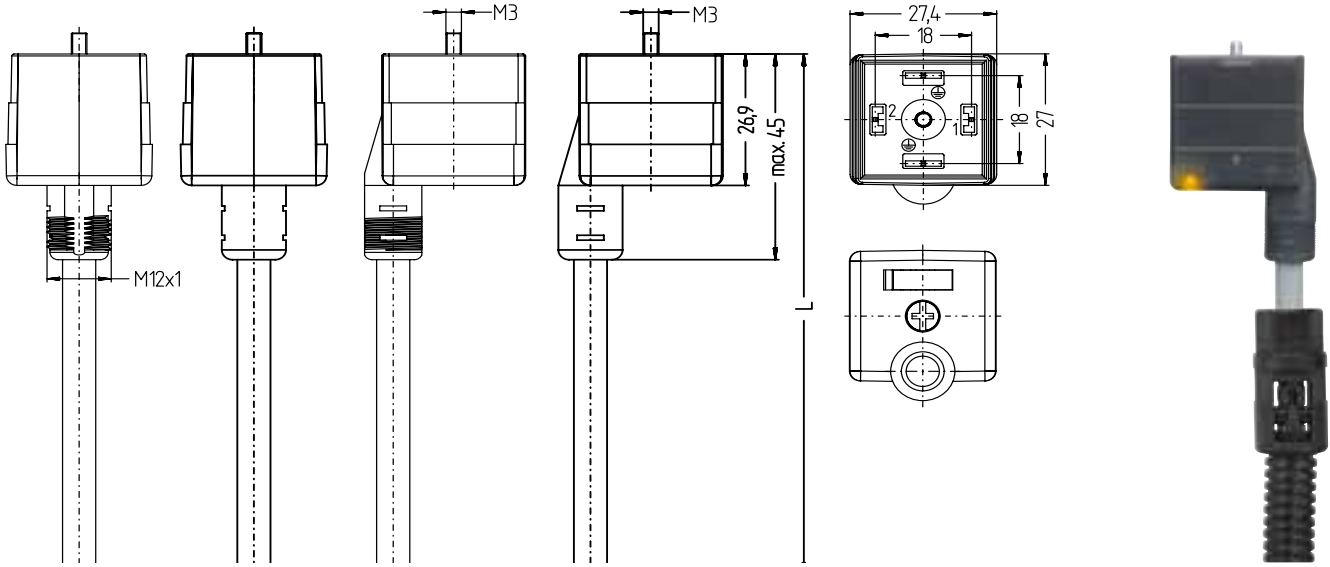
V	A	A	G	21-	24.	0-	m /	S370
								Cable quality
								Cable length [m]
								Protective circuit (0 1 2 3 5)
								Disposal of working voltage: 24V _{DC} 24V _{AC/DC} 230V _{AC/DC}
								21: 2 contacts+PE 22: 2 contacts+PE jumpered 31: 3 contacts+PE
								41: 3 contacts+PE +Wire-connection (pressure switch)
								Grip with thread for protective tubing
								Straight
								Type A

Valve connector V: PE across from cable dispatch (0°)



Type	Voltage	Circuit	Contacts	Cable quality	Type-designation	2m	Cable length m	
							5m	10m
AA	24V _{AC/DC}	1	2+PE jumpered	PUR S370 [®]	VAA22-24.1-m/S370	8055648	8055649	8055650
		3	2+PE jumpered		VAA22-24.3-m/S370	8055654	8055655	8055656
		2	3+PE wire		VAA41-24.2-m/S370	8055660	8055661	8055662
	24V _{DC}	2	3+PE wire	PVC P00	VAA41-24.2-m/S370	8055660	8055661	8055662
		0	2+PE		VAA21-230.0-m/S370	8055720	8055721	8055722
		5	2+PE jumpered		VAA22-230.5-m/S370	8055666	8055671	8055667
	24V _{AC/DC}	1	2+PE jumpered	PVC P00	VAA22-24.1-m/P00	8055672	8055673	8055674
		3	2+PE jumpered		VAA22-24.3-m/P00	8055679	8055680	8055678
		2	3+PE wire		VAA41-24.2-m/P00	8055685	8055686	8055684
	230V _{AC/DC}	0	2+PE	PVC P01 [®]	VAA21-230.0-m/P00	8055726	8055727	8055728
		5	2+PE jumpered		VAA22-230.5-m/P00	8055690	8055691	8055692
		1	2+PE jumpered		VAA22-24.1-m/P01	8055696	8055697	8055698
AAG	24V _{AC/DC}	1	2+PE jumpered	PUR S370 [®]	VAA22-24.1-m/P01	8055701	8055702	8055703
		3	2+PE jumpered		VAA22-24.3-m/P01	8055701	8055702	8055703
		2	3+PE wire		VAA41-24.2-m/P01	8055707	8055708	8055709
	24V _{DC}	2	3+PE wire	PVC P00	VAA41-24.2-m/P01	8055707	8055708	8055709
		0	2+PE		VAA21-230.0-m/P01	8055732	8055733	8055734
		5	2+PE jumpered		VAA22-230.5-m/P01	8055712	8055713	8055714
	230V _{AC/DC}	0	2+PE	PVC P00	VAA21-230.0-m/P01	8055732	8055733	8055734
		5	2+PE jumpered		VAA22-230.5-m/P01	8055712	8055713	8055714
		1	2+PE jumpered		VAA22-24.1-m/P00	8055651	8055652	8055653
	24V _{AC/DC}	1	2+PE jumpered	PVC P00	VAA22-24.1-m/P00	8055651	8055652	8055653
		3	2+PE jumpered		VAA22-24.3-m/S370	8055657	8055658	8055659
		2	3+PE wire		VAA41-24.2-m/S370	8055663	8055664	8055665
	24V _{DC}	2	3+PE wire	PVC P01 [®]	VAA41-24.2-m/S370	8055663	8055664	8055665
		0	2+PE		VAAG21-230.0-m/S370	8055723	8055724	8055725
		5	2+PE jumpered		VAAG22-230.5-m/S370	8055668	8055669	8055670
	230V _{AC/DC}	0	2+PE	PVC P00	VAAG21-230.0-m/S370	8055668	8055669	8055670
		5	2+PE jumpered		VAAG22-230.5-m/S370	8055668	8055669	8055670
		1	2+PE jumpered		VAAG22-24.1-m/P00	8055677	8055675	8055678
	24V _{AC/DC}	1	2+PE jumpered	PVC P00	VAAG22-24.1-m/P00	8055677	8055675	8055678
		3	2+PE jumpered		VAAG22-24.3-m/P00	8055682	8055683	8055681
		2	3+PE wire		VAAG41-24.2-m/P00	8055688	8055689	8055687
	24V _{DC}	2	3+PE wire	PVC P01 [®]	VAAG41-24.2-m/P00	8055688	8055689	8055687
		0	2+PE		VAAG21-230.0-m/P00	8055729	8055730	8055731
		5	2+PE jumpered		VAAG22-230.5-m/P00	8055693	8055694	8055695
	230V _{AC/DC}	0	2+PE	PVC P01 [®]	VAAG21-230.0-m/P00	8055693	8055694	8055695
		5	2+PE jumpered		VAAG22-230.5-m/P00	8055693	8055694	8055695
		1	2+PE jumpered		VAAG22-24.1-m/P01	8055699	8055700	8055718
	24V _{AC/DC}	1	2+PE jumpered	PVC P01 [®]	VAAG22-24.1-m/P01	8055699	8055700	8055718
		3	2+PE jumpered		VAAG22-24.3-m/P01	8055704	8055705	8055706
		2	3+PE wire		VAAG41-24.2-m/P01	8055719	8055710	8055711
	230V _{AC/DC}	0	2+PE	PVC P01 [®]	VAAG21-230.0-m/P01	8055735	8055736	8055737
		5	2+PE jumpered		VAAG22-230.5-m/P01	8055715	8055716	8055717

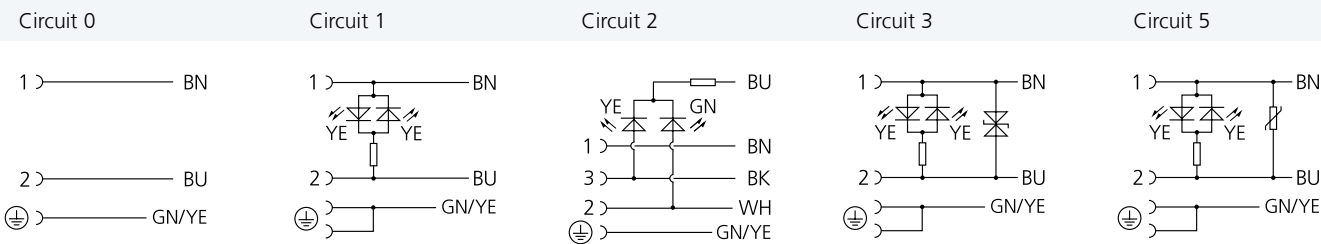
Other versions and cable-lengths are available upon request.



Valve connector type A straight

Technical data

Current load [I _{max}]	4A
Standards	DIN EN 175301-803
Materials	Grip: TPU, BK Contact carrier: PA, BK Sealing: TPU Contacts: CuSn, silver-plated Fastening screw: CuZn, nickel-plated
Ambient temperature	-30°C...+90°C
Degree of pollution	3
Protection class (installed)	IP67, IP69K
Mechanical life cycle	>100 mating cycles



V

A

22-

24.

3-

m1 /

D

A

22-

24.

3-

m2 /

S370

Cable quality

m2: Cable length m2 [m]

WAS5.132: M12x1-connection

Protective circuit

Disposal of working voltage: 24VAC/DC

22: 2 contacts+PE jumpered

Type A

Double-Valve connector

m1: Cable length m1 [m]

Protective circuit

Disposal of working voltage: 24VAC/DC

22: 2 contacts+PE jumpered

Type A

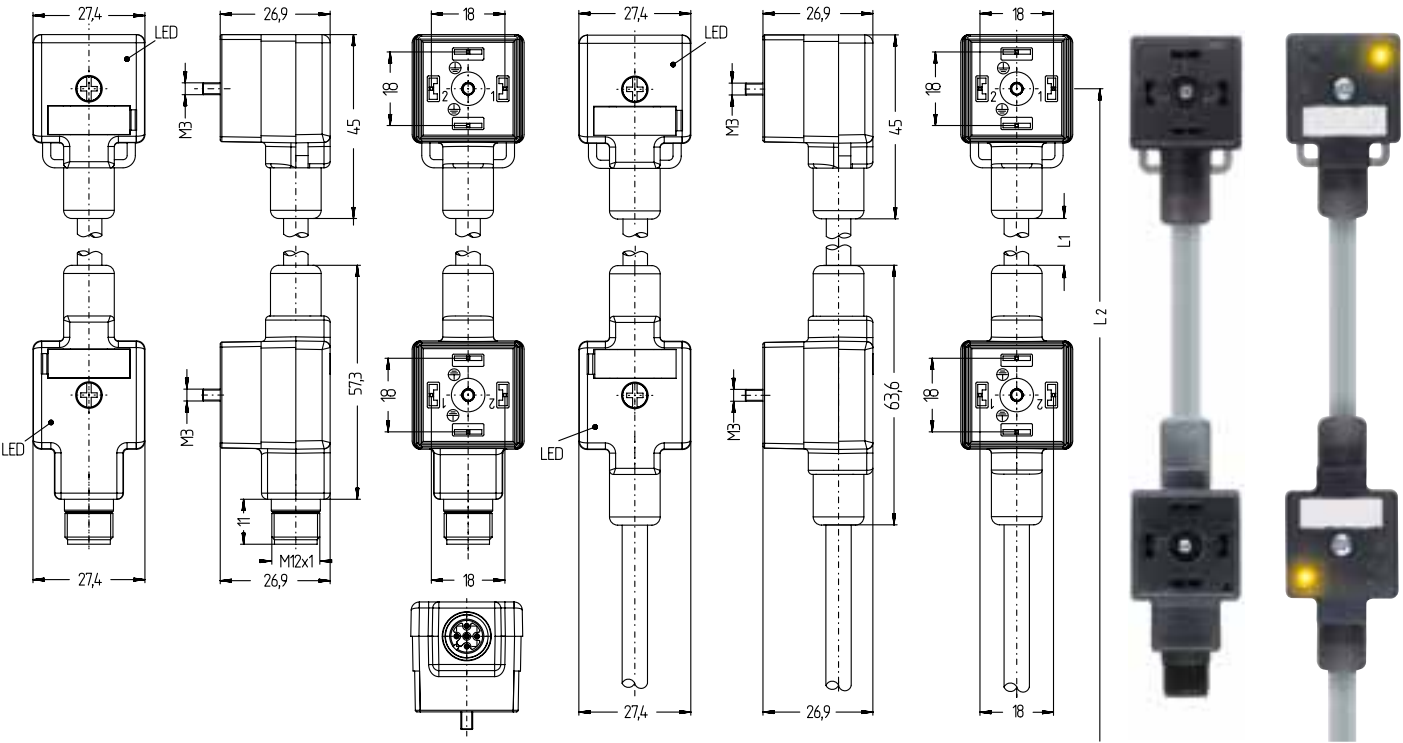
Valve connector V: PE across from cable dispatch (0°)



Type	m1	Voltage	Circuit	Contacts	Cable quality	Type-designation	2m	Cable length m2 5m	Cable length m2 10m
A..D	0.15m	24VAC/DC	3	2+PE jumpered	PUR S370 [®]	VA22-24.3-0,15-DA22-24.3-m/S370	8055743	8055744	8055745
					PVC P00	VA22-24.3-0,15-DA22-24.3-m/P00	8055749	8055750	8055751
					PVC P01 [®]	VA22-24.3-0,15-DA22-24.3-m/P01	8055755	8055756	8055757
A..D	0.40m	24VAC/DC	3	2+PE jumpered	PUR S370 [®]	VA22-24.3-0,4-DA22-24.3-m/S370	8055746	8055747	8055748
					PVC P00	VA22-24.3-0,4-DA22-24.3-m/P00	8055752	8055753	8055754
					PVC P01 [®]	VA22-24.3-0,4-DA22-24.3-m/P01	8055758	8055759	8055760

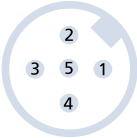
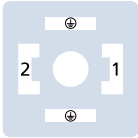
Type	m1	Voltage	Circuit	Contacts	Cable quality	Type-designation	M12x1
A..D	0.15m	24VAC/DC	3	2+PE jumpered	PUR S370 [®]	VA22-24.3-0,15-DA22-24.3-WAS5.132/S370	8055761
					PVC P00	VA22-24.3-0,15-DA22-24.3-WAS5.132/P00	8055763
					PVC P01 [®]	VA22-24.3-0,15-DA22-24.3-WAS5.132/P01	8055765
A..D	0.40m	24VAC/DC	3	2+PE jumpered	PUR S370 [®]	VA22-24.3-0,4-DA22-24.3-WAS5.132/S370	8055762
					PVC P00	VA22-24.3-0,4-DA22-24.3-WAS5.132/P00	8055764
					PVC P01 [®]	VA22-24.3-0,4-DA22-24.3-WAS5.132/P01	8055766

Other versions and cable-lengths are available upon request.



Double-Valve connector

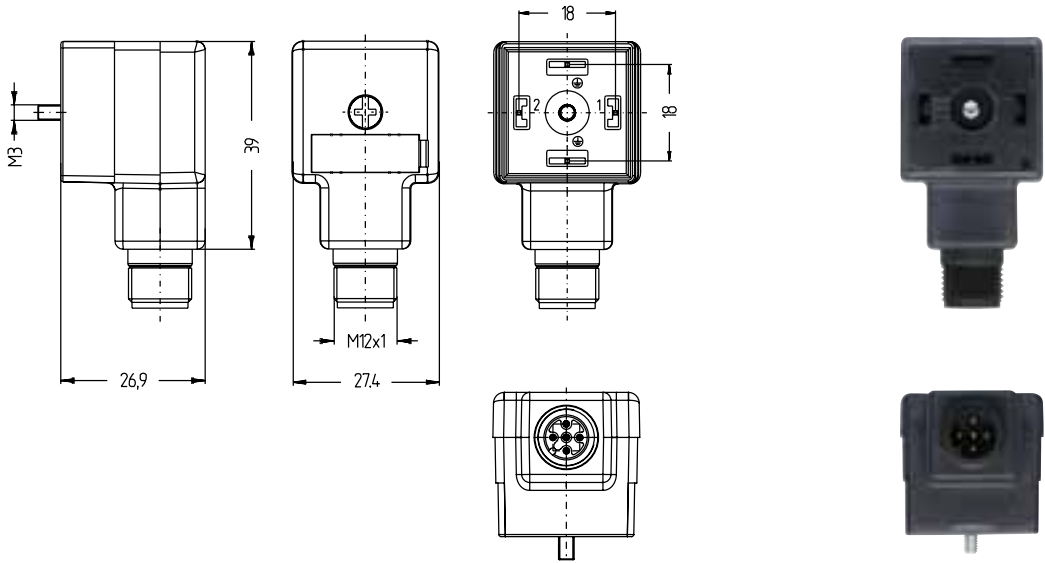
Technical data		Valve connector
Current load [Imax]		4A
Standards		DIN EN 175301-803
Materials	Grip	TPU, BK
	Contact carrier	PA, BK
	Sealing	TPU
	Contacts	CuSn, silver-plated
	Fastening screw	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (installed)		IP67, IP69K
Mechanical life cycle		>100 mating cycles
Pinning Valve connector		Pinning M12x1 <i>male</i>
2 contacts+PE jumpered		5.162



Protective circuit Wire-connection	M12x1-connection

V	A	21-	24.	0-	WAS	5.002
						Contacts.Allocation-code
						Round connector M12x1 WAS: <i>male</i>
						Protective circuit (0 1 2 3)
						Disposal of working voltage: 24Vdc 24VAC/DC 230VAC/DC
						22: 2 contacts+PE jumpered 41: 3 contacts+PE+Wire-connection (pressure switch)
						Type A
Valve connector V: PE across from cable dispatch (0°)						

Type	Voltage	Circuit	Contacts	Type-designation	Order-No.
A_M12x1	24VAC/DC	1	2+PE jumpered	VA22-24.1-WAS5.002	8055767
		3	2+PE jumpered	VA22-24.3-WAS5.002	8055768
	24Vdc	2	3+PE wire	VA41-24.2-WAS5	8055769
	230VAC/DC	0	2+PE jumpered	VA22-230.0-WAS5.002	8055770
Other versions are available upon request.					



Adapter Valve connector_M12x1

Technical data

Current load [Imax]		4A
Standards		DIN EN 175301-803
Materials	Grip	TPU, BK
	Contact carrier	PA, BK
	Sealing	TPU
	Contacts	CuSn, silver-plated
	Fastening screw	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (installed)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

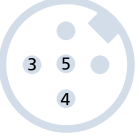
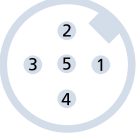
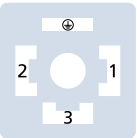
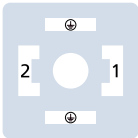
Pinning | Valve connector

2 contacts+PE jumpered 3 contacts+PE+wire

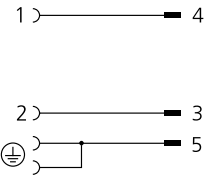
Pinning M12x1 | *male*

5

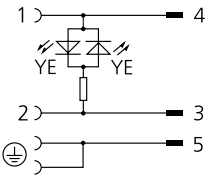
5.002



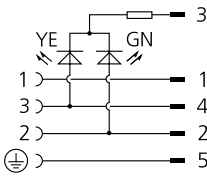
Circuit 0



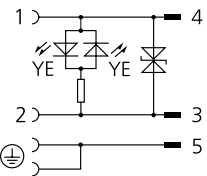
Circuit 1



Circuit 2



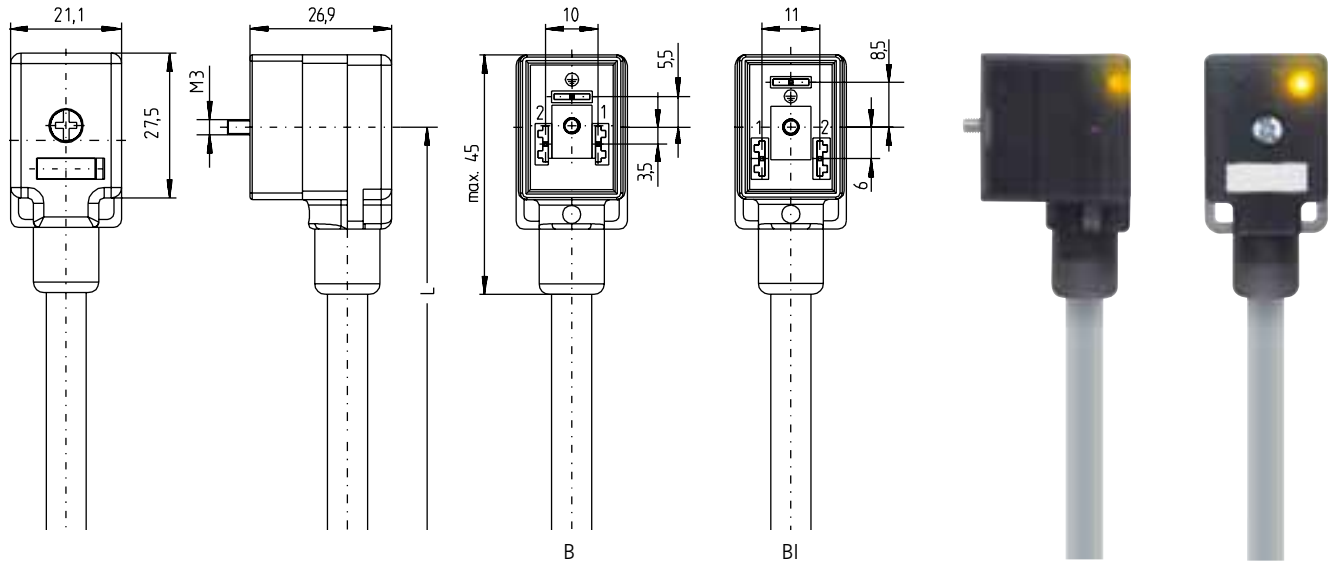
Circuit 3



V	B	21-	24.	0-	m /	S370
						Cable quality
						Cable length [m]
						Protective circuit (0 1 3 5)
						Disposal of working voltage: 24Vdc 24VAC/DC 230VAC/DC
						21: 2 contacts+PE 22: 2 contacts+PE jumpered 31: 3 contacts+PE 41: 3 contacts+PE + Wire-connection (pressure switch)
						Type B/BI
Valve connector V: PE across from cable dispatch (0°)						

Type	Voltage	Circuit	Contacts	Cable quality	Type-designation	2m	Cable length m	
							5m	10m
B	24VAC/DC	1	2+PE	PUR S370 [®]	VB21-24.1-m/S370	8049246	8047807	8050757
		3	2+PE		VB21-24.3-m/S370	8050758	8047808	8050759
		5	2+PE		VB21-230.5-m/S370	8050762	8047810	8050763
	230VAC/DC	0	2+PE	PVC P00	VB21-230.0-m/S370	8050760	8047809	8050761
		5	2+PE		VB21-230.5-m/S370	8050762	8047810	8050763
		5	2+PE		VB21-230.5-m/S370	8050762	8047810	8050763
	24VAC/DC	1	2+PE	PVC P00	VB21-24.1-m/P00	8050829	8049311	8050830
		3	2+PE		VB21-24.3-m/P00	8048844	8048845	8050832
		5	2+PE		VB21-230.5-m/P00	8050835	8049312	8050836
	230VAC/DC	0	2+PE	PVC P00	VB21-230.0-m/P00	8048842	8048843	8050834
		5	2+PE		VB21-230.5-m/P00	8050835	8049312	8050836
		5	2+PE		VB21-230.5-m/P00	8050835	8049312	8050836
BI	24VAC/DC	1	2+PE	PUR S370 [®]	VB21-24.1-m/S370	8050877	8047825	8050878
		3	2+PE		VB21-24.3-m/P01	8050879	8047826	8050880
		5	2+PE		VB21-230.5-m/P01	8050883	8047828	8050884
	230VAC/DC	0	2+PE	PVC P01 [®]	VB21-230.0-m/P01	8050881	8047827	8050882
		5	2+PE		VB21-230.5-m/P01	8050883	8047828	8050884
		5	2+PE		VB21-230.5-m/P01	8050883	8047828	8050884
	24VAC/DC	1	2+PE	PVC P01 [®]	VB21-24.1-m/P01	8050877	8047825	8050878
		3	2+PE		VB21-24.3-m/P01	8050879	8047826	8050880
		5	2+PE		VB21-230.5-m/P01	8050883	8047828	8050884
	230VAC/DC	0	2+PE	PVC P01 [®]	VB21-230.0-m/P01	8050881	8047827	8050882
		5	2+PE		VB21-230.5-m/P01	8050883	8047828	8050884
		5	2+PE		VB21-230.5-m/P01	8050883	8047828	8050884
	24VAC/DC	1	2+PE	PVC P00	VBI21-24.1-m/P00	8050838	8049313	8050538
		3	2+PE		VBI21-24.3-m/P00	8050855	8048820	8050856
		5	2+PE		VBI21-230.5-m/P00	8050767	8047814	8050768
	230VAC/DC	0	2+PE	PVC P00	VBI21-230.0-m/P00	8050857	8049314	8050858
		5	2+PE		VBI21-230.5-m/P00	8050859	8048821	8050860
		5	2+PE		VBI21-230.5-m/P00	8050859	8048821	8050860
	24VAC/DC	1	2+PE	PVC P01 [®]	VBI21-24.1-m/P01	8050899	8047829	8050900
		3	2+PE		VBI21-24.3-m/P01	8050901	8047830	8050902
		5	2+PE		VBI21-230.5-m/P01	8050903	8047831	8050905
	230VAC/DC	0	2+PE	PVC P01 [®]	VBI21-230.0-m/P01	8050904	8047831	8050905
		5	2+PE		VBI21-230.5-m/P01	8050906	8047832	8050907
		5	2+PE		VBI21-230.5-m/P01	8050906	8047832	8050907

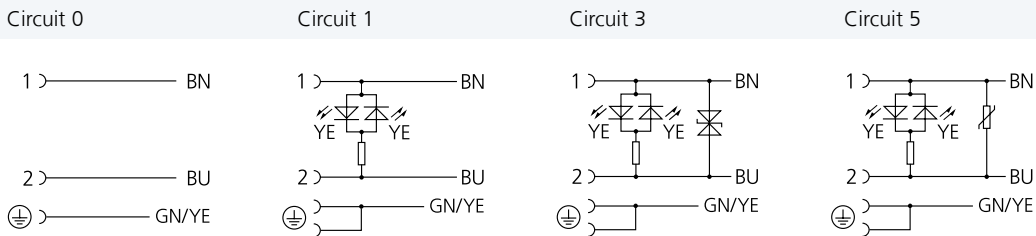
Other versions and cable-lengths are available upon request.



Valve connector type B | BI

Technical data

Current load [Imax]	4A
Standards	DIN EN 175301-803
Materials	Grip: TPU, BK Contact carrier: PA, BK Sealing: TPU Contacts: CuSn, silver-plated Fastening screw: CuZn, nickel-plated
Ambient temperature	-30°C...+90°C
Degree of pollution	3
Protection class (installed)	IP67, IP69K
Mechanical life cycle	>100 mating cycles



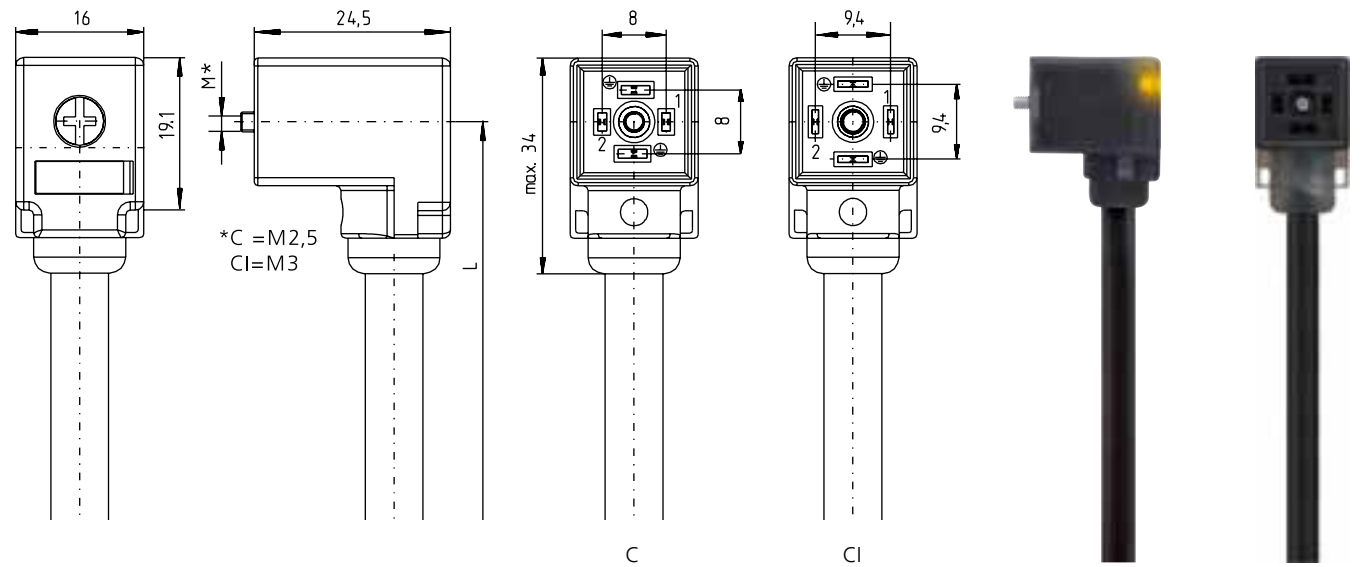
V	C	21-	24.	0-	m /	S370
						Cable quality
						Cable length [m]
						Protective circuit (0 1 4)
						Disposal of working voltage: 24Vdc 24VAC/DC 230VAC/DC
						21: 2 contacts+PE 22: 2 contacts+PE jumpered 31: 3 contacts+PE
						Type C/CI

Valve connector V: PE across from cable dispatch (0°)



Type	Voltage	Circuit	Contacts	Cable-quality	Type-designation	2m	Cable length m	
							5m	10m
C	24VAC/DC	1	2+PE jumpered	PUR S370 [®]	VC22-24.1-m/S370	8050769	8047815	8050770
		4	2+PE jumpered		VC22-24.4-m/S370	8049873	8047816	8050771
	230VAC/DC	0	2+PE	PVC P00	VC21-230.0-m/S370	8050772	8047817	8050773
	24VAC/DC	1	2+PE jumpered		VC22-24.1-m/P00	8050842	8049315	8050843
		4	2+PE jumpered	PVC P01 [®]	VC22-24.4-m/P00	8050844	8049316	8050845
	230VAC/DC	0	2+PE		VC21-230.0-m/P00	8050846	8049317	8050848
	24VAC/DC	1	2+PE jumpered	PVC P01 [®]	VC22-24.1-m/P01	8050909	8047833	8050910
		4	2+PE jumpered		VC22-24.4-m/P01	8050912	8047834	8050913
	230VAC/DC	0	2+PE	PVC P01 [®]	VC21-230.0-m/P01	8050914	8047835	8050916
	24VAC/DC	1	2+PE jumpered		VC122-24.1-m/S370	8050774	8047818	8050775
		4	2+PE jumpered		VC122-24.4-m/S370	8050776	8047819	8050777
	230VAC/DC	0	2+PE		VCI21-230.0-m/S370	8050778	8047820	8050779
CI	24VAC/DC	1	2+PE jumpered	PUR S370 [®]	VC122-24.1-m/P00	8050849	8049318	8050850
		4	2+PE jumpered		VC122-24.4-m/P00	8050851	8049319	8050852
	230VAC/DC	0	2+PE	PVC P00	VC121-230.0-m/P00	8050853	8049320	8050854
	24VAC/DC	1	2+PE jumpered		VC122-24.1-m/P01	8050917	8047836	8050918
		4	2+PE jumpered	PVC P01 [®]	VC122-24.4-m/P01	8050919	8047837	8050920
	230VAC/DC	0	2+PE		VCI21-230.0-m/P01	8050921	8047838	8050922

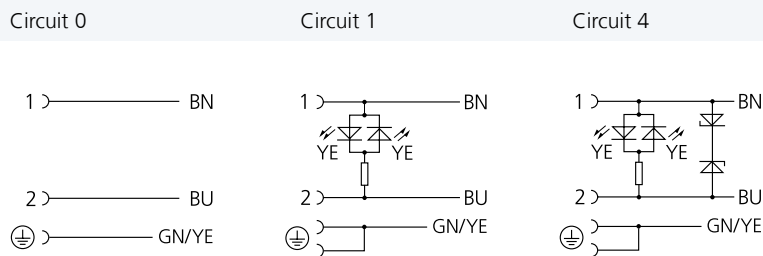
Other versions and cable-lengths are available upon request.



Valve connector type C | CI

Technical data

Current load [Imax]	4A
Standards	DIN EN 175301-803
Materials	Grip Contact carrier Sealing Contacts Fastening screw
	TPU, BK PA, BK TPU CuSn, silver-plated CuZn, nickel-plated
Ambient temperature	-30°C...+90°C
Degree of pollution	3
Protection class (installed)	IP67, IP69K
Mechanical life cycle	>100 mating cycles



MB – SSP 4 – 2 SKP 3 P3/ S00

Junction type MB

M8x1 screwable | *male*

Poles

2-way junction

M8x1 screwable | *female*

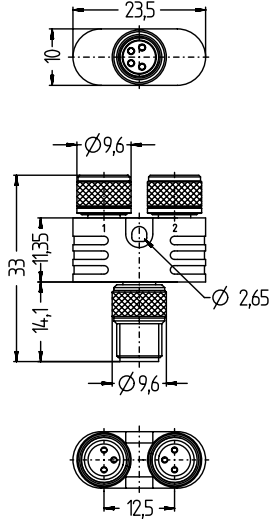
PNP | Quantity LEDs + circuit

Different locking nut to marking an output



Type	Output 0	Output 1	Output 2	Type-designation	Order-No.
MB_M8x1	M8x1 <i>m</i> 4	M8x1 <i>f</i> 3	M8x1 <i>f</i> 3	MB-SSP4-2SKP3/S56	8052222
MB_M8x1 LED	<i>m</i> 4	<i>f</i> 3	<i>f</i> 3	MB-SSP4-2SKP3P3/S56	8052223

Other versions are available upon request.



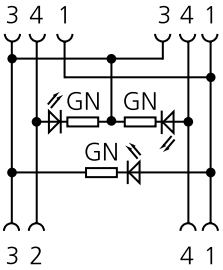
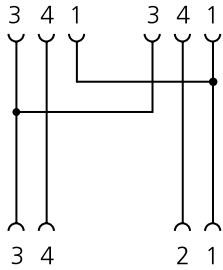
2-way junction | Type MB_M8x1

Technical data	Poles	Value
Rated voltage [U _{max}]	3, 4	30V
	LED-version	10...24V _{DC}
Current load [I _{max}]	3, 4	4A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BU LED-version: TPU, transparent
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
		(optional black-coated locking nut marking an output)
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

Pinning <i>male</i>	Pinning <i>female</i>
4 poles	3 poles



Wiring	4/3 poles LED
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MB -	FSM	5 -	2	FKM	5	P3/	S00
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Coated locking nut for marking an output

PNP | Quantity LEDs + wiring

Poles

M12x1 |

FSM: *male*

FKM: *female*

2-way junction

Poles

M12x1 |

FSM: *male*

FKM: *female*

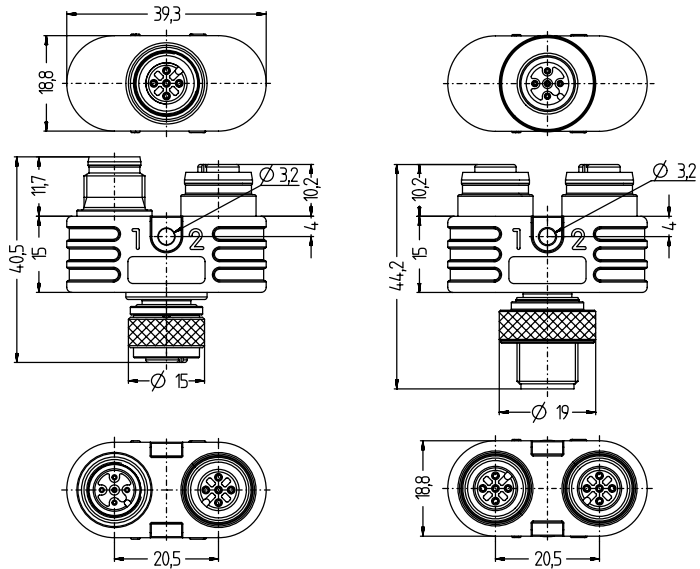
Junctions type MB



Type	Output 0	Output 1	Output 2	Type-designation	Order-No.
MB_ M12x1	M12x1 <i>f</i> 4+PE	M12x1 <i>m</i> 4+PE	M12x1 <i>f</i> 4+PE	MB-FKM5-FSM5-FKM5	8024976
	<i>m</i> 4+PE	<i>m</i> 4+PE	<i>f</i> 4+PE	MB-FSM5-FSM5-FKM5	8044611
	<i>m</i> 8	<i>f</i> 8	<i>f</i> 8	MB-FSM8-2FKM8	8028876
	<i>m</i> 4+PE	<i>f</i> 4	<i>f</i> 4	MB-FSM5-2FKM5.4	8024643

MB_ M12x1 LED	M12x1 <i>m</i> 4+PE	M12x1 <i>f</i> 4	M12x1 <i>f</i> 4	MB-FSM5-2FKM5.4P3	8024644
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Other versions are available upon request.



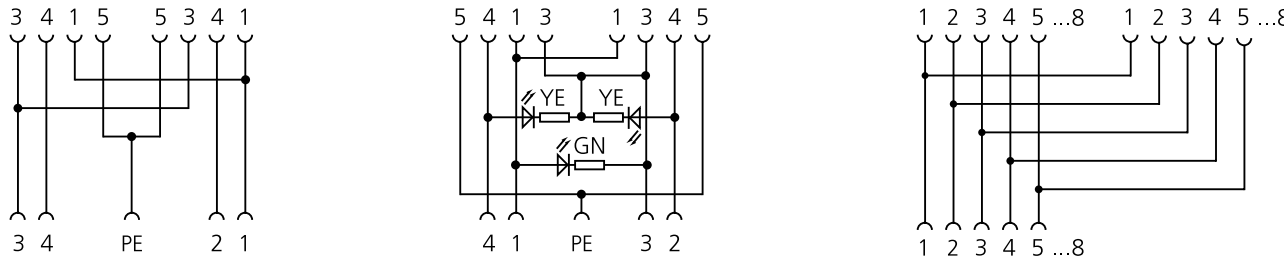
2-way junction | Type MB_M12x1

Technical data	Poles	Value
Rated voltage [Umax]	4, 4+PE	60V
	8	30V
	LED-version	10...24V _{DC}
Current load [Imax]	4, 4+PE	4A
	8	2A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BU LED-version: TPU, transparent
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

Coding A <i>male</i>			Coding A <i>female</i>		
4 poles	4 poles+PE	8 poles	4 poles	4 poles+PE	8 poles



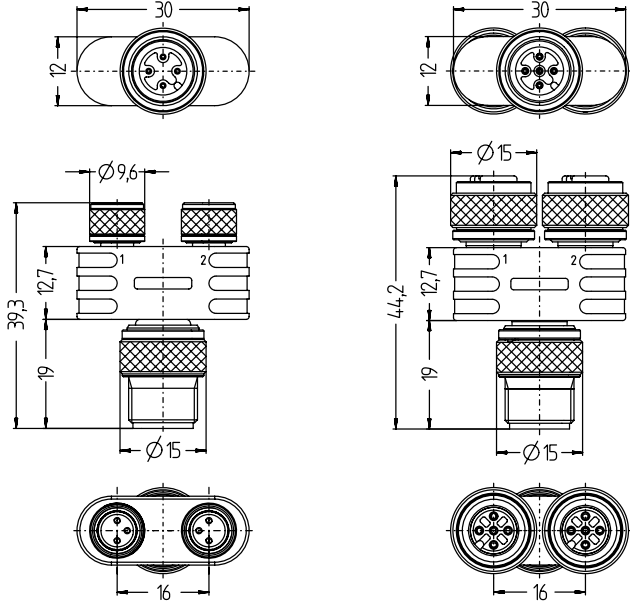
Wiring	4 poles+PE/4 poles LED	4poles+PE/4 poles+PE 8/8 poles
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FSM	5-	2	FKM	5.4	S55
					2-way junction type S55
					Poles + wiring
					M12x1 FKM: <i>female</i>
					M8x1 SKP: <i>female</i>
					2-way junction
					Poles
					M12x1 FSM: <i>male</i>

Type	Output 0		Output 1		Output 2		Type-designation	Order-No.
S55	M12x1	<i>m</i> 4+PE	M12x1	<i>f</i> 4	M12x1	<i>f</i> 4	FSM5-2FKM5.4/S55	8018720
	M12x1	<i>m</i> 4	M8x1	<i>f</i> 3	M8x1	<i>f</i> 3	FSM4-2SKP3/S55/S56	8052224

Other versions are available upon request.



2-way junction | Type S55

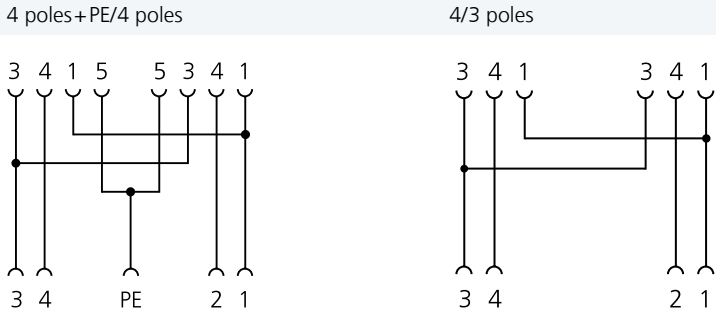
Technical data

Rated voltage [U _{max}]		60V
Current load [I _{max}]		4A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101/-104
Materials	Grip	TPU, BU
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

Pinning <i>male</i>		Pinning <i>female</i>	
M12x1 4 poles, A	M12x1 4 poles+PE, A	M12x1 4 poles, A	M8x1 3 poles



Wiring

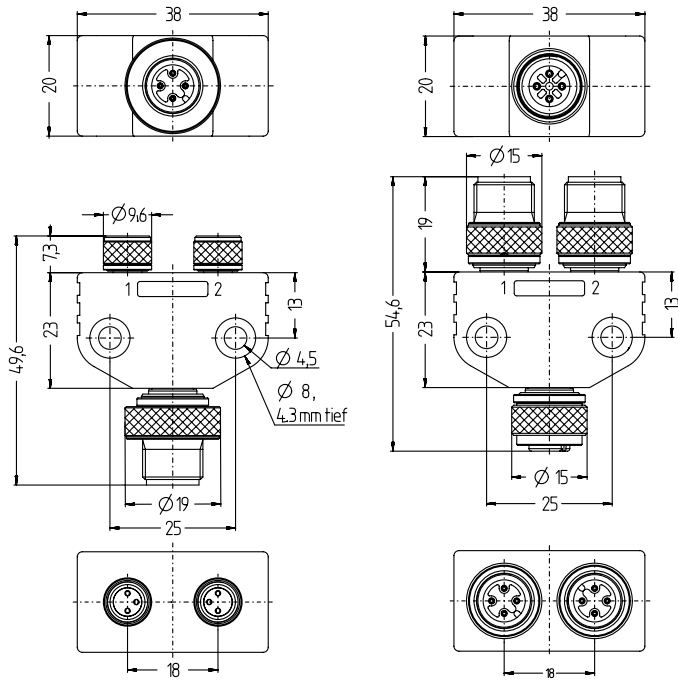


FSM	4-	2	FKM	3	P3/	S89
						2-way junction type S89
						PNP Quantity LEDs + wiring
						Poles
						M12x1 FSM: <i>male</i>
						FKM: <i>female</i>
						M8x1 SKP: <i>female</i>
						2-way junction
						Poles
						M12x1 FSM: <i>male</i>
						FKM: <i>female</i>



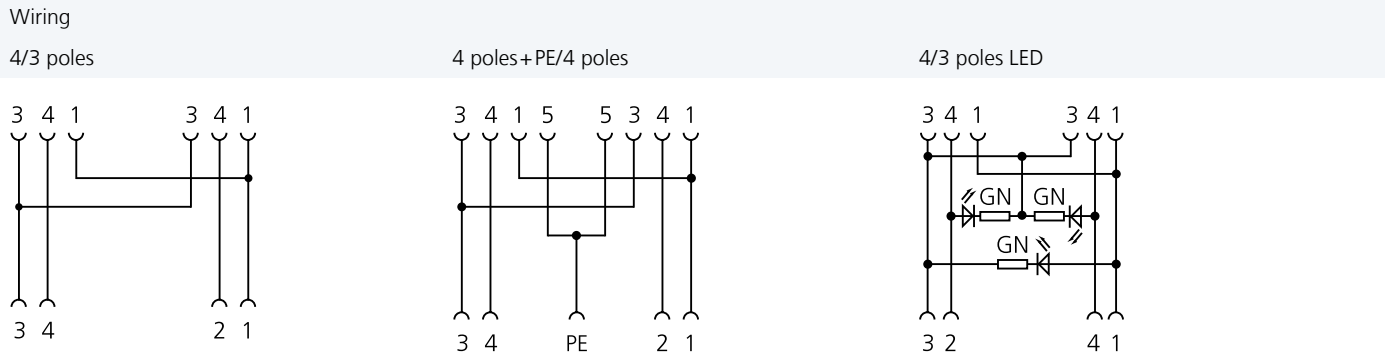
Type	Output 0		Output 1		Output 2		Type-designation	Order-No.
S89	M12x1	<i>f</i> 4	M12x1	<i>m</i> 3	M12x1	<i>m</i> 3	FKM4-2FSM3/S89	8012651
		<i>m</i> 4		<i>f</i> 3		<i>f</i> 3	FSM4-2FKM3/S89	8010464
		<i>m</i> 4+PE		<i>f</i> 4		<i>f</i> 4	FSM5-2FKM5.4/S89	8010471
S89 LED	M12x1	<i>m</i> 4	M8x1	<i>f</i> 3	M8x1	<i>f</i> 3	FSM4-2SKP3/S89	8013058
		<i>m</i> 4		<i>f</i> 3		<i>f</i> 3	FSM4-2FKM3P3/S89	8012652

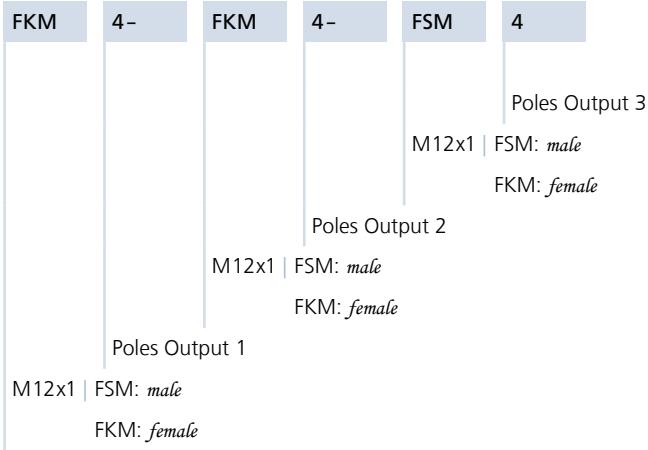
Other versions are available upon request.



2-way junction | Type S89

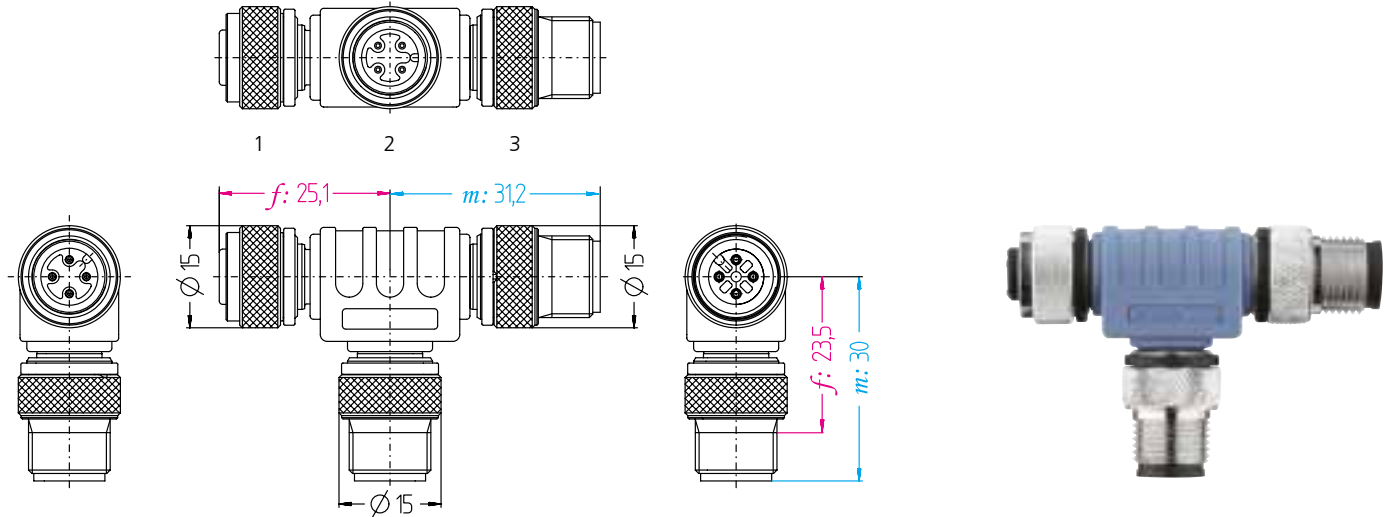
Technical data			Poles	Value		
Rated voltage [U _{max}]			M12x1 3, 4	250V		
			M12x1 4+PE	60V		
			M8x1 3	60V		
			LED-version	10...24V _{DC}		
Current load [I _{max}]			4A			
Insulation resistance			≥10 ⁸ Ω			
Standards			IEC 61076-2-101/-104			
Materials			Grip	TPU, BU LED-version: TPU, transparent		
			Contact carrier	TPU, BK		
			Sealing	FPM/FKM		
			Contacts	CuZn, gold-plated		
			Locking mechanism	CuZn, nickel-plated		
Ambient temperature			-30°C...+90°C			
Degree of pollution			3			
Protection class (in threaded condition)			IP67			
Mechanical life cycle			>100 mating cycles			
Pinning <i>male</i>			Pinning <i>female</i>			
M12x1 3 poles, A	M12x1 4 poles, A	M12x1 4 poles+PE, A	M12x1 3 poles, A	M12x1 4 poles, A	M8x1 3 poles	





Type	Output 1	Output 2	Output 3	Type-designation	Order-No.
T	M12x1 <i>f</i> 4	M12x1 <i>f</i> 4	M12x1 <i>m</i> 4	FKM4-FKM4-FSM4	8009675
	<i>f</i> 4	<i>m</i> 4	<i>m</i> 4	FKM4-FSM4-FSM4	8008139
	<i>f</i> 5	<i>f</i> 5	<i>m</i> 5	FKM5-FKM5-FSM5	8011661
	<i>f</i> 5	<i>m</i> 5	<i>m</i> 5	FKM5-FSM5-FSM5	8017792
	<i>f</i> 8	<i>f</i> 8	<i>m</i> 8	FKM8-FKM8-FSM8	8038856

Other versions are available upon request.



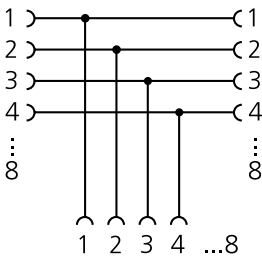
T-junction

Technical data	Poles	Value
Rated voltage [U _{max}]	4	250V
	5	60V
	8	30V
Current load [I _{max}]	4, 5	4A
	8	2A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BU
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		3
Protection class (in threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

Coding A <i>male</i>			Coding A <i>female</i>		
4 poles	5 poles	8 poles	4 poles	5 poles	8 poles



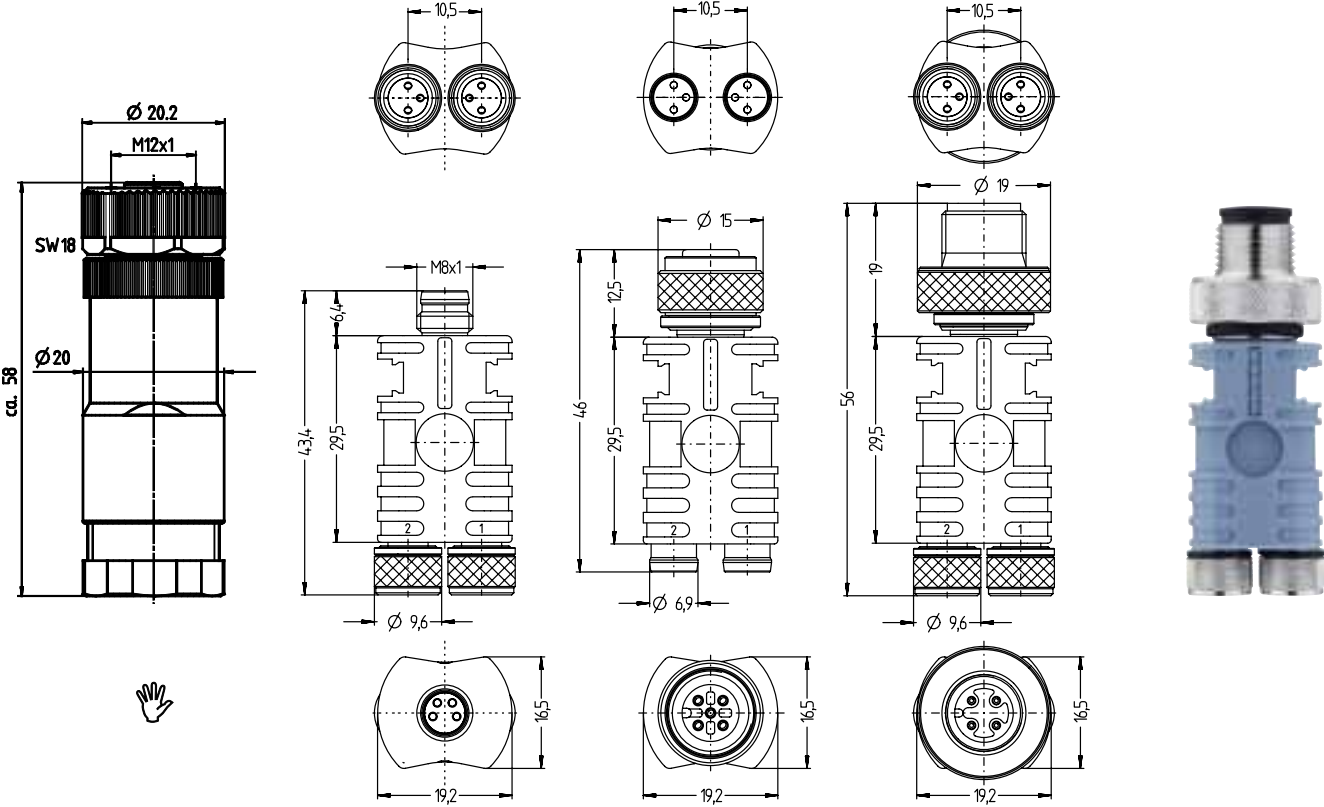
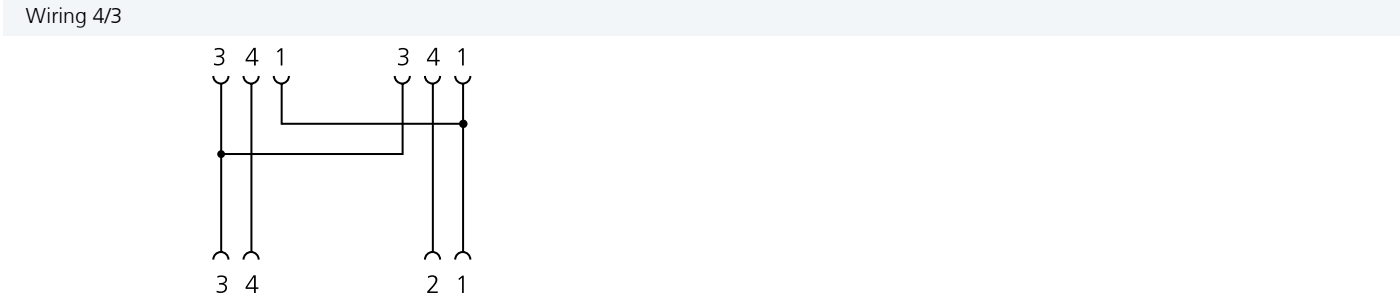
Wiring



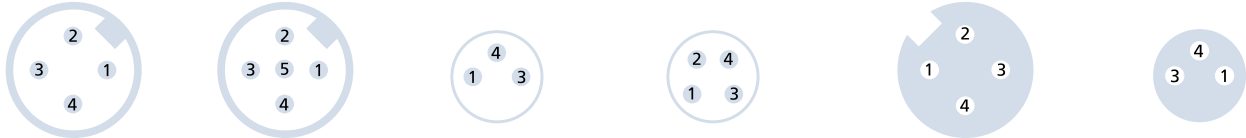
FKM	4-	2	SKP	3
				Poles
			M8x1	SKP: <i>female</i>
			Ø8mm snap	ESP: <i>male</i>
		Y-splitter		
	Poles			
M12x1	FKM: <i>female</i>			
	FSM: <i>male</i>			
	FSMC: <i>male</i> , field-wireable			
Ø8 snap	SESP: <i>male</i>			

Type	Output 0	Output 1	Output 2	Type-designation	Order-No.
Y	M12x1 <i>f</i> 4	Ø8 snap <i>m</i> 3	Ø8 snap <i>m</i> 3	FKM4-2ESP3S	8008080
	M12x1 <i>m</i> 4	M8x1 <i>f</i> 3	M8x1 <i>f</i> 3	FSM4-2SKP3	8008081
	Ø8 snap <i>m</i> 4	M8x1 <i>f</i> 3	M8x1 <i>f</i> 3	SESP4S-2SKP3	8008082
Y	M12x1 <i>m</i> 4	Screw-clamp		FSMC4K	8017231
	M12x1 <i>m</i> 5	Screw-clamp		FSMC5K	8032825

Other versions are available upon request.

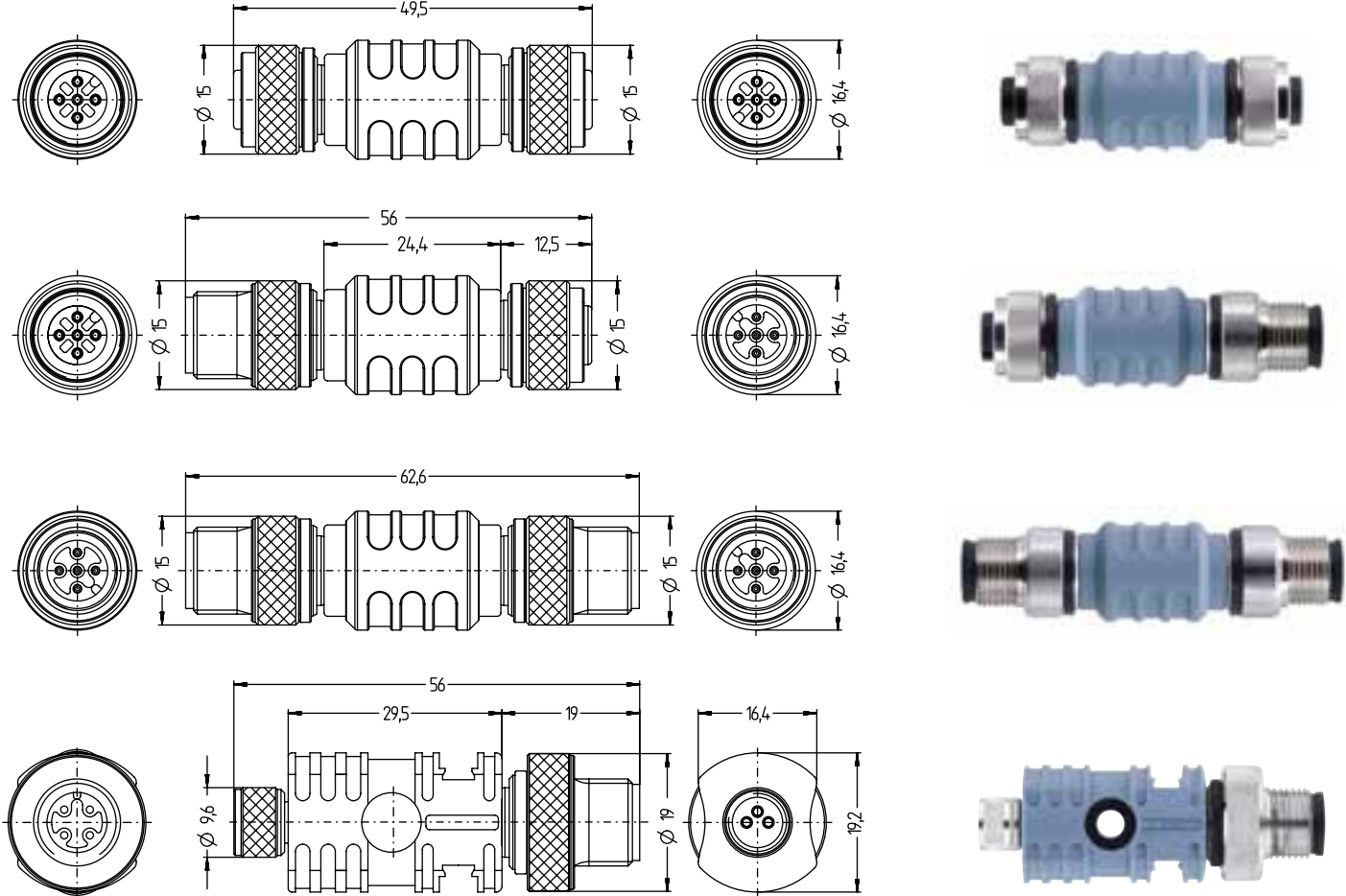
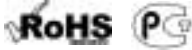


Y-splitter						
Technical data			Molded		Field-wireable 	
			Poles	Value	Poles	Value
Rated voltage [U _{max}]			M12x1 M8x1	60V	4	125V
			Ø8 snap M8x1	30V	5	125V
Current load [I _{max}]			all	4A	4, 5	4A
Insulation resistance			≥10 ⁸ Ω		≥10 ⁸ Ω	
Standards			IEC 61076-2-101/-104		IEC 61076-2-101	
Materials			Grip	TPU, BU	Grip	PA, BK
			Contact carrier	TPU, BK	Contact carrier	PA, BK
			Sealing	FPM/FKM	Sealing	FPM/FKM
			Contacts	CuZn, gold-plated	Contacts	CuZn, CuSnZn
			Locking mechanism	CuZn, nickel-plated	Locking mechanism	GD-Zn, nickel-plated
Ambient temperature			-30°C...+90°C		-40°C...+85°C	
Degree of pollution			3		3	
Protection class (in threaded condition)			IP67		IP67	
Mechanical life cycle			>100 mating cycles		>100 mating cycles	
External diameter of the cable					3.5...5mm	
Core cross-section/Clamping ability					max. 0.5mm²	
Pinning <i>male</i>					Pinning <i>female</i>	
M12x1 4 poles, A	M12x1 5 poles, A	M8x1 3 poles	M8x1 4 poles	M12x1 4 poles, A	M8x1 3 poles	



WAK	4.5–	WAK	4.5
			Poles
		M12x1	WAK: <i>female</i>
			WAS: <i>male</i>
		M8x1	SKP: <i>female</i>
			Poles
M12x1	WAK: <i>female</i>		
	WAS: <i>male</i>		
	FSM: <i>male</i>		

Adapter	Output 1	Output 2	Coding wiring	Type-designation	Order-No.
	M12x1 <i>f</i> 5	M12x1 <i>f</i> 5	A – A 1:1	WAK4.5-WAK4.5	8041351
	M12x1 <i>m</i> 5	M12x1 <i>m</i> 5	A – A 1:1	WAS4.5-WAS4.5	8041352
	M12x1 <i>f</i> 5	M12x1 <i>m</i> 5	A – A 1:1	WAK4.5-WAS4.5	8041349
	M12x1 <i>m</i> 3	M8x1 <i>f</i> 3	A 1:1	FSM3-SKP3	8008079
	M12x1 <i>m</i> 4	M8x1 <i>f</i> 4	A 1:1	FSM4-SKP4	8008138
Other versions, poles, codings and wirings are available upon request.					



Adapters					
Technical data		Poles	Value		
Rated voltage [Umax]		M12x1 M8x1	60V		
		Ø8 snap M8x1	30V		
Current load [Imax]		alle	4A		
Insulation resistance			≥ 10 ⁸ Ω		
Standards			IEC 61076-2-101/-104		
Materials		Grip	TPU, BU		
		Contact carrier	TPU, BK		
		Sealing	FPM/FKM		
		Contacts	CuZn, gold-plated		
		Locking mechanism	CuZn, nickel-plated		
Ambient temperature			-30°C...+90°C		
Degree of pollution			3		
Protection class (in threaded condition)			IP 67		
Mechanical life cycle			>100 mating cycles		
Pinning <i>female</i>			Pinning <i>male</i>		
M12x1 5 poles, A	M8x1 3 poles	M8x1 4 poles	M12x1 5 poles, A	M8x1 3 poles	M8x1 4 poles

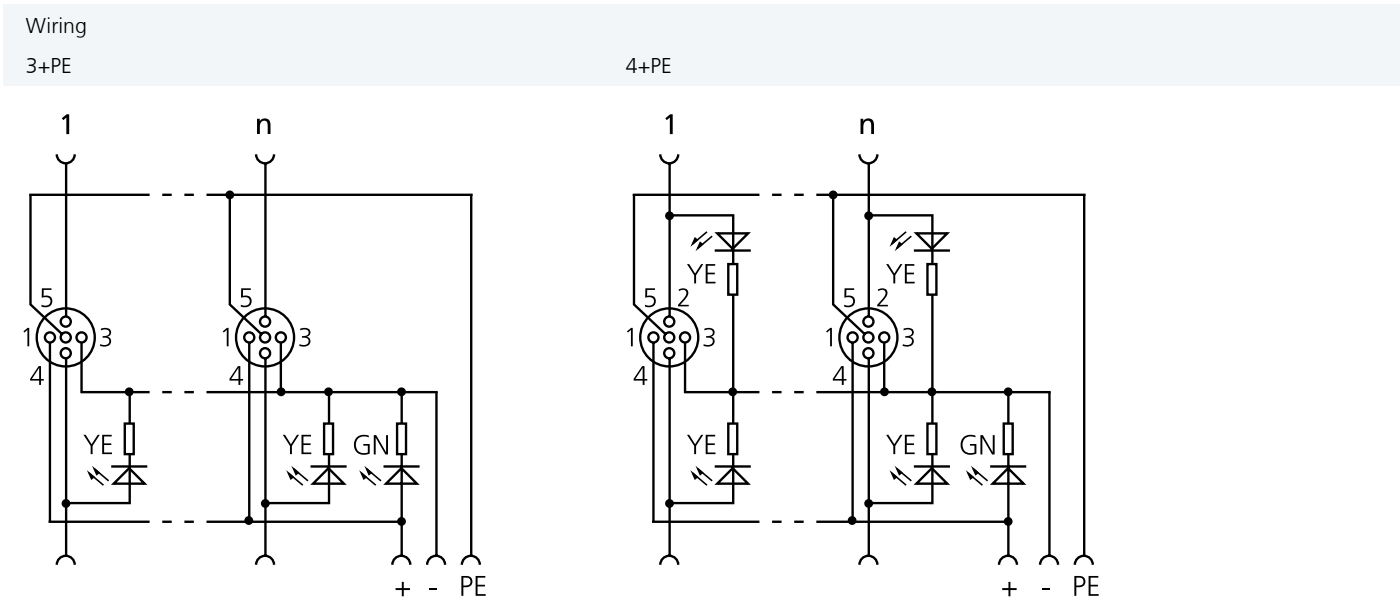


8	I/O	M12-	5.4	P2	T	m/	S370
							Cable quality
							Cable length [m]
							Connection M23x1 T: top, F: front, C: Cable
							PNP Quantity LEDs + circuit
							Contacts.allocation code
							I/O port M12x1
							I/O-junction box
							Quantity of I/O-ports



Product line	Quant. I/O	Poles I/O Coding	LED-display Ub signal per I/O	Connection	Type-designation	Order-No.
M12x1	4	3+PE A	1x GN 4x1 YE	top	M23x1_12 poles	4I/OM12-5.4P2T 8048790
				front	M23x1_12 poles	4I/OM12-5.4P2F 8048791
				cable	PUR S370® 4I/OM12-5.4P2C-2/S370	8048792
		4+PE A	1x GN 4x2 YE	top	M23x1_19-poles	4I/OM12-5P3T 8045895
				front	M23x1_19-poles	4I/OM12-5P3F 8045891
				cable	PUR S370® 4I/OM12-5P3C-2/S370	8045894
6		3+PE A	1x GN 6x1 YE	top	M23x1_12 poles	6I/OM12-5.4P2T 8048787
				front	M23x1_12 poles	6I/OM12-5.4P2F 8048788
				cable	PUR S370® 6I/OM12-5.4P2C-2/S370	8048789
		4+PE A	1x GN 6x2 YE	top	M23x1_19-poles	6I/OM12-5P3T 8045896
				front	M23x1_19-poles	6I/OM12-5P3F 8045892
				cable	PUR S370® 6I/OM12-5P3C-2/S370	8045893
8		3+PE A	1x GN 8x1 YE	top	M23x1_12 poles	8I/OM12-5.4P2T 8048784
				front	M23x1_12 poles	8I/OM12-5.4P2F 8048785
				cable	PUR S370® 8I/OM12-5.4P2C-2/S370	8048786
		4+PE A	1x GN 8x2 YE	top	M23x1_19-poles	8I/OM12-5P3T 8045647
				front	M23x1_19-poles	8I/OM12-5P3F 8045649
				cable	PUR S370® 8I/OM12-5P3C-2/S370	8045648

Other versions, poles, codings and cable-lengths are available upon request.



Dimensional drawings see page 171

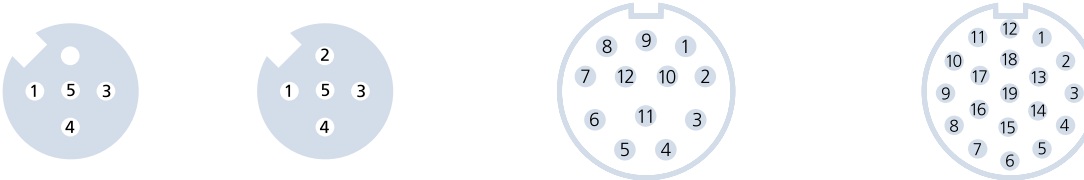
I/O-junction boxes M12x1

Technical data

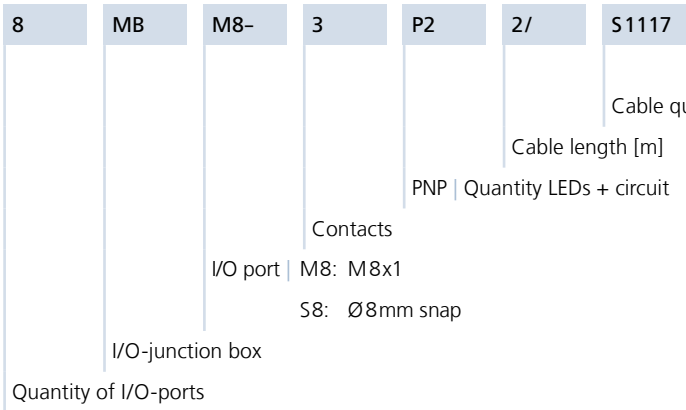
Rated voltage [Umax]	10...30V
Current load [Imax]	2 A per signal contact 9 A total current
Switching function	PNP
Insulation resistance	≥10 ⁸ Ω
Standards	IEC 61076-2-101
Materials	Housing: PA, BK M12x1 M23x1: Thread insert Flange housing: GD-Zn,nickel-plated Contact carrier: PBT Contacts: CuZn, gold-plated Sealing: FPM/FKM
Ambient temperature	-30°C...+90°C
Degree of pollution	3
Protection class	IP67 (in threaded condition)
Mechanical life cycle	>100 mating cycles
Accessories	safty-stopper (2pieces included in scope of supply) (page 152) For labels see accessories on page154. M23x1 connecting cable (page 122-123)

Pinning | female

M12x1 3+PE-poles, A	M12x1 4 poles+PE, A	M23x1 12 poles	M23x1 19-poles
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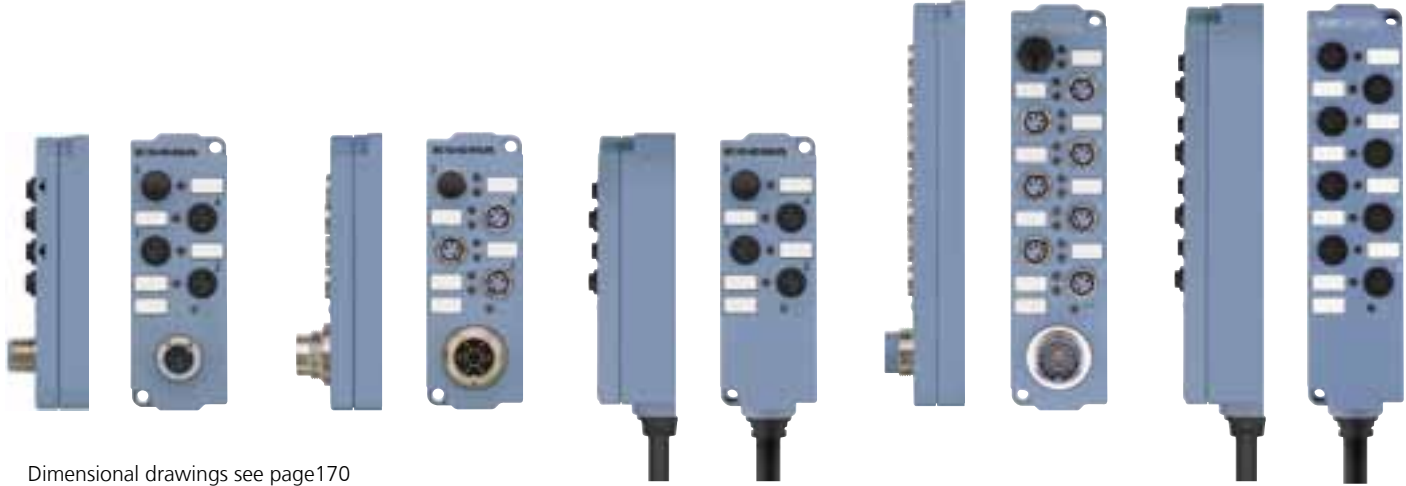
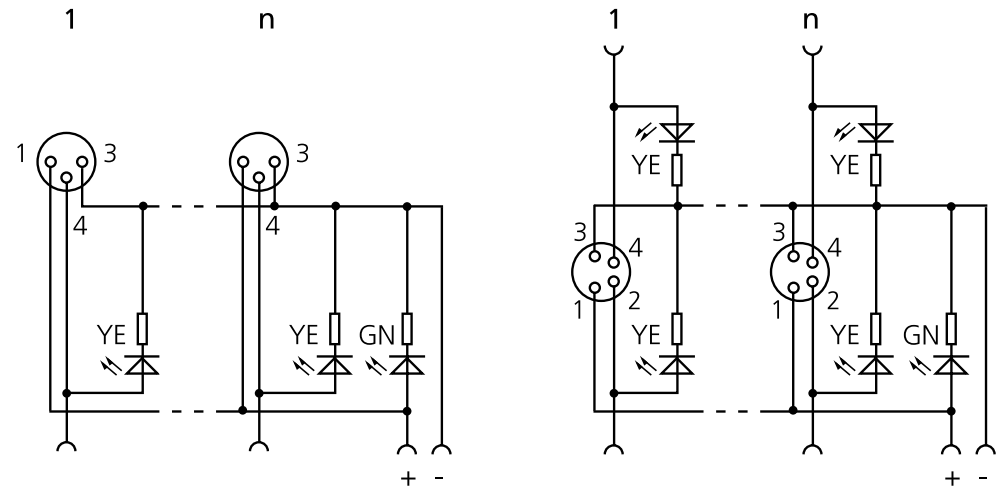
I/O_M12x1	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	all	all	all
M12_contacts	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	1	3	5
M23_12 poles	-	1	-	2	-	3	-	4	-	5	-	6	-	7	-	8	11	9+10	12
M23_19-poles	7	15	4	5	8	16	14	3	9	17	13	2	10	11	18	1	19	6	12
Wire-colours	GY/PK	WH	RD/BU	GN	WH/GN	YE	BN/GN	GY	WH/YE	PK	YE/BN	RD	WH/GY	BK	GY/BN	VT	BN (+)	BU (-)	GN/YE



Product line	Quant. I/O	Poles I/O	LED-display U _B signal per I/O	Connection	Type-designation	Order-No.
M8x1	4	3	1x GN 1x YE	front	M12x1_8 poles	4MBM8-3P2 8017726
				cable	PUR S1117 [®]	4MBM8-3P2-2/S1117 8018119
				cable	PVC S1118	4MBM8-3P2-2/S1118 8018131
	8	4	1x GN 2x YE	front	M16x0,75_14 poles	4MBM8-4P3 8025641
				cable	PUR S1117 [®]	4MBM8-4P3-2/S1117 8025656
				cable	PVC S1118	4MBM8-4P3-2/S1118 8025657
	8	3	1x GN 1x YE	front	M16x0,75_14 poles	8MBM8-3P2 8017721
				cable	PUR S1117 [®]	8MBM8-3P2-2/S1117 8018113
				cable	PVC S1118	8MBM8-3P2-2/S1118 8018125
	4	4	1x GN 2x YE	front	M16x0,75_19-poles	8MBM8-4P3 8025630
				cable	PUR S1117 [®]	8MBM8-4P3-2/S1117 8025648
				cable	PVC S1118	8MBM8-4P3-2/S1118 8025650
Ø8 snap	4	3	1x GN 1x YE	front	M12x1_8 poles	4MBS8-3P2 8017725
				cable	PUR S1117 [®]	4MBS8-3P2-2/S1117 8018122
				cable	PVC S1118	4MBS8-3P2-2/S1118 8018134
	8	3	1x GN 1x YE	front	M16x0,75_14 poles	8MBS8-3P2 8017724
				cable	PUR S1117 [®]	8MBS8-3P2-2/S1117 8018116
				cable	PVC S1118	8MBS8-3P2-2/S1118 8018128

Other versions, poles, codings and cable-lengths are available upon request.

Wiring	
3 poles	4 poles



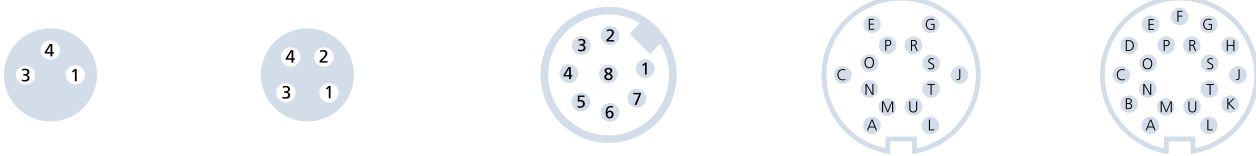
Dimensional drawings see page170

I/O-junction boxes M8x1

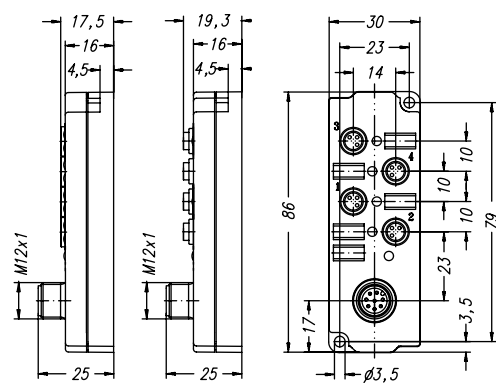
Technical data

Rated voltage [U _{max}]	10...30V
Current load [I _{max}]	2A per signal contact 6A total current
Switching function	PNP
Insulation resistance	≥10 ⁸ Ω
Standards	IEC 61076-2-104
Materials	Housing PA, BU M12x1 Contact carrier PA M16x0,75 Contact carrier TPU M12x1 M16x0,75 Thread insert Flange housing GD-Zn,nickel-plated Contacts CuZn, gold-plated Sealing FPM/FKM
Ambient temperature	-30°C...+90°C
Degree of pollution	3
Protection class	IP67 (in threaded condition)
Mechanical life cycle	>100 mating cycles
Accessories	saftey-stopper (2 pieces included in scope of supply) (page 152) For labels see accessories on page154. M12x1 M16x0,75 connecting cable

Pinning <i>female</i>	Pinning <i>male</i>
M8x1/Ø8 snap 3 poles	M8x1/Ø8 snap 4 poles
M12x1 8 poles, A	M16x0,75 14 poles
M16x0,75 19-poles	

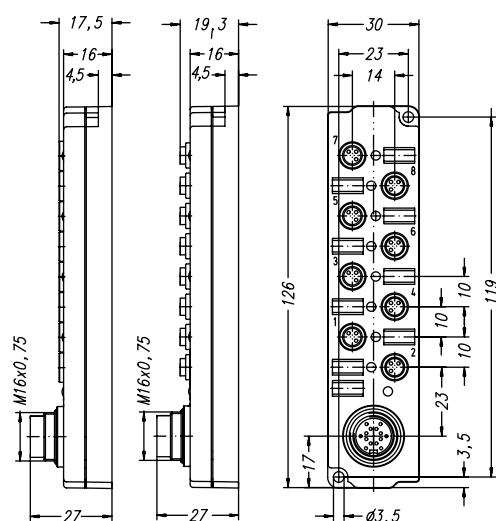
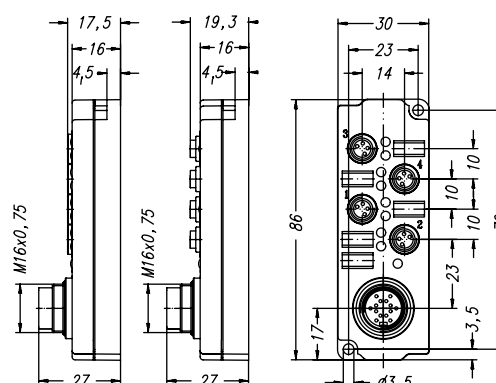


I/O_M8x1/Ø8 snap	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	all	all
M8x1/Ø8 snap_contacts	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	1	3
M12_8 poles	1	-	2	-	3	-	4	-	-	-	-	-	-	-	-	-	5	7
M16_14 poles	P	-	J	-	T	-	S	-	G	-	R	-	E	-	O	-	A/M	L/U
M16_19-poles	R	E	C	G	N	P	O	J	F	B	D	K	H	A	S	L	M	U
Wire-colours	WH	GY/PK	GN	RD/BU	YE	WH/GN	GY	BN/GN	PK	WH/YE	RD	YE/BN	BK	WH/GY	VT	GY/BN	BN (+)	BU (-)



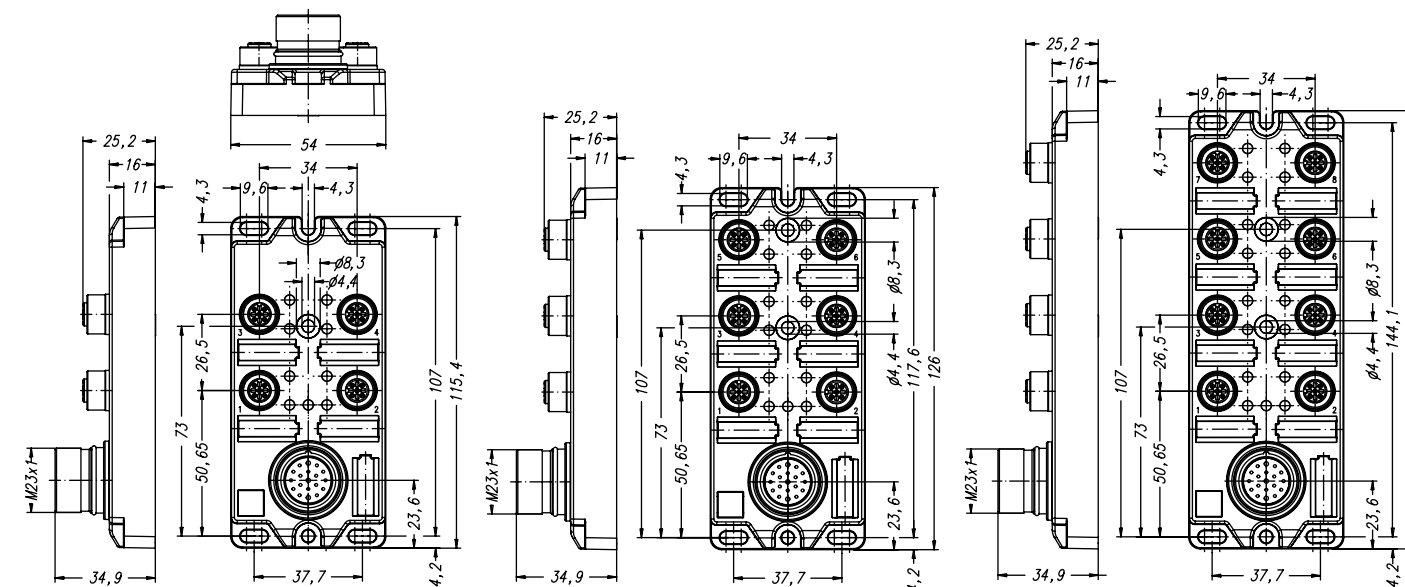
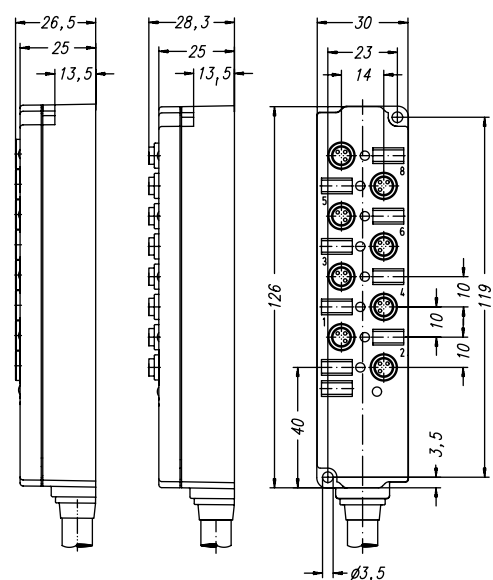
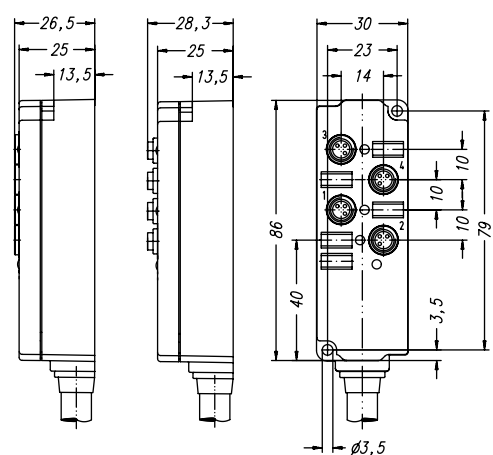
I/O-junction boxes M8x1

▲▼ M8x1 ▲▼ Ø8mm snap

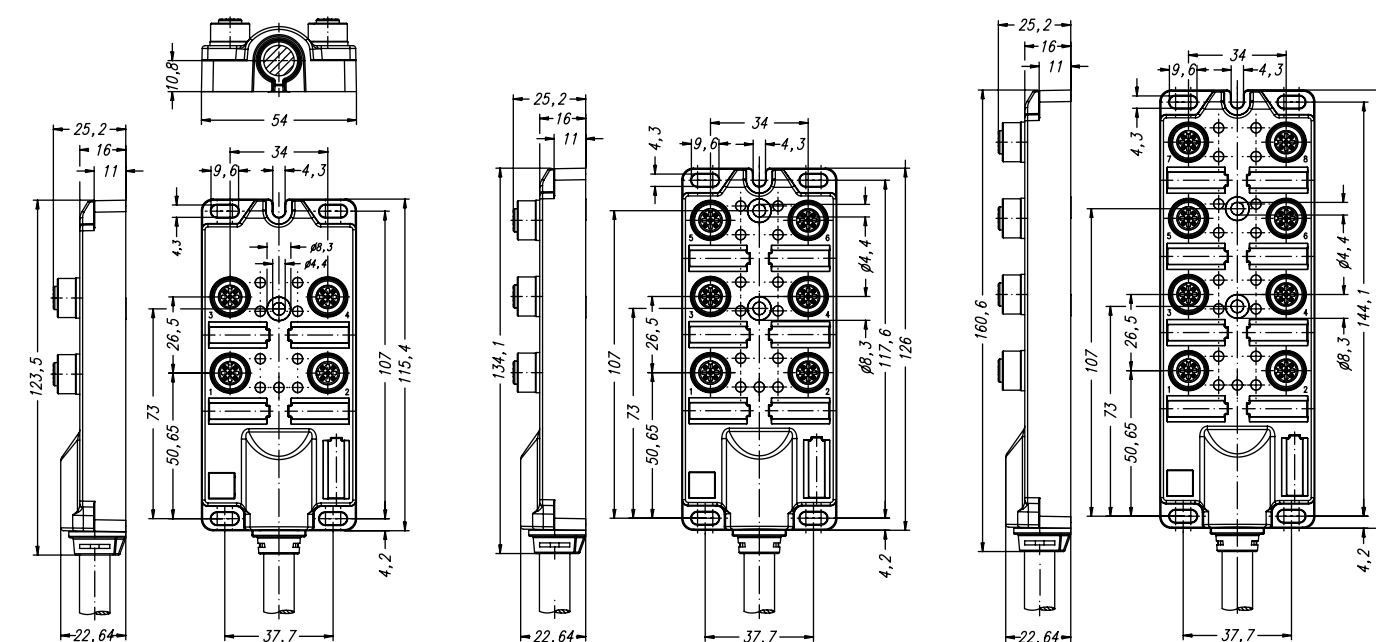
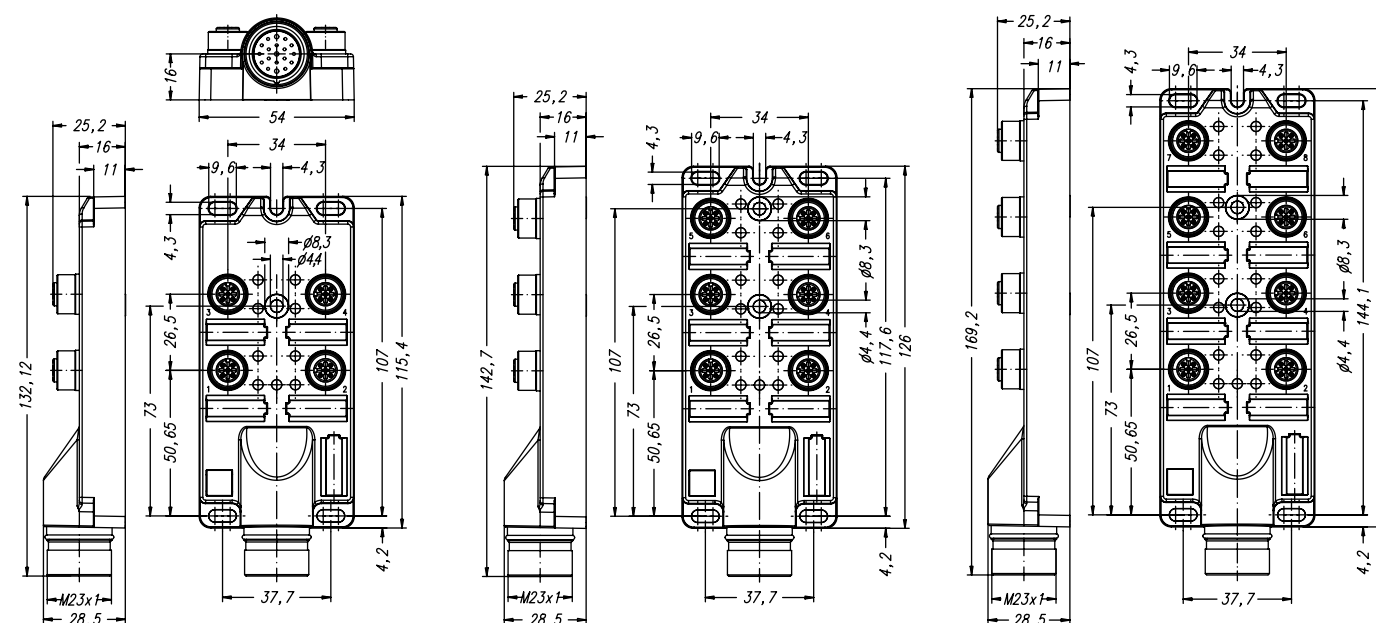


I/O junction boxes

Dimensional drawings | M8x1



I/O-junction boxes M 12x1

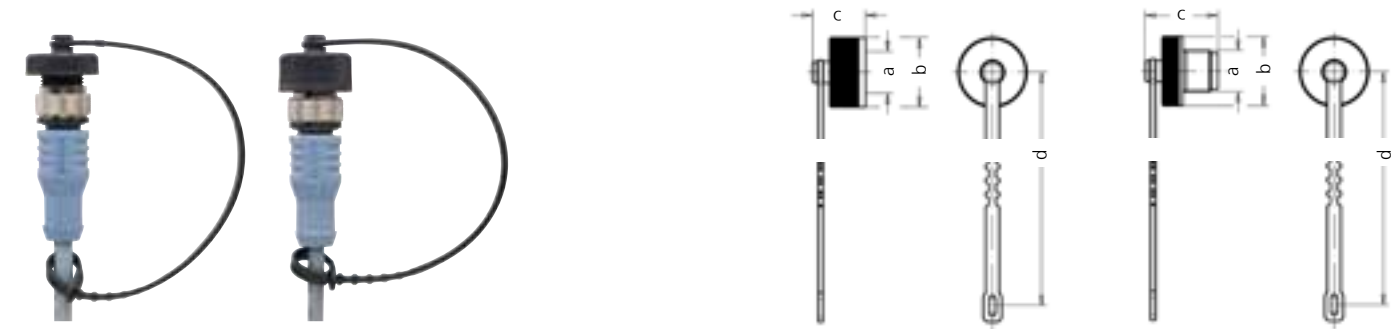


I/O junction boxes

Dimensional drawings | M12x1



Product line	for	Protection class	colour (according to RAL)	Fig.	Order-No.
Safty-stopper	M 8x1 <i>f</i>	IP67	BK RAL9005	2	8015075
	Ø8 snap <i>f</i>	IP67	BK RAL9005	3	8036742
	M12x1 <i>f</i>	IP67	BK RAL9005	7	8000004
		IP67	VT RAL4001	7	8041992
		IP67	BU RAL5012	7	8041993
Safty-cap	M 8x1 <i>m</i>	IP67	BK RAL9005	1	8041582
	M12x1 <i>m</i>	IP67	BK RAL9005	4	8036742
		IP67	VT RAL4001	4	8041995
		IP67	BU RAL5012	4	8041996
		IP67	GY RAL7053	4	8041994
Dustproof-cap	M12x1 <i>m</i>		transparent	5	8009778
	M12x1 <i>m + f</i>		BK RAL9005	6	8043617



Product line	for	Protection class	a	b	c	d	Order-No.
Safty-stopper captiv	M 8x1 <i>f</i>	IP67	M8x1	Ø 12 mm	16.0 mm	160 mm	8048567
	M12x1 <i>f</i>	IP67	M12x1	Ø 20 mm	21.0 mm	160 mm	8048568
Safty-cap captiv	M 8x1 <i>m</i>	IP67	M8x1	Ø 12 mm	13.3 mm	160 mm	8048566
	M12x1 <i>m</i>	IP67	M12x1	Ø 20 mm	15.5 mm	160 mm	8048569



Type-designation	Length protective tubing	2 m	5 m	10 m
Adapter with M12x1 protective tubing		8055509	8055510	8055511

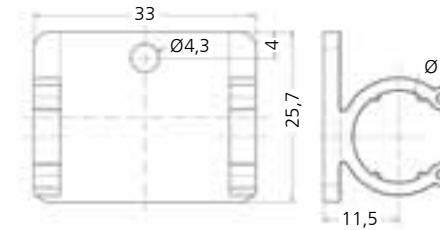
Mounting-clip
for M8x1 Round connector



POM BK

Mounting-clip M8x1	10xClip	8047658
Mounting-clip set M8x1	10xClip + 10xscrews M4x8	8047663

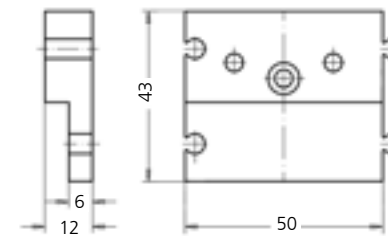
Mounting-clip
for M12x1 Round connector



POM BK

Mounting-clip M12x1	10xClip	8047660
Mounting-clip set M12x1	10xClip + 10xscrews M4x8	8047664

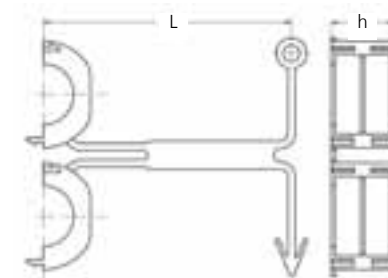
Mounting-set
for S89 2-way junction



PA BK

Monting-set S89	2x carrier plates + 4x screws M4x25 + 4x nuts M4	8036078
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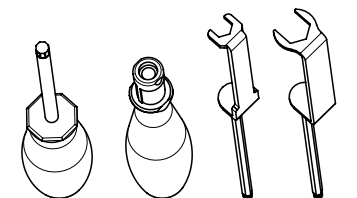
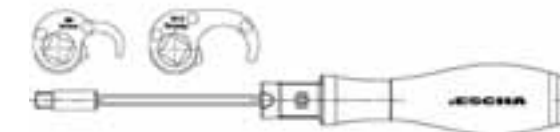
Safty-clip
M8x1 | M12x1
Against accidental
disconnection under
pressure



PA BK

Type-designation		L [mm]	h [mm]	Order-No.
Safty-clip	M8x1	53	9.4	8040691
Safty-clip	M12x1	53	13.5	8040501

Torque-wrench set
M8x1 | M12x1



Type-designation	Order-No.
Torque-wrench-set in wallet fully fitted for M8x1 M12x1 (knurl, hexagon-nut)	8055609

Labels
for passive junctions
and valve connectors



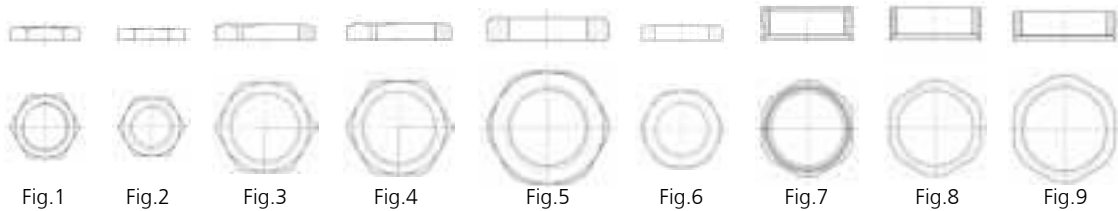
Label for	Type	a [mm]	b [mm]	c [mm]	d [mm]	Order-No.
I/O-junction box	M8x1	5.0	10.0	1.0	2.5	8011349
	M12x1	9.0	20.0	0.8	2.6	8015002
Valve connector	A	7.0	20.0	1.0	–	8047110
	VAA, B/BI,C/CI	4.0	11.0	1.0	–	8047109

Label-carrier
transparent



Label-carrier	Materials	a [mm]	L [mm]	Cable [mm]	Order-No.
3/18	PVC	3.0	18.0	Ø 3.5 ... 6.0	8000052
4/18	PVC	4.0	18.0	Ø 6.0 ... 10.0	8000060
3/30	thermopl. ESC (halogen-free)	3.0	30.0	Ø 3.5 ... 6.0	8000091
4/30	thermopl. ESC (halogen-free)	4.0	30.0	Ø 6.0 ... 9.0	8000092

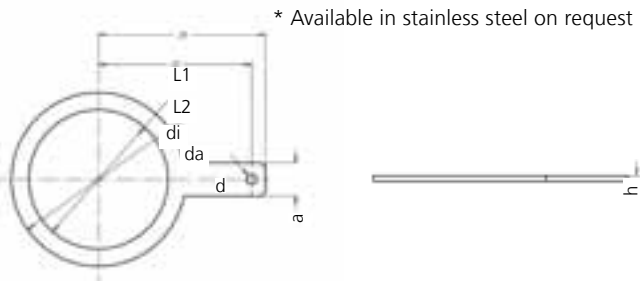
Spare nuts
for flanges
CuZn nickel-plated



Thread	Fig.	for Flange	Materials	SW	h [mm]	Order-No.
M8x0,5	1	M8x1 PFKS, PFS	CuZn	10	2.0	8004923
M8x1	2	M8x1 PFSF	CuZn	10	2.0	8004971
Pg9	3	M12x1 PG9	CuZn VA*	18	3.0	8004913
M16x1.5	4	M12x1 M16x1,5	CuZn VA*	19	2.8	8029359
M20x1.5	5	M12x1 M20x1,5	CuZn	24	3.0	8029360
M12x1	6	M12x1 FSF	CuZn VA*	16	3.0	8004930
Pg9	7	M12x1 FKD, FSD PG9	CuZn	17	6.0	8004874
M16x1.5	8	M12x1 FKD, FSD M16	CuZn VA*	17	6.0	8027491
M20x1.5	9	M12x1 FKD, FSD M20	CuZn VA*	22	6.0	8027492

* Available in stainless steel on request | A/F (across flats) may different

Solder tags
for grounding of flange housings
CuZn nickel-plated



Solder-tag	L1 [mm]	L2 [mm]	di [mm]	da [mm]	d [mm]	a [mm]	h [mm]	Order-No.
M16x1.5	22.0	20.0	Ø16.0	Ø21.0	Ø1.5	4.8	0.8	8036043
M20x1.5	24.0	22.0	Ø20.0	Ø25.0	Ø1.5	4.8	0.8	8036044

Technical information

Comprehensive Information on Connectors

The respective requirements of machinery specifications are binding for the user with connector applications. The relevant standards and specifications according to which our products are made and tested are explained in the following.

■ DIN VDE 0627; 2012-03 | Connectors and Connecting Devices

This standard has been under revision for a long time and will soon be internationally valid. The standard is valid for connectors and connecting devices with rated voltages up to 1000V ~ or 1500V – and rated currents up to 125A per contact intended for connecting assemblies or components in or on machinery or measuring-, instrumentation- or control circuits considering safety aspects. It is also valid for connectors and connecting devices on household appliances as well as information-processing units.

■ IEC 60664-1; 2008-01 | Coordination of Isolation

This international standard, which complies with the German standard DIN VDE 0110 -1, April 97 edition, is a basic safety standard for achieving the coordination of isolation. It contains the required data to determine air distances, creep distances and solid insulations for electrical devices (e.g. connectors). This is realised considering the micro-ambient conditions and other loads they are exposed to in the course of the expected service life. Processes for the voltage test related to the coordination of isolation are included.

■ IEC 60512; May1994 | Measuring- and Testing-Process

This international standard corresponds to the European standard DIN EN 60512 and has replaced the previous German standard DIN 41640. It determines the measuring- and testing-processes for electromechanical components (e.g. connectors). The standard is very comprehensive and consists of 9 sections in total in which all electrical, mechanical and climatic tests are described. In addition, the standard contains tests on soldering ability, density, shielding and cable pull-out support.

■ IEC 60529; 2009-09 | Degrees of Protection by Housing (IP-Code)

This international standard corresponds to the European standard DIN EN 60529 and complies with the German standard DIN VDE 0470 -1, November 92 edition. It determines the designation, requirements and tests for the classification of protection degrees by housings for electrical devices (e.g. connectors). Thereby, protection against access to dangerous parts, protection against solid foreign bodies and protection against water are evaluated. The degree of protection is designated by an IP-code.

■ IEC 60068-1; March1995, Environmental Tests

This international standard which complies with the European standard DIN EN 60068 -1, contains basic determinations on environmental tests and degree of test-precision. This testing process serves to trace the resistivity of components to expected environmental influences under operating conditions. Typical tests are: coldness, dry and humid heat, shock, vibration, temperature fluctuation and others.

Changes in design are subject to further notice for reasons of quality improvements, refinement or production optimisation. The technical data stated in the catalogue refer to connectors, i.e. components which must not be plugged or unplugged under voltage. In order to secure the correct use of the products, the technical data are listed. It is possible to select the right products using these data. The products are described as well, however the properties are not assured. All ESCHA-connectors have been developed and designed for applications in plant-, control and electric device version. It is up to the user to verify the possibility of using the connectors in other application areas as well. Data on properties and Sealinging refer to torques of 0.6Nm for M12x1-Round Connectors or 0.4Nm for M8x1-Round Connectors. All data concerning the IP-degrees of protection are only guaranteed for the connections of ESCHA-components.

■ Supplementary information to the technical data stated in the catalogue

Characteristic	Standard ¹⁾	Note
Protection class housing	IEC 60529	Data in plugged condition. For more information see page 155
Mechanical life cycle	IEC 60512-5/9a	Test is done without electrical load
Rated voltage	IEC 60664-1	The stated value is defined in connection with degree of pollution and overvoltage category
Degree of pollution	IEC 60664-1	
Current load	IEC 60512-3/5b	
Contact resistance	IEC 60512-2/2a	Contact resistance contact-pin/contact-bush in plugged condition throughout adefined range
Insulation resistance	IEC 60512-2/3a	Insulation between two conducting parts (dependent on material)

¹⁾ The technical data represent initial values which can change depending on load. The housings have to be included in the device protective-measures when mounting electrically conductive flange housings. The cables to be connected should be insulated in such a way that the distances to electrically conductive parts are not reduced. When soldering the cables, care must be taken that none of the single wires is projecting which can cause short circuits.

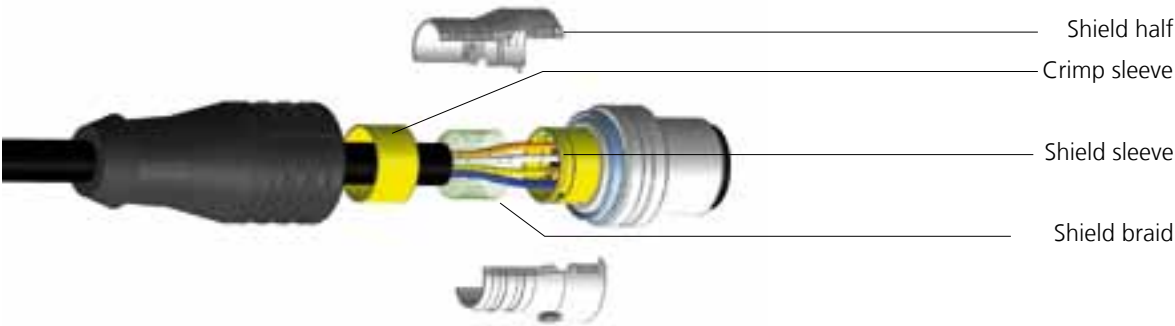
Degrees of Protection | IP: International Protection

For reasons of safety, connectors must be protected against environmental influences, e.g. dust, foreign bodies, touch, humidity and water. In case of industrial connectors, this protection must be provided for by the housing and its locking as well as the insulation on cable outlet. The degrees of protection are indicated by an abbreviation consisting of two constant characteristic letters IP (International Protection) and two following digits for the protection degree. The first digit indicates the protection degree against touch and foreign bodies. The second digit indicates the protection against damaging ingress of water. All data are only valid in locked condition. Awarding degrees of protection is subject to a standardised testing procedure.

	Digit 1	Digit 2
0	Unprotected	Unprotected
1	Protected against access to dangerous parts by hand pressure. Protected against solid foreign bodies Ø50mm.	Protected against dripping water
2	Protected against access to dangerous parts by fingers. Protected against solid foreign bodies Ø12.5mm.	Protected against dripping water when housing is inclined up to 15°
3	Protected against access to dangerous parts by a tool. Protected solid foreign bodies Ø2.5mm.	Protected against spraying water
4	Protected against access to dangerous parts by a wire. Protected against solid foreign bodies Ø1mm.	Protected against sprinkling water
5	Protected against access to dangerous parts by a wire. Protected against dust.	Protected against water-jet
6	Protected against access to dangerous parts by wire. Dustproof.	Protected against a strong water-jet
7		Protected against effects due to temporary immersion in water.
8		Protected against effects due to permanent immersion in water. (Conditions to be agreed upon between manufacturer and user. However, conditions must be more difficult than with IP_7.)
9 K		Protected against water by high-pressure steam-jet cleaning

Shielding | ESCHA-two-component overmould shielding

EMC of devices has gained more significance since the publication of the law on electromagnetic compatibility. The devices have to be made in such a way that:
The generation of electromagnetic interferences is limited to the extent that a proper operation of these devices is possible.
The devices have an adequate stability against electromagnetic interferences in order that a proper operation is possible.
The ESCHA-two-shell-shielding concept comprises an equipotential surface through two interconnected metal shells encapsulating the round connector at 360°. The shield braid of the molded cable is crimped all around on the shield sleeve. A twofold-overmold provides for 360°-shielding even at high mechanical stresses, dust- and waterproof at high pressure- and steam jet cleaning according to IP67 and IP69K.



Certifications

UL (Underwriter Laboratories Inc.)

The certification of products, components or materials by the Underwriter Laboratories Inc. is the verified proof that it meets the specific safety requirements. UL-approvals are, above all, required for the American and Canadian markets.
For relevant ESCHA-products, component approvals (UL Recognized Component) apply, qualifying them as UL-approved components for installation into UL-approved systems. This component approval also holds for relevantly used cable qualities. Single cable qualities (see Standard Cable qualities table) carry the UL-Listing-certification mark (device approval), which guarantees compliance with the valid UL-safety standards.

GOST-R (ГОСТ - Государственный Стандарт)

Importing goods into the Russian Federation requires the certification by the Federal Agency for Technical Regulation and Metrology which verifies product compliance with the Russian requirements, standards and quality standards.

Guideline 2002/95/EG (RoHS - Restriction of [the use of certain] hazardous substances)

The EU-guideline restricting the use of certain hazardous substances in electrical- and electronic devices does not allow hazardous substances in devices and components above defined limits. Lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl (PBDE) are among the hazardous substances. For ESCHA-products, this means lead-free soldering and no use of flame retardants in plastics and cables.

ESCHA-connectors are electronic components and are not subject to CE-designation. This is confirmed by the European Commission directives for low-voltage- and EMC-guidelines.



Technical data

Rated voltage

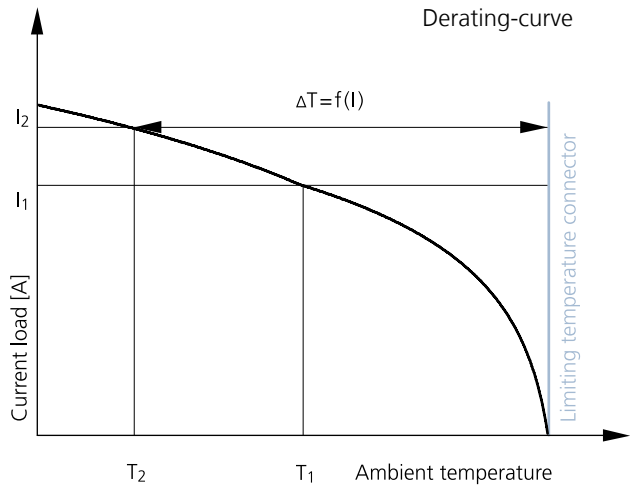
Specifies the maximum electrical voltage during standard operation. Operating properties of round connectors are related to rated voltage.

Insulation resistance

The insulating capacity of a material is defined as separating adjacent contacts or a contact against ground at a high-impedance as possible according to IEC 60512-2, 3a and DIN EN 60512-2.

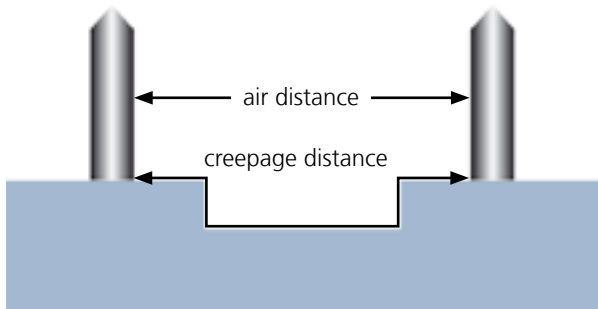
Current load

According to DIN ISO 60512-3, the current load of a round connector defines the maximum permissible current permanently and concurrently flowing through all contacts at an ambient temperature of – 40°C. The total current-related self-heating and ambient temperature must not exceed the maximum limit temperature of a round connector – defined by the thermal properties of the material used. The so called Derating-curve illustrates the relation between the current load of a round connector and its ambient temperature. In practice, possibly higher currents per contact are permissible as not all contacts are permanently energized at a maximum rate. Exact values are to be individually determined by testing.



Isolation coordination (air- and creepage distance)

For electrical equipment in low-voltage installations (<1kV), DINEN60664 (DINVDE0110) describes the process of measuring the isolating air- and creepage distance. It defines minimum air distances (minimum distances between voltage carrying parts in the air) and minimum creepage distances (minimum distance between voltage carrying parts along an isolating surface) to avoid an electrical flashover. Minimum creepage distances depend on isolating material and degree of pollution.



Degree of pollution

The degree of pollution (1-4) defines the quantity of pollution (solid, liquid or gaseous impurities), at which the dielectric strength and/or surface resistance are reduced. For industrial applications, a degree of pollution 3 is typical: conductive or dry, non-conductive pollution occurs. The latter can become conductive through the expected thawing.

Mechanical life cycle

Defines the number of mating cycles (a mechanical connect- and disconnect process of a round connector), during which no abrasion of contact surfaces occurs and thus increasing contact resistance.

Conversion of American Wire Gauge, AWG in mm²

In some industrial areas, the American Wire Gauge is also used for cables. The following table serves the conversion from AWG in mm². It should be taken into consideration that wires with the same AWG-number but different structures show slightly different cross sections.

AWG	Wire structure [mm]	Wire diameter [mm]	Wire cross-section [mm²]
30	1 x0.25	0.25	0.05
	7 x0.10	0.36	0.06
28	1 x0.32	0.32	0.08
	7 x0.13	0.38	0.09
26	1 x0.4	0.40	0.13
	7 x1.16	0.48	0.14
	19 x0.10	0.51	0.15
24	1 x0.51	0.51	0.21
	17 x0.20	0.61	0.22
22	19 x0.13	0.64	0.25
	1 x0.64	0.64	0.33
	7 x0.25	0.76	0.34
20	19 x0.16	0.81	0.38
	1 x0.81	0.81	0.52
	7 x0.32	0.97	0.56
18	19 x0.20	1.02	0.60
	1 x1.02	1.02	0.82
16	19 x0.25	1.27	0.93
	19 x0.29	1.44	1.25
14	19 x0.36	1.80	1.93
12	19 x0.46	2.29	3.16
10	37 x0.40	3.10	4.65

Colour guide

WH	BN	GN	YE	GY	PK	BU	RD	BK	VT	GY/PK	RD/BU	WH/GN	BN/GN	WH/YE	YE/BN	WH/GY	GY/BN	GN/YE
white	brown	green	yellow	grey	pink	blue	red	black	violet	grey/pink	red/blue	white/green	brown /green	white/yellow	yellow/brown	white/grey	grey/brown	green /yellow

Overview Pg-thread vs. metric thread

The interim period for DIN 46320 “screwing for cables and conductinglines with Pg-thread” expired on 31.12.1999. Since then, screwing for cables and conductinglines had to comply with the national standard 46319 before this was replaced by EN 50262 on 01.03.2001.

Comparison Pg-thread vs. metric thread, wrench width for cable screwing according to EN 50262

Pg	Metric thread	max. Wrench width [mm]	max. Corner length [mm]
Pg7	M10x1.5 M12x1.5	16	18
Pg9 Pg11	M16x1.5	21	23
Pg13.5	M20x1.5	25	28

Wiring instructions

The correct installation of the round connector and a professional wiring are the precondition for properties of a relevantly tight and reliable electrical connection guaranteed by the manufacturer.

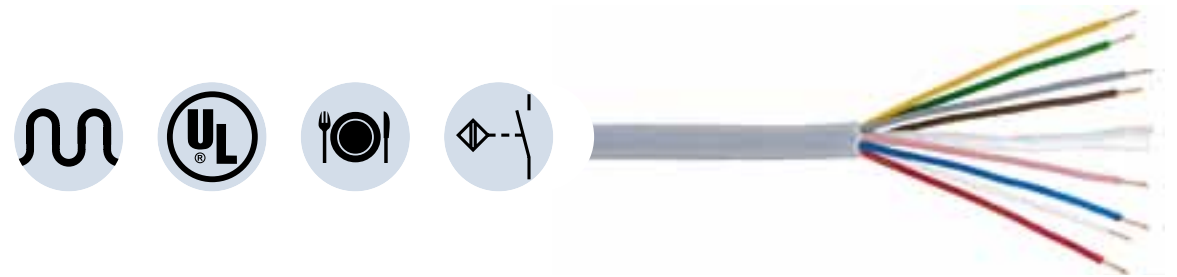
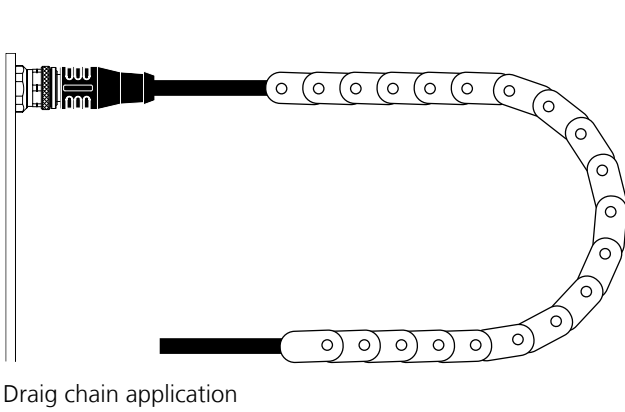
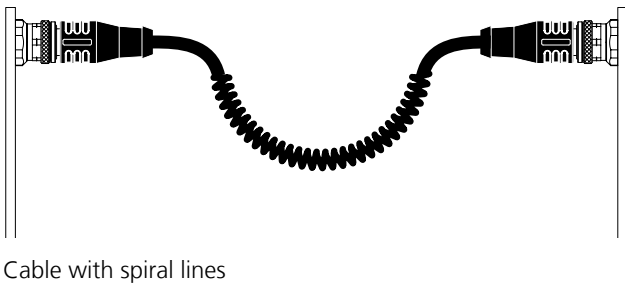
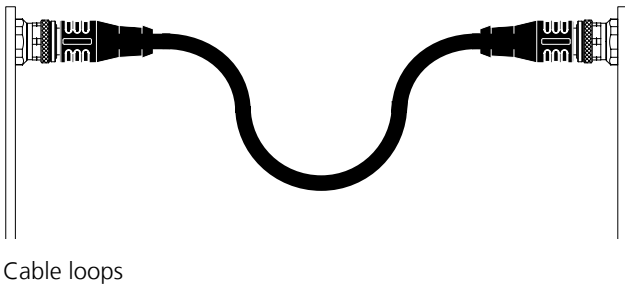
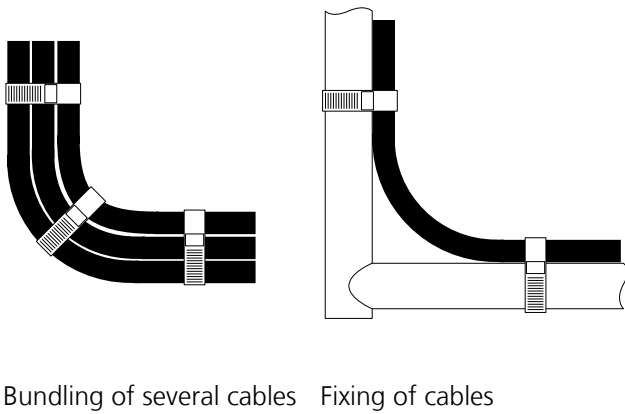
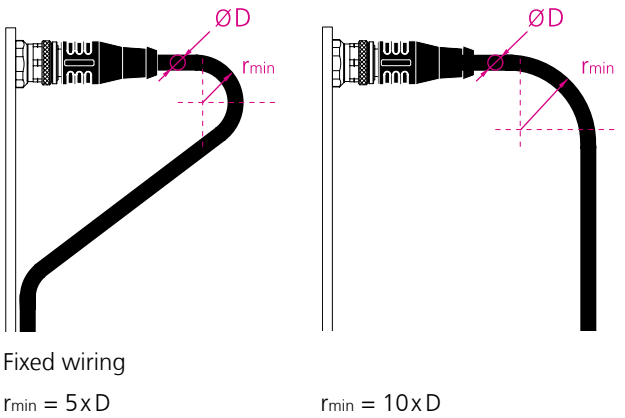
The use of a torque application tool is recommended for tightening and loosening of round connectors (accessories page 173).

Torques:
0.4Nm for M8x1-Round connectors
0.6Nm for M12x1-Round connectors.

In order to avoid damage to a round connector and cable, the minimum bending radius of the cable (r_{min}) is to be observed during the wiring.

When using cable ties for cable bundling or permanent wiring, the ties must not cut into or deform the cable to avoid short circuits, cable interruptions or a reduction of the dielectric strength.

In case of junction cables, sufficient cable length between the connections should be observed in order to absorb the generated energy during movement. The use of cable loops, spiral lines or cable chains guarantees a high life cycle of the round connector system.

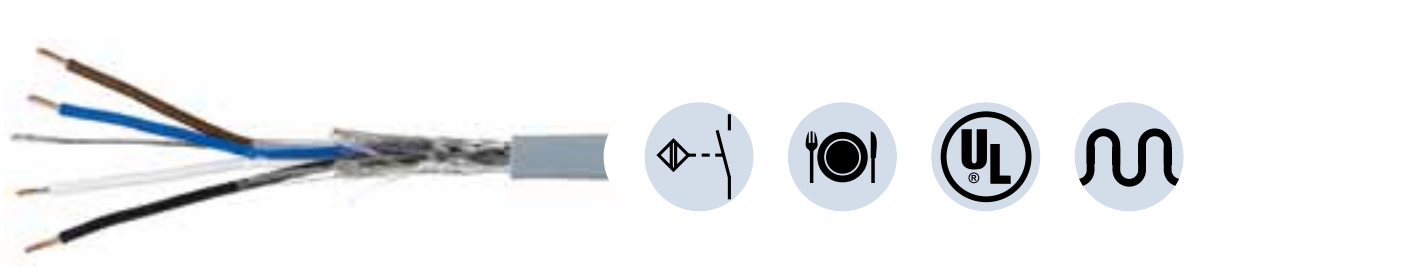


P00/P01[®] | Control line | PVC

PVC-cable for measurement and control-, and sensor technology. Suitable for applications in dry areas on packaging machines, assembly- and conveyor technology. High flexibility with unstressed movement (conditional drag-chain application possible). Predestined for applications in food- and beverage industry. P01-cables meet the UL and CSA (UL1729/2464; cULus) requirements.

Features	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHS-conform	
	■ acids- and alkali resistance	
	■ ozone- and UV-resistance	
Temperature range	operation	0°C...+80°C
	installation	-25°C...+80°C
Bending radius	repeated	10 x Ø-cable
	single	5 x Ø-cable
Rated voltage	≤ 300V	
Color outer-jacket	window gray similar RAL 7040	
Wire-structure	VDE 0295 EN/IEC 60228, Class 5	
	conductor	Cu-ETP1 bare DIN EN 13602
	insulation	PVC TI2 VDE 0207-363, Section 3
	stranding	tight layer stranding for a flexible application
	jacket	PVC TM2 VDE 0207-363, Section 4-1

	Wire	Type	Wire-structure	P00	P01 [®]	Wire color
				Ø - Jacket	Ø - Jacket	
M8x1	3	LiYY-0B 3x0.25mm²	14xØ0.15mm	4.0mm	4.3mm	BN BU BK
	4	LiYY-0B 4x0.25mm²	14xØ0.15mm	4.2mm	4.7mm	BN WH BU BK
	5 (P00)	LiYY-0B 5x0.25mm²	14xØ0.15mm	4.5mm	—	BN WH BU BK GY
M12x1	3	LiYY-0B 3x0.34mm²	19xØ0.15mm	4.2mm	4.6mm	BN BU BK
	4	LiYY-0B 4x0.34mm²	19xØ0.15mm	4.5mm	4.9mm	BN WH BU BK
	4+PE	LiYY-0B 4+1x0.34mm²	19xØ0.15mm	4.9mm	5.3mm	BN WH BU BK GNYE
	5	LiYY-0B 5x0.34mm²	19xØ0.15mm	4.9mm	5.3mm	BN WH BU BK GY
	6 (P00)	LiYY-0B 6x0.25mm²	14xØ0.15mm	5.4mm	—	WH BN GN YE GY PK BU RD
	8	LiYY-0B 8x0.25mm²	14xØ0.15mm	5.7mm	6.2mm	WH BN GN YE GY PK BU RD
	12	LiYY-0B 12x0.14mm²	18xØ0.10mm	5.6mm	6.1mm	BN BU WH GN PK YE BK GY RD VT GYPK RDBU

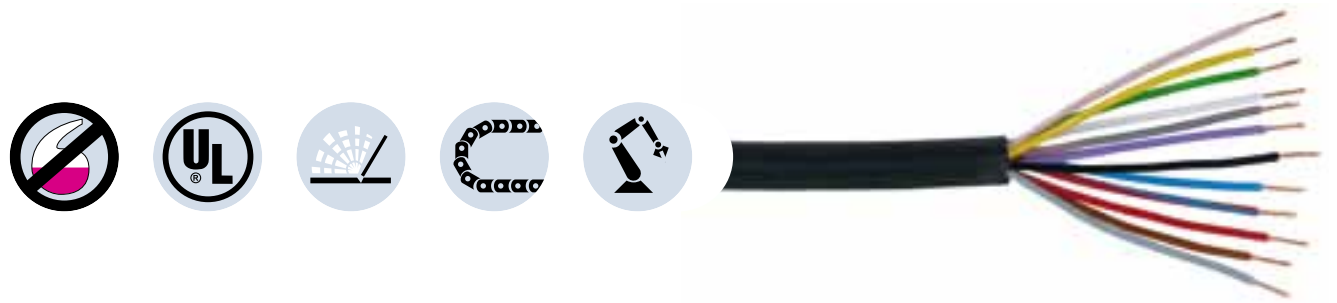


PVC shielded ☉ | Control line | P00/P01[®]

PVC-cable for measurement and control-, and sensor technology. Suitable for applications in dry areas on packaging machines, assembly- and conveyor technology. High flexibility with unstressed movement (conditional drag-chain application possible). Predestined for applications in food- and beverage industry. P01-cables meet the UL and CSA (UL1729/2464; cULus) requirements. Very good EMC-features with shielded versions.

Features	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHS-conform	
	■ acids- and alkali resistance	
	■ ozone- and UV-resistance	
	■ hydrolysis strength	
Temperature range	operation	0°C...+80°C
	installation	-25°C...+80°C
Bending radius	repeated	10 x Ø-cable
	single	5 x Ø-cable
Rated voltage	≤300V	
Color outer-jacket	window gray similar RAL7040	
Wire-structure	VDE0295 EN/IEC60228, Class5	
	conductor	Cu-ETP1, bare DINEN13602
	insulation	PVC T12 VDE0207-363, Section 3
	stranding	tight layer stranding for a flexible application
	jacket	PVC TM2 VDE0207-363, Section 4-1

	Wire	Type	Wire-structure	P00 ☉	P01 [®] ☉	Wire color
				Ø - Jacket	Ø - Jacket	
M8x1	3	LiYY-0B 3x0.25mm²	14xØ0.15mm	4.6mm	4.8mm	BN BU BK
	4	LiYY-0B 4x0.25mm²	14xØ0.15mm	4.9mm	5.1mm	BN WH BU BK
M12x1	3	LiYY-0B 3x0.34mm²	19xØ0.15mm	4.8mm	5.0mm	BN BU BK
	4	LiYY-0B 4x0.34mm²	19xØ0.15mm	5.1mm	5.3mm	BN WH BU BK
	5	LiYY-0B 5x0.34mm²	19xØ0.15mm	5.5mm	5.9mm	BN WH BU BK GY
	8	LiYY-0B 8x0.25mm²	14xØ0.15mm	6.7mm	6.7mm	WH BN GN YE GY PK BU RD
	12	LiYY-0B 12x0.14mm²	18xØ0.10mm	6.6mm	6.6mm	BN BU WH GN PK YE BK GY RD VT GYPK RDBU

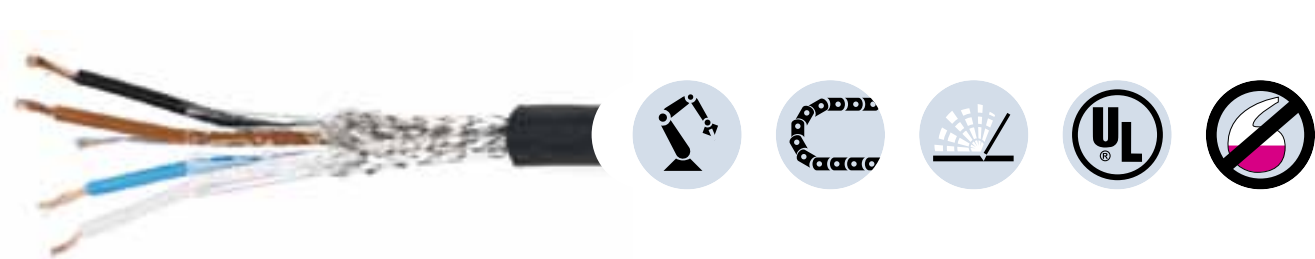


S370[®] | Control line | PUR

Flexible, silicone- and halogen-free control line with high mechanical strength. The cable is chemicals, hydrolysis-, and microbes- resistant. The drag-chain application is possible at a bending radius of minimum 10xd. Due to its weldfield immunity, the cable is very well suited for the flexible application in robotics, machine-tool, and metal-cutting production. The cables meet the UL and CSA (UL 10493/20549; cULus) requirements.

Features	■ flame-retardant VDE0482-332-2-2, DIN EN/IEC 60332-2-2, UL/CSAFT2	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHS-conform	
	■ acids- and alkali resistance	
	■ good ozone- and UV-resistance	
	■ hydrolysis strength	
	■ drag-chain- and torsion capability	
	■ good weldfield immunity	
	■ halogen-free DIN EN50267-2-1, IEC 60754-1, VDE0482-267-2-1	
	■ silicone-free	
Temperature range	operation	-30°C...+90°C
	installation	-40°C...+90°C
	drag-chain	-25°C...+60°C
Bending radius	repeated	10 x Ø-cable
	single	5 x Ø-cable
Rated voltage	≤300V	
Color outer-jacket	black similar RAL9005	
Wire-structure	VDE0295 EN/IEC60228, Class5	
	conductor	Cu-ETP1, bare DINEN13602
	insulation	TPE-O (PP 9Y), halogen-free
	stranding	for drag-chain and torsion-application
	jacket	TPE-U (PUR 11Y), halogen-free

	Wire	Type	Wire-structure	Ø - Jacket	Wire color
M8x1	3	LiF9YH11YH 3x0.34mm²	42xØ0.10mm	4.3mm	BN BU BK
	4	LiF9YH11YH 4x0.34mm²	42xØ0.10mm	4.7mm	BN WH BU BK
	5	LiF9YH11YH 5x0.25mm²	14xØ0.15mm	4.5mm	BN WH BU BK GY
M12x1	3	LiF9YH11YH 3x0.34mm²	42xØ0.10mm	4.3mm	BN BU BK
	4	LiF9YH11YH 4x0.34mm²	42xØ0.10mm	4.7mm	BN WH BU BK
	4+PE	LiF9YH11YH 5x0.34mm²	42xØ0.10mm	5.2mm	BN WH BU BK GNYE
	5	LiF9YH11YH 5x0.34mm²	42xØ0.10mm	5.2mm	BN WH BU BK GY
	8	LiF9YH11YH 8x0.25mm²	32xØ0.10mm	5.9mm	WH BN GN YE GY PK BU RD
	12	LiF9YH11YH 12x0.14mm²	18xØ0.10mm	5.6mm	BN BU WH GN PK YE BK GY RD VT GYPK RDBU



PUR shielded ☉ | Control line | S370[®]

Flexible, silicone- and halogen-free control cable with high mechanical strength. The cable is chemicals, hydrolysis-, and microbes-resistant. The drag-chain application is possible at a bending radius of minimum10xd. Due to its weldfield immunity, the cable is very well suited for the flexible application in robotics, machine-tool, and metal-cutting production. The cables meet the UL and CSA (UL 10493/20549; cULus) requirements. Very good EMC-features with shielded versions.

Features	■ flame-retardant VDE0482-332-2-2, DINEN/IEC 60332-2-2, UL/CSA FT2	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ acids- and alkali resistance	
	■ good ozone- and UV-resistance	
	■ hydrolysis strength	
	■ drag-chain- and torsion capability	
	■ good weldfield immunity	
	■ halogen-free DIN EN 50267-2-1, IEC 60754-1, VDE0482-267-2-1	
	■ silicone-free	
Temperature range	operation	-30°C...+90°C
	installation	-40°C...+90°C
	drag-chain	-25°C...+60°C
Bending radius	repeated	10 x Ø-cable
	single	5 x Ø-cable
Rated voltage	≤ 300V	
Color outer-jacket	black similar RAL9005	
Wire-structure	VDE0295 EN/IEC60228, Class5	
	conductor	Cu-ETP1, bare DINEN13602
	insulation	TPE-O (PP 9Y), halogen-free
	stranding	for drag-chain and torsion-application
	jacket	TPE-U (PUR 11Y), halogen-free

	Wire	Type	Wire-structure	Ø - Jacket	Wire color
M8x1	3	LiF9YH11YH 3x0.34mm²	42x Ø0.10mm	4.8mm	BN BU BK
	4	LiF9YH11YH 4x0.34mm²	42x Ø0.10mm	5.1 mm	BN WH BU BK
	5	LiF9YH11YH 5x0.34mm²	42x Ø0.10mm	5.6mm	BN WH BU BK GY
M12x1	3	LiF9YH11YH 3x0.34mm²	42x Ø0.10mm	4.8mm	BN BU BK
	4	LiF9YH11YH 4x0.34mm²	42x Ø0.10mm	5.1 mm	BN WH BU BK
	5	LiF9YH11YH 5x0.34mm²	42x Ø0.10mm	5.6mm	BN WH BU BK GY
	8	LiF9YH11YH 8x0.25mm²	32x Ø0.10mm	6.3mm	WH BN GN YE GY PK BU RD
	12	LiF9YH11YH 12x0.14mm²	18x Ø0.10mm	6.0mm	BN BU WH GN PK YE BK GY
					RD VT GYPK RDBU

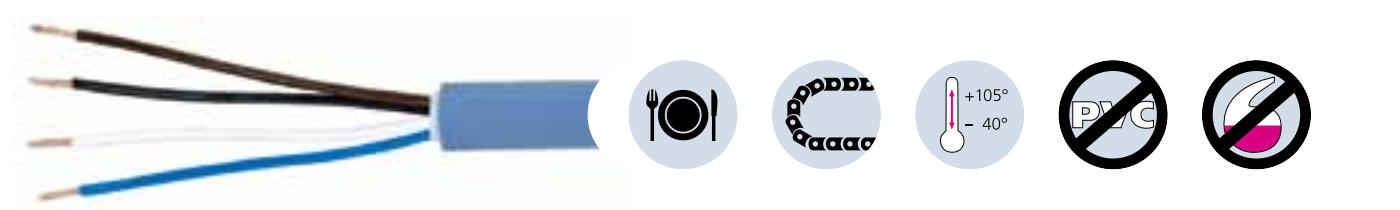


S2430 | Control line_high temperature-proof | PTFE

The thermal resistance of this high-temperature cable extends from -190°C to +260°C. Due to its fully fluorinated jacket and wire insulation, the cable is perfectly suited for applications in high-frequency cables, as control cable in critical temperature areas, and in the computer-, and aviation industry. In addition, it stands out through a very good chemical strength, as well as its ozone- and weather resistance.

Features	■ non flammable	
	■ low smoke	
	■ seawater-resistant	
	■ LABS-free	
	■ RoHs-conform	
	■ excellent chemicals resistance	
	■ very good ozone- and UV-resistance	
	■ hydrolysis strength	
	■ drag-chain capability	
	■ flexible at high and low temperatures	
Temperature range	-190°C...+260°C	
Bending radius	repeated	10 x Ø-cable
	single	5 x Ø-cable
Rated voltage	≤250V	
Color outer-jacket	signal white similar RAL9003	
Wire-structure	conductor	Cu-ET, nickel-plated
	insulation	PTFE (5Y)
	jacket	PTFE (5Y)

Wire	Type	Wire-structure	Ø - Jacket	Wire color
5	Li5Y5Y-OB AWG22	7x0.254mm	3.8mm	BN WH BU BK GY
8	Li5Y5Y-OB AWG24	19x0.127 mm	4.7 mm	WH BN GN YE GY PK BU RD
12	Li5Y5Y-OB AWG26	19x0.102 mm	4.3mm	BN BU WH GN PK YE BK GY
				RD VT GYPK RDBU



PP | F&B-Control line_detergent-resistant | S2300

TPE-O jacketed cable with elevated position-proof wires with an insulation of special polyester. Resistant to all common acidic- and alkaline cleaning- and disinfection agents. PVC-free plastics prevent discoloration and hardening by detergents. Predestined for applications in the food- and beverage industry. Due to the materials used, it is also suitable for applications in machine- and plant construction. High stability, good drag-chain- and torsion capability.

Features	■ flame-retardant DINEN/IEC 60332-1-2, UL758/1581 FT2	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ excellent acids- and alkali resistance	
	■ verified resistance against »P3-topactive P3-topax« cleaning- and disinfection agents	
	■ good ozone- and UV-resistance	
	■ hydrolysis strength DINEN60068-2-78	
	■ drag-chain capable ≥ 4million cycles	
	■ torsion capable up to ±180°/m	
	■ halogen-free DINEN50267-2-1, IEC 60754-1, VDE0482-267-2-1	
	■ cold flexible	
	■ enhanced thermal stability	
Temperature range	operation	-25°C...+105°C
	installation	-40°C...+105°C
	drag-chain	-25°C...+60°C
Bending radius	repeated	10 x Ø-cable
	single	5 x Ø-cable
Rated voltage	≤240VAC	
Color outer-jacket	powder blue similar RAL5014	
Wire-structure	VDE0295 EN/IEC60228, Class5	
	conductor	Cu-ETP1 blank DINEN13602
	insulation	TPE-E, halogen-free
	stranding	tight stranding
	jacket	TPE-O, halogen-free

Wire	Type	Wire-structure	Ø - Jacket	Wire color
4	LiF12Y-TPE-OB 4x0.34mm²	42x0.10mm	4.6mm	BN WH BU BK



S3700® | Bus cable_Industrial Ethernet | PUR

Shielded PUR-cable for safe and industrial-suited data transmission in the automation- and fieldbus technology. The cable meets the UL-Style20963 and the Cat5e (electrical properties according to EN50288-2-2) requirements. Materials and a constructive setup allow for increased mechanical stresses (abrasion, bending, vibrations etc.) of the cable.

Features	■ flame-retardant DIN EN/IEC 60332-1	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ good acids- and alkali resistance	
	■ good microbes- and hydrolysis strength	
	■ good ozone- and UV-resistance	
	■ high flexibility	
	■ halogen-free IEC 60754-1	
	■ oil resistance EN60811-2-1	
Temperature range	operating temp..	-40°C...+70°C
	installation temp..	-40°C...+70°C
	storage temp.	-40°C...+70°C
Bending radius	repeated	7 x Ø-cable
	single	5 x Ø-cable
Rated voltage	30V UL rating	
Color outer-jacket	green similar RAL6018	
Wire-structure	conductor	Cu, bare soft
	insulation	PE2Y, halogen-free DIN EN50290-2-23
	stranding	Tight layer stranding for a flexible application
	shielding	Cu, tinned ~80% optical coverage Polyester foil, alu-laminated (100% coverage)
	jacket	PUR11Y similar DIN VDE0282

Wire	Type	Wire-structure	Ø - Jacket	Wire color
4	Li2Y(St)C11Y 2x2x0.14mm²	7x0.25mm AWG 26	5.2mm	YE OG WH BU



PUR | Bus cable_Industrial Ethernet | S3500[®]

Shielded PUR-cable for safe and industrial-suited data transmission in automation- and fieldbus technology. The cable meets the UL-Style 20963 and the Cat7 (electrical properties according to EN50288-4-2) requirements. Materials and a constructive setup allow for increased mechanical stresses (abrasion, bending, vibrations etc.) of the cable.

Features	■ flame-retardant DIN EN/IEC 60332-1-2	
	■ no flame propagation	
	■ no corrosiveness of combustion gases	
	■ smoke visibility IEC 61034	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ good acids- and alkali resistance	
	■ good microbes- and hydrolysis strength	
	■ good UV-resistant	
	■ high flexibility	
	■ halogen-free IEC 60754-1	
	■ oil resistance EN60811-2-1	
Temperature range	operating temp..	-40°C...+80°C
	installation temp..	-20°C...+60°C
Bending radius	repeated	10 x Ø-cable
	single	5 x Ø-cable
Rated voltage	30V UL rating	
Color outer-jacket	green similar RAL6018	
Wire-structure	conductor	Cu, bare soft
	insulation	PE02Y, foamed
	shielding	Cu, tinned ~70% optical coverage
	jacket	PUR11Y

Wire	Type	Wire-structure	Ø - Jacket	Wire color
8	Li02YSC11Y 4x2x0.14mm²	7xØ0.16mm	6.4mm	WH(OG) OG; WH(GN) GN
		26AWG		WH(BN) BN; WH(BU) BU



S2171[®] | Bus cable_Industrial Ethernet | PUR

Shielded PUR-cable for safe and industrial-suited data transmission in automation- and fieldbus technology. The cable is CMX-verified or meets the Cat5e (electrical properties of EN 50288-2-1) requirements. Materials and a constructive setup allow for increased mechanical stresses (abrasion, bending, vibrations etc.) of the cable. A drag-chain application with up to 3 million bending cycles is possible and risk-free.

Features	■ flame-retardant DIN EN/IEC 60332-1-2	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ good acids- and alkali resistance	
	■ good microbes- and hydrolysis strength	
	■ good ozone- and UV-resistance	
	■ high flexibility, drag-chain capable ≤3million cycles	
	■ halogen-free IEC 60754-1	
	■ oil resistance EN60811-2-1	
Temperature range	operating temp..	-40°C...+70°C
	installation temp..	-20°C...+60°C
	storage temp.	-50°C...+70°C
Bending radius	repeated	7,5x Ø-cable
	single	5 x Ø-cable
Rated voltage	600V UL rating	
Color outer-jacket	green similar RAL6018	
Wire-structure	conductor	Cu-ETP-A...-B DINEN13602
	insulation	PE2Y, halogen-free DIN EN50290-2-23
	stranding	Tight layer stranding for a flexible application
	shielding	Cu, tinned ~85% optical coverage Polyester foil, alu-laminated (100% coverage)
	jacket	inside: thermoplastisches Copolymer (FRNC) outside: PUR11Y

Wire	Type	Wire-structure	Ø - Jacket	Wire color
4	Li2YH(St)C11Y 4x0.34mm²	7x0.25mm	6.5mm	YE OG WH BU
		AWG22		



PUR | Bus cable_Industrial Ethernet | S 3900[®]

Shielded PUR-cable for safe and industrial-suited data transmission in automation- and fieldbus technology. The cable meets UL-Style 2461 (80°C/300V)- and the Cat6A requirements for fieldbuses. Electrical values are according to IEC 61156-5. Materials and a constructive setup allow for mechanical stresses (abrasion, bending, vibrations etc.) of the cable.

Features	■ flame-retardant IEC 60332-1-2	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ acids- and alkali resistance	
	■ microbes- and hydrolysis strength	
	■ UV-resistant	
	■ limited oil resistance	
Temperature range	-40°C...+80°C	
Bending radius	repeated	8 x Ø-cable
	single	4 x Ø-cable
Rated voltage	300V UL rating	
Color outer-jacket	green similar RAL6018	
Wire-structure	conductor	Cu, tinned
	insulation	PE02Y, foamed
	shielding	Cu tinned ~85% optical coverage Polyester foil, alu-laminated (100% coverage)
	jacket	PVC Y

Wire	Type	Wire-structure	Ø - Jacket	Wire color
8	Li02Y(St)CY 4x2xAWG23	AWG23	8.6mm	WH(OG) OG; WH(GN) GN WH(BN) BN; WH(BU) BU



S 3800[®] | Bus cable_Industrial Ethernet | PUR

Shielded PUR-cable for safe and industrial-suited data transmission in automation- and fieldbus technology. The cable is CMX-verified or meets the Cat5e (electrical properties of EN50288-2-1) requirements. Materials and a constructive setup allow for increased mechanical stresses (abrasion, bending, vibrations etc.) of the cable. A drag-chain application with up to 3million bending cycles is possible and risk-free.

Features	■ flame-retardant IEC 60332-1-2	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ good acids- and alkali resistance	
	■ good microbes- and hydrolysis strength	
	■ good ozone- and UV-resistance	
	■ high flexibility, drag-chain capable ≤ 3 million cycles	
Temperature range	operating temp..	-40°C...+80°C
	installation temp..	-40°C...+80°C
	storage temp.	-40°C...+80°C
Bending radius	repeated	8 x Ø-cable
	single	4 x Ø-cable
Rated voltage	300V UL rating	
Color outer-jacket	red similar RAL3020	
Wire-structure	conductor	Cu, tinned
	insulation	PE 2Y, halogen-free
	stranding	Tight layer stranding for a flexible application
	shielding	Cu tinned, ~85% optical coverage
	jacket	inside: FRNC-compound outside: PUR11Y

Wire	Type	Wire-structure	Ø - Jacket	Wire color
4	2YH(ST)C11Y 2x2xAWG22	AWG22	6.5mm	OG WH BU YE



PVC | Bus cable_Industrial Ethernet | S3242[®]

Shielded PVC Ethernet-cable for safe and industrial-suited data transmission in automation- and fieldbus technology. Real-time requirements based on IEC 61158 are viable. The cable meets the UL-Style2464 (80°/300V) and the Cat5e (electrical properties according to EN50288-2-2) requirements. Materials and a constructive setup are suitable for average mechanical stresses (abrasion, bending, vibrations etc.).

Features	■ flame-retardant IEC 60332-1-2	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ good acids- and alkali resistance	
	■ good ozone- and UV-resistance	
	■ high flexibility	
	■ oil resistance	
Temperature range	-40°C...+70°C	
Bending radius	repeated	7 x Ø-cable
	single	5 x Ø-cable
Rated voltage	300V UL rating	
Color outer-jacket	green similar RAL6018	
Wire-structure	conductor	Cu, bare soft
	insulation	PE2Y, halogen-free DIN EN 50290-2-23 (VDE0819)
	shielding	Cu, tinned ~80 % optical coverage Polyester foil, alu-laminated (100% coverage)
	jacket	PVC

Wire	Type	Wire-structure	Ø - Jacket	Wire color
4	Li2Y-(ST)CY 2x2x0.14mm²	7x Ø0.16mm AWG26	4.7 mm	BU OG WHBU WHOG



S3400[®] | Bus cable_Industrial Ethernet | PUR

Shielded PUR Ethernet-cable for safe and industrial-suited data transmission in automation- and fieldbus technology. Real-time requirements according to IEC 61158 are viable. The cable meets the UL-Style 20963 (80°/30V)- and the Cat5 (electrical properties according to EN50288-2-2) requirements. Materials and a constructive setup for increased mechanical stresses (abrasion, bending, vibrations etc.) of the cable. Drag-chain operations/with torsion are possible. High tensile strength through incorporated Kevlar-strands.

Features	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ good acids- and alkali resistance	
	■ good microbes- and hydrolysis strength	
	■ good ozone- and UV-resistance	
	■ high flexibility, drag-chain capable	
	■ halogen-free	
Temperature range	-40°C...+80°C	
	■ oil resistance	
Temperature range	-40°C...+80°C	
Bending radius	repeated	7,5 x Ø-cable
	single	4 x Ø-cable
Rated voltage	30V UL rating	
Color outer-jacket	green similar RAL6018	
Wire-structure	conductor	Cu-ETP-A DIN EN 13602
	insulation	PP9Y DIN EN 50290-2-25 (HD 624.5)
	stranding	Tight layer stranding for a flexible application
	shielding	Cu tinned ~85 % optical coverage Polyester foil, alu-laminated (100% coverage)
	jacket	PUR F45052-F5100 (similar DIN VDE0282)

Wire	Type	Wire-structure	Ø - Jacket	Wire color
4	Li9YC(ST)11Y 4x1x0.15mm²	19x Ø0.10mm AWG26	4.8 mm	BU OG WHBU WHOG

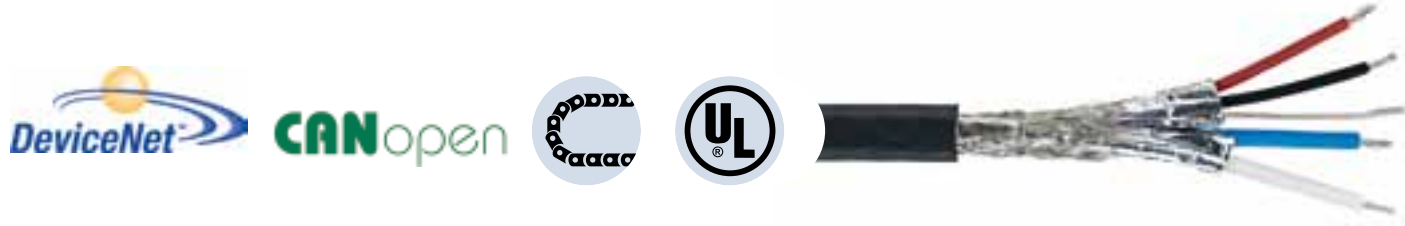


PUR | Bus cable_Profibus | S 1800®

UL- and CSA-listed shielded PUR-cable for automation technology (control of sensors and actuators). Suited for common variants of Profibus DP and Profibus PA. Setup and materials used allow for applications under harsh ambient conditions (abrasion, bending, vibrations etc.). Drag-chain application is possible and trouble-free (>1 million bending cycles).

Features	■ flame-retardant DIN EN60332-2-2, IEC 60332-2-2, CSA FT-2, VDE 0482-332-2-2	
	■ halogen-free DIN EN50267-2-1, IEC 60754-1, VDE0482-267-2-1	
	■ life cycle >20.000h	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ good acids- and alkali resistance	
	■ good microbes- and hydrolysis strength	
	■ good ozone- and UV-resistance	
	■ high flexibility, drag-chain capable >1 million cycles	
	■ good oil resistance	
	■ 100% shielding because of Polyester foil	
Temperature range	operation	-25°C...+80°C
	installation	-50°C...+80°C
	drag-chain	-25°C...+60°C
Bending radius	repeated	10 x Ø-cable
	single	5 x Ø-cable
Rated voltage		300V
Color outer-jacket		violet similar RAL4001
Wire-structure		VDE0295 EN/IEC60228, Class5
	conductor	Cu-ETP1 DIN EN 13602
	insulation	PE02Y, foamed
	shielding foil	Al-PT, 100% optical coverage
	shielding braid	Cu-ETP1, tinned DIN EN 13602
	jacket	PUR11Y

Wire	Type	Wire-structure	Ø - Jacket	Wire color
2	Li02YS-(ST)CB11Y 1x(2x0.34mm²)	19xØ0.15mm	7.6mm	RD GN

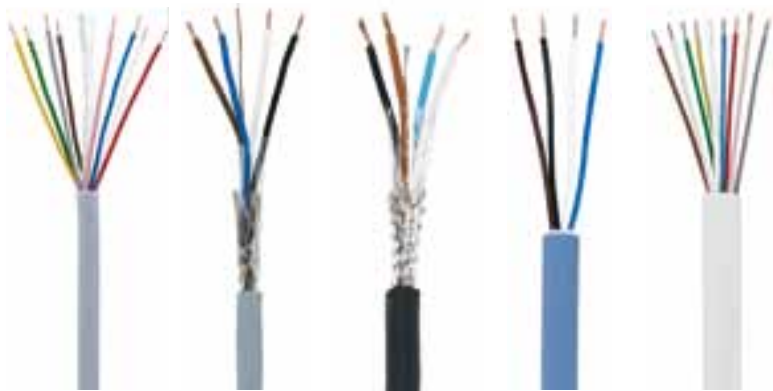


S 2800® | Bus cable_CANopen/Devicenet | PUR

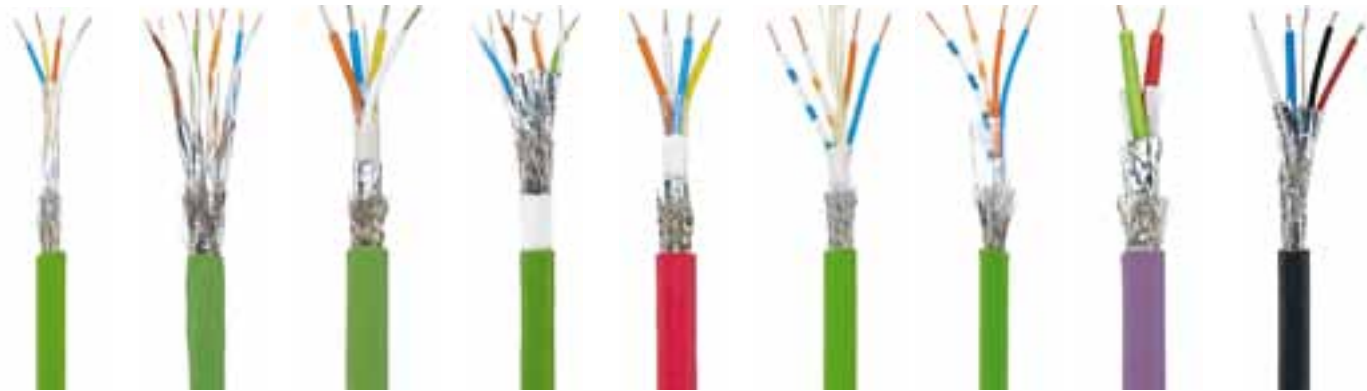
UL- and CSA-listed shielded PUR-cable for automation technology. As a data transmitter, it supports CANopen as well as DeviceNet-based fieldbuses. High transmission rates enable transport of real-time data. Due to the constructive setup and the materials used, increased mechanical stresses (abrasion, bending, vibrations etc.) do not pose any restrictions to the application. Drag-chain application is possible (>1 million bending cycles) and trouble-free.

Features	■ flame-retardant DIN EN60332-1-2, IEC 60332-1-2, ULVW-1, CSA FT-1	
	■ halogen-free DIN EN50267-2-1, IEC 60754-1, VDE0482-267-2-1	
	■ life cycle >20.000h	
	■ seawater-resistant	
	■ recyclable	
	■ LABS-free	
	■ RoHs-conform	
	■ good acids- and alkali resistance	
	■ good microbes- and hydrolysis strength	
	■ good ozone- and UV-resistance	
	■ high flexibility, drag-chain capable >1 million cycles	
	■ good oil resistance	
Temperature range	operation	-25°C...+80°C
	installation	-50°C...+80°C
	drag-chain	-25°C...+60°C
Bending radius	repeated	10 x Ø-cable
	single	5 x Ø-cable
Rated voltage		≤ 300V
Color outer-jacket		black similar RAL9005
Wire-structure	conductor	Cu-ETP1, tinned DIN EN 13602
	insulation	Signal-pair PE02Y, foamed Power-pair PE2Y
	stranding	Tight layer stranding for a flexible application
	jacket	PUR11Y

Wire	Type	Wire-structure	Ø - Jacket	Wire color
4	LiV02YS(St)-CB-11Y	19xØ0.13mm (0.25mm²)	6.7mm	RD BK WH BU
	(2x0.25mm²)+(2x0.34mm²)	19xØ0.15mm (0.34mm²)		



	PVC P00	PVC P01 [®]	PUR S370 [®]	PP S2300 F&B	PTFE S2430 HT
Applications	Machinery and equipment manufacturing	★★★★	★★★★	★★★★	★
	Automotive industry	★★	★★	★★★★	★★
	Robotics	★	★	★★★★	★★
	Food and beverage industry	★★★★	★★★★	★	★★
	Packaging and filling systems	★★★★	★★★★	★	★★
	Building installations	★★	★★	★★	★★
	Wind power plants	★★	★★	★★★★	★★★★
Resistance	flame-retardant	★★★★	★★★★	★★★★	★★★★
	oil resistance	★★	★★	★★	★★★★
	weldfield immunity	★	★	★★★★	★★
	drag-chain capability	★	★	★★★★	★★
	acids- and alkali resistance	★	★	★	★★★★
	seawater-resistant	★★	★★	★★	★★★★
	ozone- and UV-resistance	★	★	★★★★	★★★★
	hydrolysis strength	★★	★★	★★	★★★★
	microbes strength	★★	★★	★★	★★★★
	Bending strength (repeated)	10xØ	10xØ	10xØ	10xØ
Features	Bending strength (single)	5xØ	5xØ	5xØ	5xØ
	Temperature range (repeated)	0°C...+80°C	0°C...+80°C	-30°C...+90°C	-25°C...+105°C
	Temperature range (single)	-25°C...+80°C	-25°C...+80°C	-40°C...+90°C	-40°C...+105°C
	Shielding	optional	optional	optional	optional
Approvals	ROHS	✓	✓	✓	✓
	UL and/or CSA		✓	✓	
	GOST	✓	✓	✓	✓
	ECOLAB	✓			✓
	ESCHA Product line	AL BL SV FB NM Ventil	AL BL SV NM Ventil	AL BL SV NM Ventil	FB plus HT
	Catalogue page	181 182	181 182	183 184	186 185



PUR Cat5e S3700 [®] Ind. Ethernet	PUR Cat7 S3500 [®] Ind. Ethernet	PUR Cat5e S2171 [®] Profinet	PUR Cat5e S3900 [®] Profinet	PUR Cat5e S3800 [®] sercos	PVC Cat5e S3242 [®] EtherCAT	PUR Cat5 S3400 [®] EtherCAT	PUR S1800 [®] Profibus	PUR S2800 [®] DeviceNet
★	★	★★	★	★	★	★	★★	★★
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
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★★	★★	★★	★★	★★	★★	★★	★★	★★
7xØ	10xØ	7,5xØ	8xØ	8xØ	7xØ	7,5xØ	10xØ	10xØ
5xØ	5xØ	5xØ	4xØ	4xØ	5xØ	4xØ	5xØ	5xØ
-40°C...+70°C	-40°C...+80°C	-40°C...+70°C	-40°C...+80°C	-40°C...+80°C	-40°C...+70°C	-40°C...+80°C	-25°C...+80°C -50°C...+80°C	-25°C...+80°C -50°C...+80°C
yes	yes	yes	yes	yes	yes	yes	yes	yes
✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓
					✓			
IE	IE	IE	IE	IE	IE	IE	PB	CD
187	188	189	190	191	192	193	194	195

All data in this matrix serve basic orientation. Our specialists will readily advise you on your specific application. The cables listed here only describe the ESCHA Standard product range. Ask us if your requested cable quality is not included.

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