

SPECIALS

TAILOR MADE

STANDARD

Connector- and
Housing technology

Catalogue 2012



ESCHA Bauelemente GmbH
Elberfelder Str. 32 | 58553 Halver
Phone +49 2353 708 - 800
Fax +49 2353 708 - 410
Germany



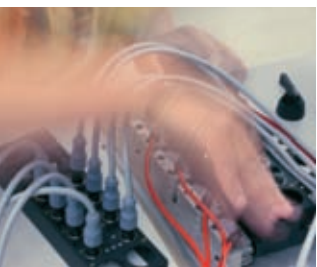
ESCHA: the company

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).





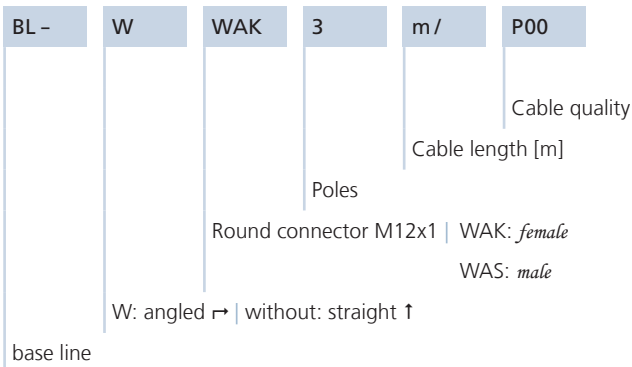
Actuator-/Sensor round connectors		Description	Version	Page
M12x1	base line	Our Base-Round Connector Line: high standard, optimized costs.	BL: $f \mid m \mid \uparrow \mid \curvearrowright$	06 - 07
			BL: junction cable	08 - 09
M12x1	Automation Line	The Automation Line combines all automation requirements 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: $f \mid \uparrow \mid \curvearrowright \mid \odot$	24 - 25
			AL: $m \mid \uparrow \mid \curvearrowright \mid \odot$	26 - 27
			AL: junction cable $\odot$	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 Sealing 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-, disinfectants 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 Cat5e, Cat6a	IE: $m \mid \uparrow \mid \curvearrowright \mid \img alt="field-wireable icon" \mid 4/D \mid 8/X$	66 - 67
			IE: RJ45	68 - 69
			IE: junction cable	70 - 71
			IE: flanges	72 - 73
		Profibus	PB: $f \mid m \mid \uparrow \mid \curvearrowright \mid \img alt="field-wireable icon"$	74 - 75
			PB: junction cable	76 - 77
			PB: flanges	78 - 79
		CANopen DeviceNet	CD: $f \mid m \mid \uparrow \mid \curvearrowright \mid \img alt="field-wireable icon"$	80 - 81
			CD: junction cable	82 - 83
			CD: flanges	84 - 85
		Technical drawings flanges	IE PB CD	86 - 87

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



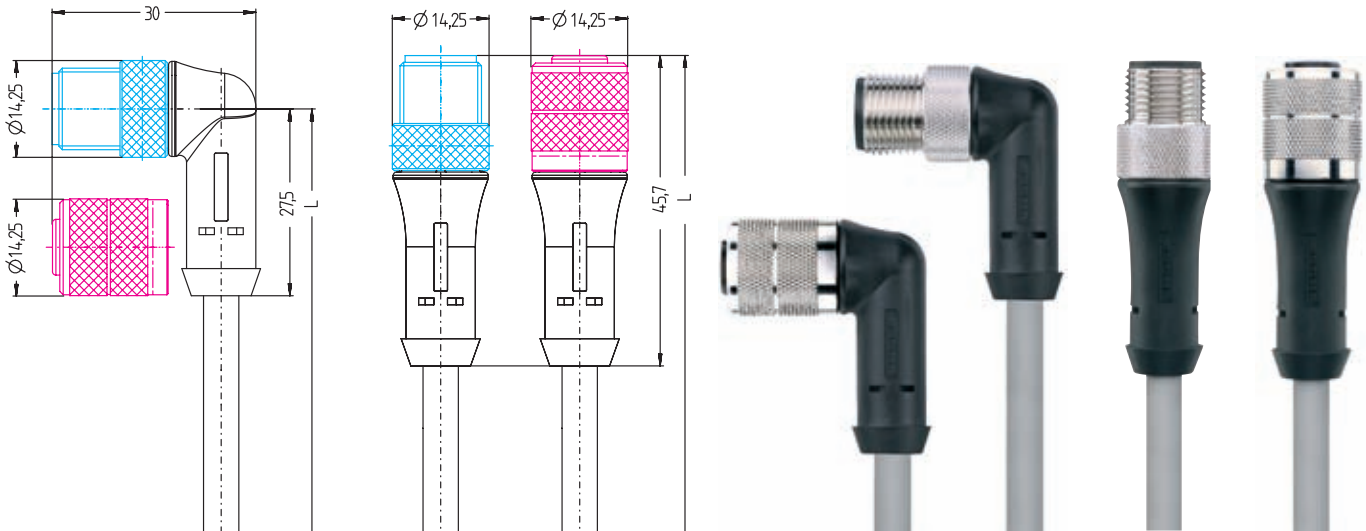
		Description	Version	Page
M8x1 Ø8snap	Automation Line	All Automation Line advantages for M8x1 Ø8 snap (snap-in design). This extensive productline permanently offers you what you look for. If not, give us a call! Modifications of standard products are our strength.	AL_M8x1: $f \mid \uparrow \mid \curvearrowright \mid \text{LED}$	88 - 89
			AL_M8x1: $m \mid \uparrow \mid \curvearrowright$	94 - 95
			AL_M8x1: junction cable	98 - 101
			AL_M8x1: $f \mid m \mid \uparrow \mid \curvearrowright \mid \odot$	102 - 103
			AL_M8x1: junction cable $\odot$	104 - 105
			AL_Ø8snap: $f \mid \uparrow \mid \curvearrowright \mid \text{LED}$	90 - 91
			AL_Ø8snap: $f \mid \uparrow \mid \curvearrowright \mid$ with locking-ring	92 - 93
			AL_Ø8snap: $m \mid \uparrow \mid \curvearrowright$	96 - 97
M8x1	Field-wireable			106 - 107
M8x1 Ø8snap	Flanges			108 - 109
M8x1 Ø8snap	Insertion connector			110 - 111
M8x1	Food & Beverage plus	Resistant to sour/alkaline cleaning-, disinfectants agents, PVC-free, IP67/IP69K.	FB: M8x1: $f \mid m \mid \uparrow \mid \curvearrowright$	112 - 113
			FB: M8x1: junction cable	114 - 115
M8x1	High temperature-proof	Up to +150°C permanent operating temp. +200°C maximum operating temperature.	HT: M8x1: $f \mid m \mid \uparrow \mid \curvearrowright$	116 - 117
			HT: M8x1: junction cable	118 - 119
M16x0,75		I/O-junction box connecting cable	$f \mid \uparrow \mid \curvearrowright \mid \img alt="field-wireable icon"$	120 - 121
M23x1		I/O-junction box connecting cable	$f \mid \uparrow \mid \curvearrowright \mid \img alt="field-wireable icon"$	122 - 123
Valve connectors		The new valve-connector generation: minimum of instalation space, 24VAC/DC, 230VAC/DC, protective circuits and an all-around clearly visible LED.	Type A	124 - 125
			Type B BI	126 - 127
			Type C CI	128 - 129
			junction cable	130 - 131
Verteiler	2-way junction-box-systems		Type MB_ M8x1	132 - 133
			Type MB_ M12x1	134 - 135
			Type S55 M8x1/M12x1	136 - 137
			Type S89 M8x1/M12x1	138 - 139
	T-junction		M12x1	140 - 141
			M8x1/Ø8snap/M12x1	142 - 143
			M8x1/M12x1	144 - 145
	Adapter			
I/O-junction boxes	M12x1			146 - 147
	M8x1/Ø8snap			148 - 149
Accessories			Technical drawings I/O-junction boxes	150 - 151
			Safety-caps, safty-stoppers	M8x1/Ø8snap M12x1 152
			Mounting- and safty-solutions	M8x1/Ø8snap M12x1 S89 153
			Torque-wrench set	M8x1/M12x1 154
			Labels	154
			Spare nuts for flanges, solder tags	154
Techn. information		Standards, certifications, IP, technical data, wiring instructions, cable qualitys, colour guide, AWG vs. mm²...		155 - 161
Address register		Representatives abroad, Representatives Germany, License productions, Headquarters		162 - 163

f = female | m = male | $\uparrow$ = straight | $\curvearrowright$ = angled | $\odot$ = 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.

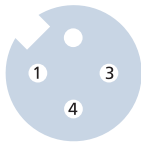


base^{line} M12x1

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

Coding A

3 poles | *female*

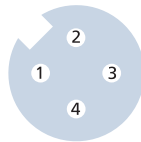


1BN | 3BU | 4BK

3 poles | *male*

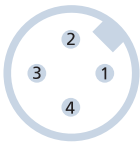


4 poles | *female*

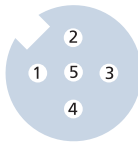


1BN | 2WH | 3BU | 4BK

4 poles | *male*



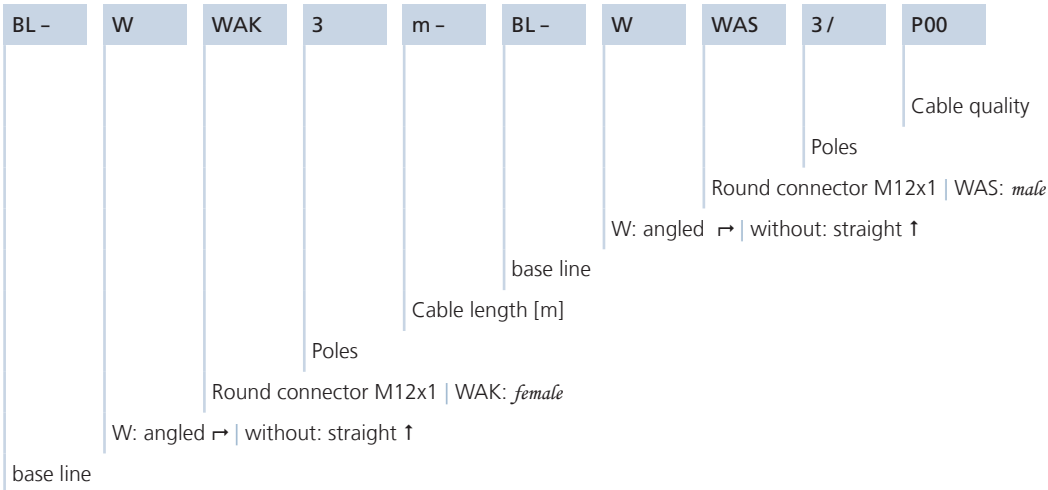
5 poles | *female*



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

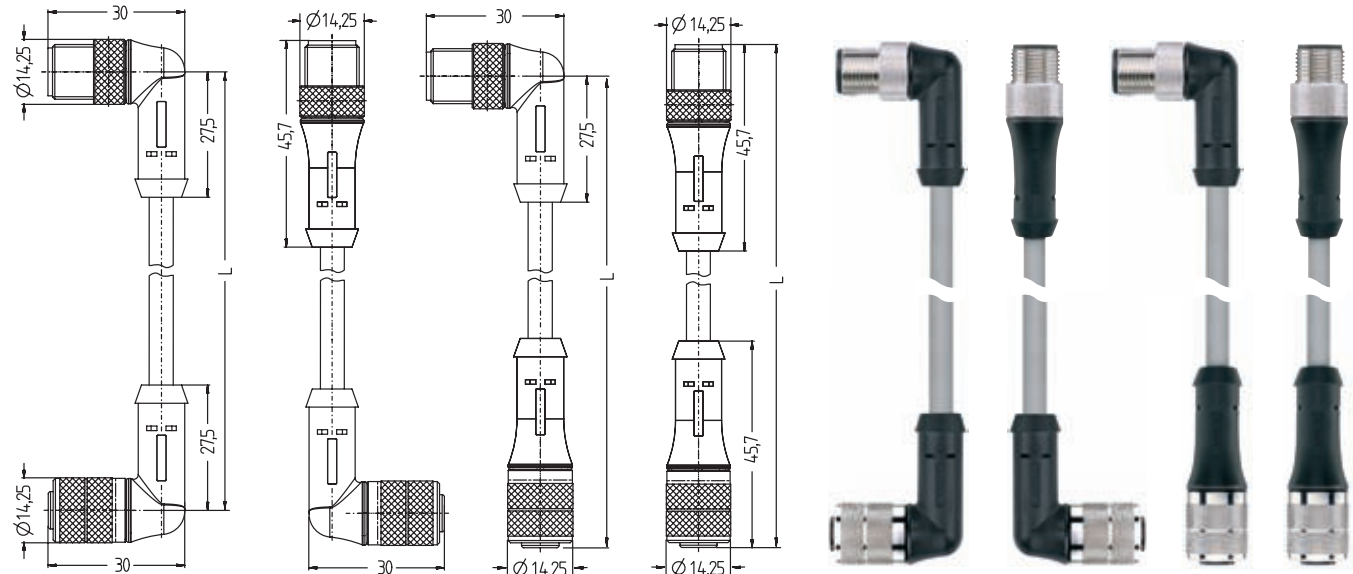
5 poles | *male*





Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	5m	10m
BL_M12x1	$f \mid \uparrow _ m \mid \uparrow$	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	
	$f \mid \uparrow _ m \mid \uparrow$	PVC P01 [®]	3	BL-WAK3-m-BL-WAS4.5/P00	8052018	8048906	8047925	
			4	BL-WAK4-m-BL-WAS4.5/P00	8052018	8048906	8047925	
			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	
	$f \mid \uparrow _ m \mid \uparrow$	PUR S370 [®]	3	BL-WAK3-m-BL-WAS4.5/P01	8052033	8050998	8050999	
			4	BL-WAK4-m-BL-WAS4.5/P01	8052033	8050998	8050999	
			5	BL-WAK4.5-m-BL-WAS4.5/P01	8052033	8050998	8050999	
		PVC P00	3	BL-WAK3-m-BL-WWAS3/S370	8052009	8050736	8047897	
			4	BL-WAK4-m-BL-WWAS4/S370	8052010	8050738	8047898	
	$f \mid \uparrow _ m \mid \uparrow$	PVC P01 [®]	5	BL-WAK4.5-m-BL-WWAS4.5/S370	8052011	8050740	8047899	
			3	BL-WAK3-m-BL-WWAS3/P00	8052022	8050892	8047929	
			4	BL-WAK4-m-BL-WWAS4/P00	8052023	8050894	8047930	
		PVC P01 [®]	5	BL-WAK4.5-m-BL-WWAS4.5/P00	8052024	8050896	8047931	
			3	BL-WAK3-m-BL-WWAS3/P01	8052038	8051010	8051011	
	$f \mid \uparrow _ m \mid \uparrow$	PUR S370 [®]	4	BL-WAK4-m-BL-WWAS4/P01	8052039	8051013	8051014	
			5	BL-WAK4.5-m-BL-WWAS4.5/P01	8052040	8051016	8051017	
		PVC P00	3	BL-WWAK3-m-BL-WAS3/S370	8052012	8050742	8047900	
			4	BL-WWAK4-m-BL-WAS4/S370	8052013	8050744	8047901	
	$f \mid \uparrow _ m \mid \uparrow$	PVC P00	5	BL-WWAK4.5-m-BL-WAS4.5/S370	8052014	8050746	8047902	
			3	BL-WWAK3-m-BL-WAS3/P00	8052025	8047957	8047932	
			4	BL-WWAK4-m-BL-WAS4/P00	8052026	8050903	8047933	
		PVC P01 [®]	5	BL-WWAK4.5-m-BL-WAS4.5/P00	8052029	8050911	8047934	
			3	BL-WWAK3-m-BL-WAS3/P01	8052041	8051019	8051020	
	$f \mid \uparrow _ m \mid \uparrow$	PVC P01 [®]	4	BL-WWAK4-m-BL-WAS4/P01	8052042	8051022	8051023	
			5	BL-WWAK4.5-m-BL-WAS4.5/P01	8052043	8051025	8051026	
		PUR S370 [®]	3	BL-WWAK3-m-BL-WWAS3/S370	8052006	8050730	8047894	
			4	BL-WWAK4-m-BL-WWAS4/S370	8052007	8050732	8047895	
	$f \mid \uparrow _ m \mid \uparrow$	PVC P00	5	BL-WWAK4.5-m-BL-WWAS4.5/S370	8052008	8050734	8047896	
			3	BL-WWAK3-m-BL-WWAS3/P00	8052019	8050886	8047926	
			4	BL-WWAK4-m-BL-WWAS4/P00	8052020	8050888	8047927	
		PVC P01 [®]	5	BL-WWAK4.5-m-BL-WWAS4.5/P00	8052021	8050890	8047928	
			3	BL-WWAK3-m-BL-WWAS3/P01	8052034	8051001	8051002	
	$f \mid \uparrow _ m \mid \uparrow$	PVC P01 [®]	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.

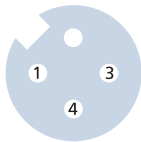


base^{line} M12x1 junction cable

Technical data	Poles	Value
Rated voltage [U _{max}]	3, 4	250V
	5	60V
Current load [I _{max}]	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
	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*

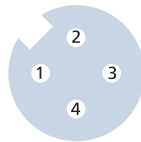


1BN | 3BU | 4BK

3 poles | *male*



4 poles | *female*

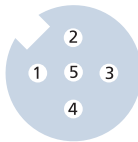


1BN | 2WH | 3BU | 4BK

4 poles | *male*



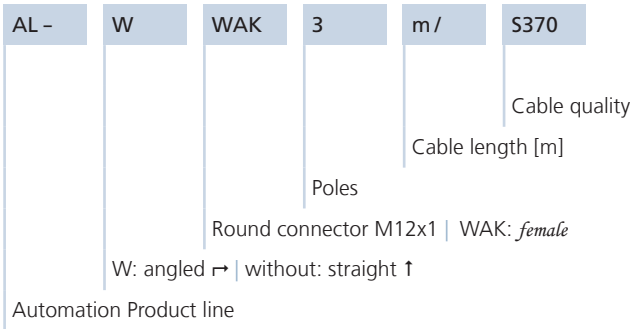
5 poles | *female*



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

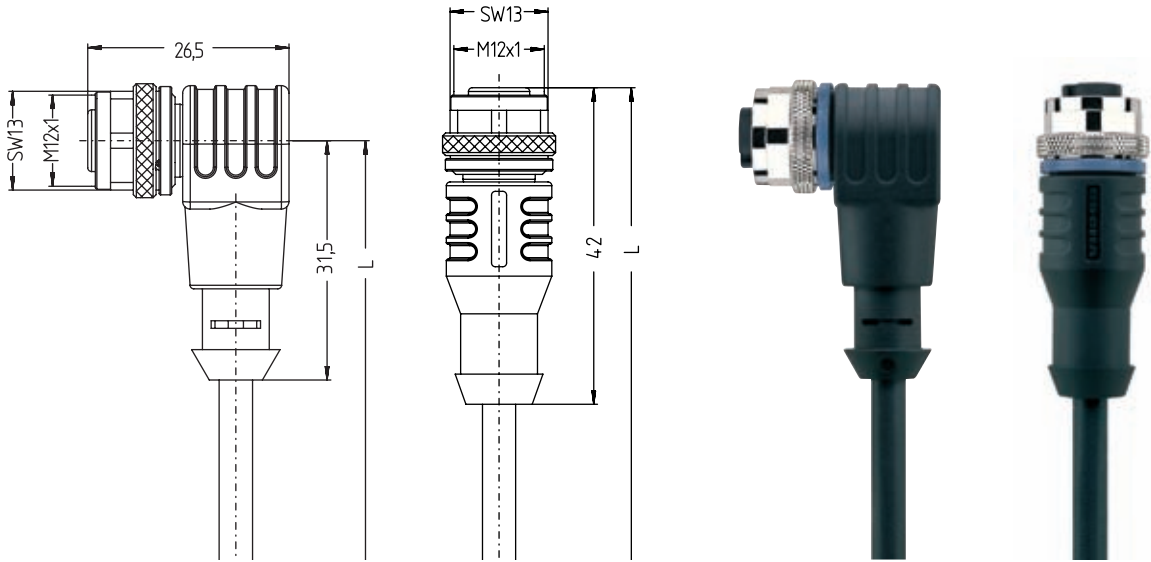
5 poles | *male*





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
			12	AL-WAK12-m/S370	8046918	8046920	8046921
		PVC P00	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
			12	AL-WAK12-m/P00	8051101	8051102	8051103
		PVC P01 [®]	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
			8	AL-WAK8-m/P01	8051298	8051299	8051300
			12	AL-WAK12-m/P01	8051310	8051311	8051312
	<i>f</i> ↗	PUR S370 [®]	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
			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
		PVC P00	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
			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
		PVC P01 [®]	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 <i>female</i>		
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

AL -

W

WAK

3

P2 -

m /

S370

Cable quality

Cable length [m]

PNP | Quantity LEDs + circuit

Poles

Round connector M12x1 | WAK: *female*

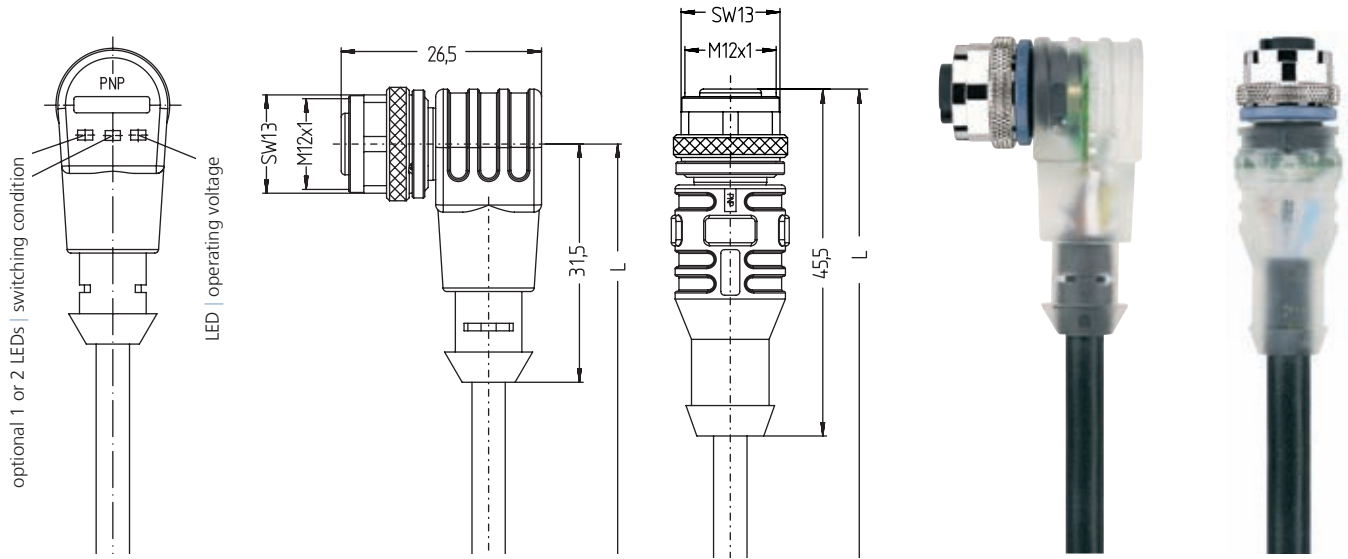
W: angled ↗ | without: straight ↑

Automation Line



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M12x1	f ↑	PUR S370 [®]	3	AL-WAK3P2-m/S370	8044524	8045592	8047386
			4	AL-WAK4P2-m/S370	8048938	8048114	8048116
		PVC P00	3	AL-WAK3P2-m/P00	8052508	8052509	8052510
			4	AL-WAK4P2-m/P00	8052514	8052515	8052516
		PVC P01 [®]	3	AL-WAK3P2-m/P01	8052511	8052512	8052513
			4	AL-WAK4P2-m/P01	8052517	8052518	8052519
	f ↗	PUR S370 [®]	3	AL-WWAK3P2-m/S370	8044219	8045217	8044523
			4	AL-WWAK4P2-m/S370	8045237	8045238	8045239
			4	AL-WWAK4P3-m/S370	8044564	8044565	8044566
			4	AL-WWAK4P3.1-m/S370	8045911	8045912	8045913
			4	AL-WWAK4P3.2-m/S370	8045914	8045915	8045916
			4+PE	AL-WWAK5P3-m/S370	8044221	8045218	8045219
		PVC P00	4+PE	AL-WWAK5P3.1-m/S370	8045917	8045918	8045919
			3	AL-WWAK3P2-m/P00	8051121	8051119	8051120
			4	AL-WWAK4P2-m/P00	8051122	8051123	8051124
			4	AL-WWAK4P3-m/P00	8051125	8051126	8051127
			4	AL-WWAK4P3.1-m/P00	8051128	8051129	8051130
			4	AL-WWAK4P3.2-m/P00	8051131	8051132	8051133
		PVC P01 [®]	4+PE	AL-WWAK5P3-m/P00	8051134	8051135	8051136
			4+PE	AL-WWAK5P3.1-m/P00	8051137	8051138	8051139
			3	AL-WWAK3P2-m/P01	8051328	8051329	8051330
			4	AL-WWAK4P2-m/P01	8051331	8051332	8051333
			4	AL-WWAK4P3-m/P01	8051334	8051335	8051336
			4	AL-WWAK4P3.1-m/P01	8051337	8051338	8051339
			4	AL-WWAK4P3.2-m/P01	8051340	8051341	8051342
			4+PE	AL-WWAK5P3-m/P01	8051343	8051344	8051345
			4+PE	AL-WWAK5P3.1-m/P01	8051346	8051347	8051348

Other versions and cable-lengths are available upon request.



Automation Line®

M12x1 *female* LED

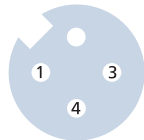
Technical data	Poles	Value
Rated voltage [U _{max}]	3, 4, 4+PE	10...24V _{DC}
Current load [I _{max}]	3, 4, 4+PE	4A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, transparent
	Contact carriers	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, 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*

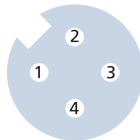
3 poles

4 poles

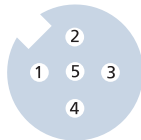
4 poles+PE



1BN | 3BU | 4BK



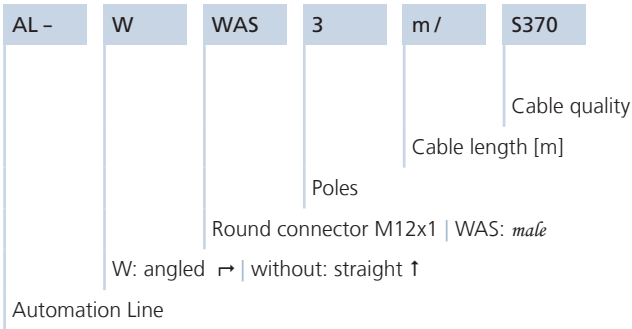
1BN | 2WH | 3BU | 4BK



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

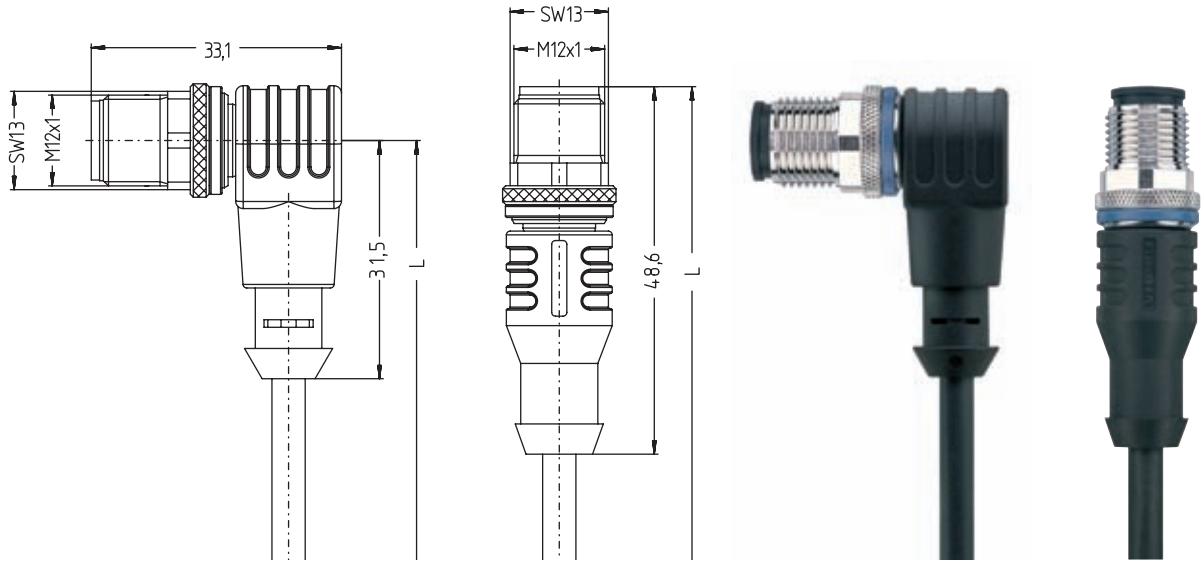
LED-versions	4P2	4P3	5P3
3P2			

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

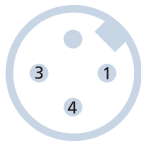


Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_M12x1	<i>m</i> ↑	PUR S370 [®]	3	AL-WAS3-m/S370	8043804	8043805	8043806
			4	AL-WAS4-m/S370	8043817	8043818	8043819
			4+PE	AL-WAS5-m/S370	8046024	8046026	8046027
			5	AL-WAS4.5-m/S370	8043829	8043830	8043831
			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
	<i>m</i> ↗	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
		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	AL-WWAS3-m/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 [®]	AL-WWAS3-m/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

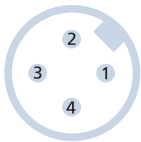
Other versions and cable-lengths are available upon request.



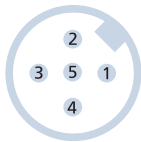
Automation Line® M12x1 <i>male</i>		
Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE, 5	60V
	8, 12	30V
Current load [Imax]	3, 4, 4+PE, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carriers	TPU, BK
	Contacts	CuZn, gold-plated
	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



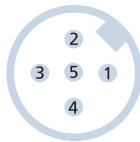
1BN | 3BU | 4BK



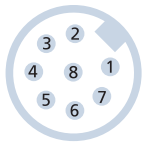
1BN | 2WH
3BU | 4BK



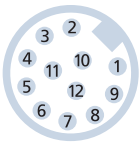
1BN | 2WH | 3BU
4BK | 5GNYE



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

G

4

m /

S370

Cable quality

Cable length [m]

Poles

Grip with thread

Round connector M12x1 | WAK: *female*

WAS: *male*

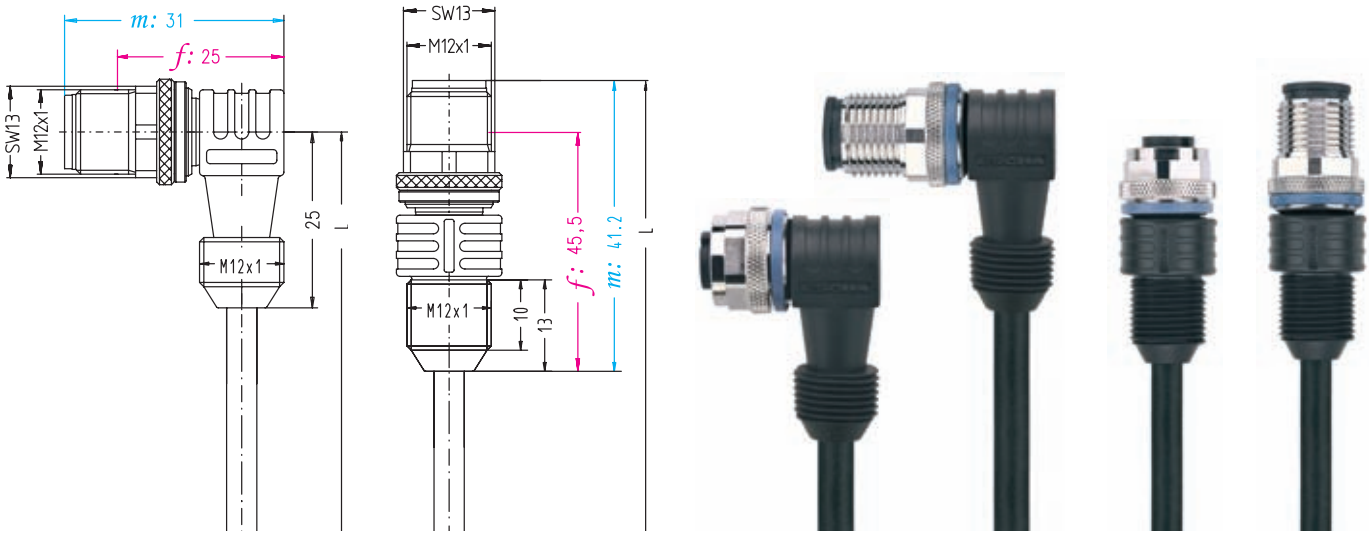
W: angled ↗ | without: straight ↑

Automation Line



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						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.

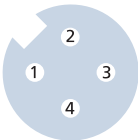


Automation Line® M12x1 grip with thread		
Technical data	Poles	Value
Rated voltage [Umax]	4	250V
Current load [Imax]	4	4A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Material	Grip	TPU, BK
	Contact carriers	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	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

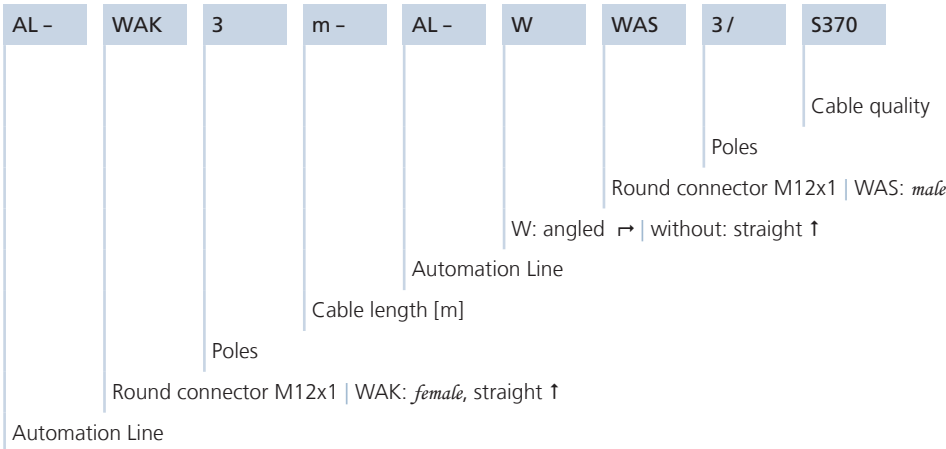
Coding A

4 poles | *female*

4 poles | *male*

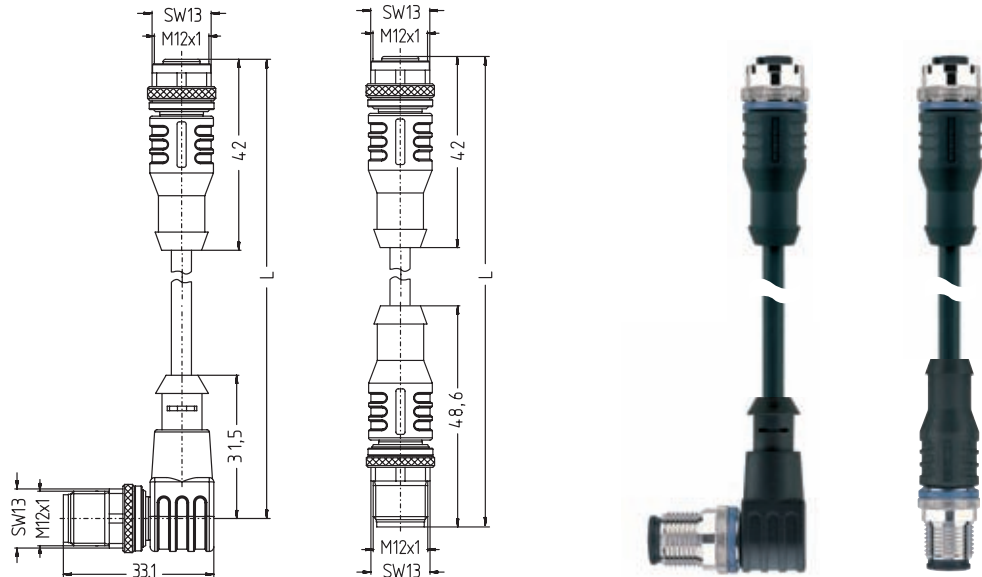


1BN | 2WH | 3BU | 4BK



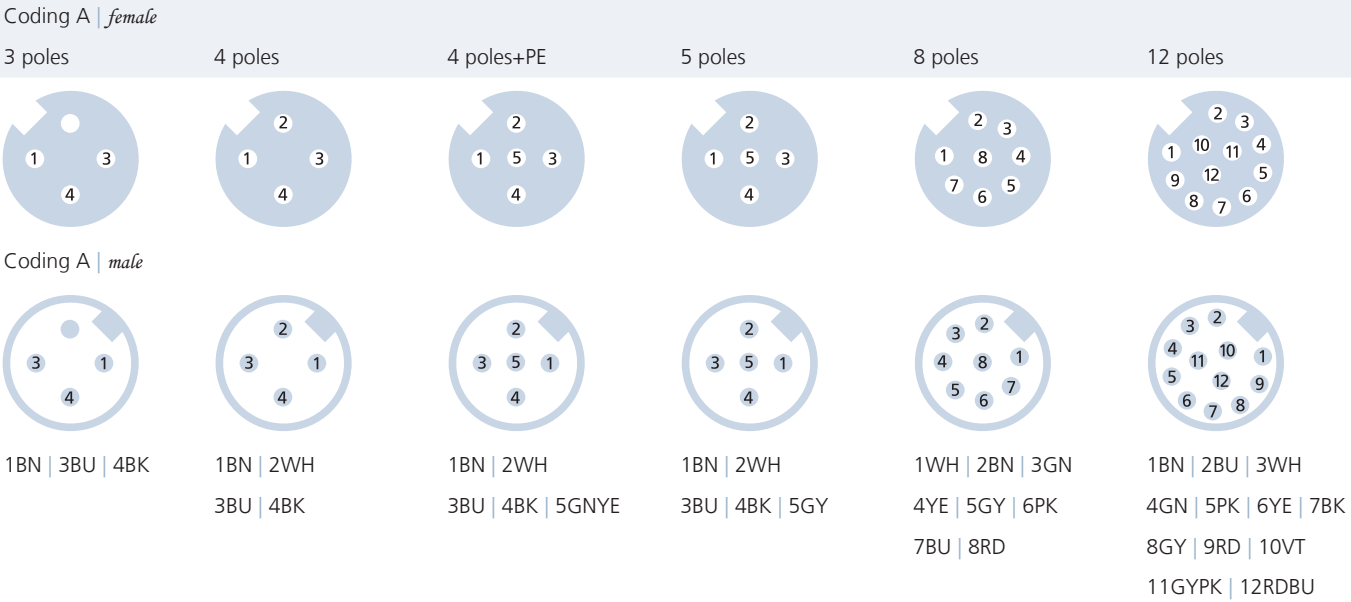
Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_M12x1	$f \mid \uparrow _ m \mid \uparrow$	PUR S370 [®]	3	AL-WAK3-m-AL-WAS3/S370	8044858	8044029	8044030
			4	AL-WAK4-m-AL-WAS4/S370	8044813	8044041	8044042
			4+PE	AL-WAK5-m-AL-WAS5/S370	8046647	8046031	8046032
			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
	$f \mid \uparrow _ m \mid \rightarrow$	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	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 [®]	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

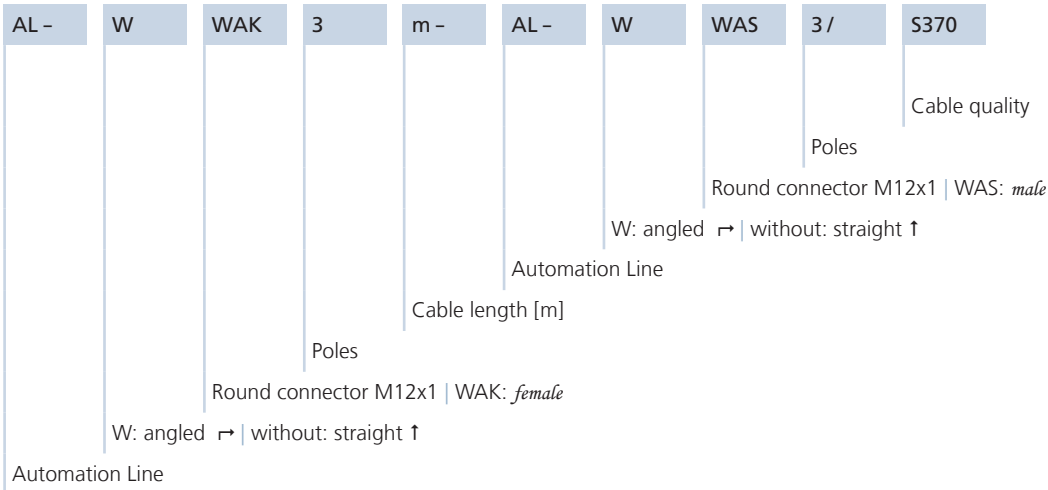
Other versions and cable-lengths are available upon request.



Automation Line® M12x1 junction cable

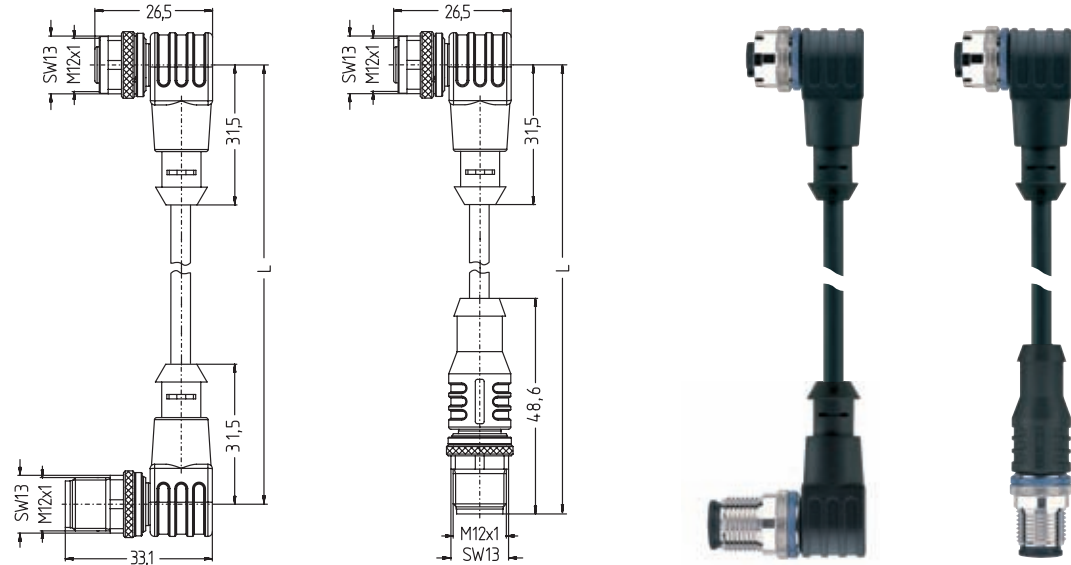
Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE, 5	60V
	8, 12	30V
Current load [Imax]	3, 4, 4+PE, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	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





Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_M12x1	$f \mid \rightarrow _ m \mid \uparrow$	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
	$f \mid \rightarrow _ m \mid \rightarrow$	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

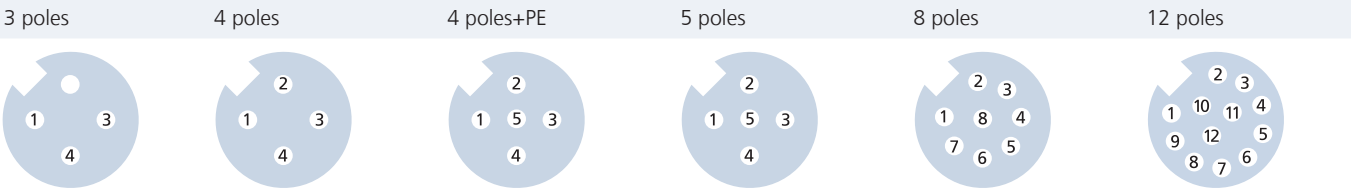
Other versions and cable-lengths are available upon request.



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*



Coding A | *male*



AL -

W

WAK

3

P2 -

m -

AL -

WAS

3 /

S370

Cable quality

Poles

Round connector M12x1 | WAS: *male*, straight ↑

Automation Line

Cable length [m]

PNP | Quantity LEDs + circuit

Poles

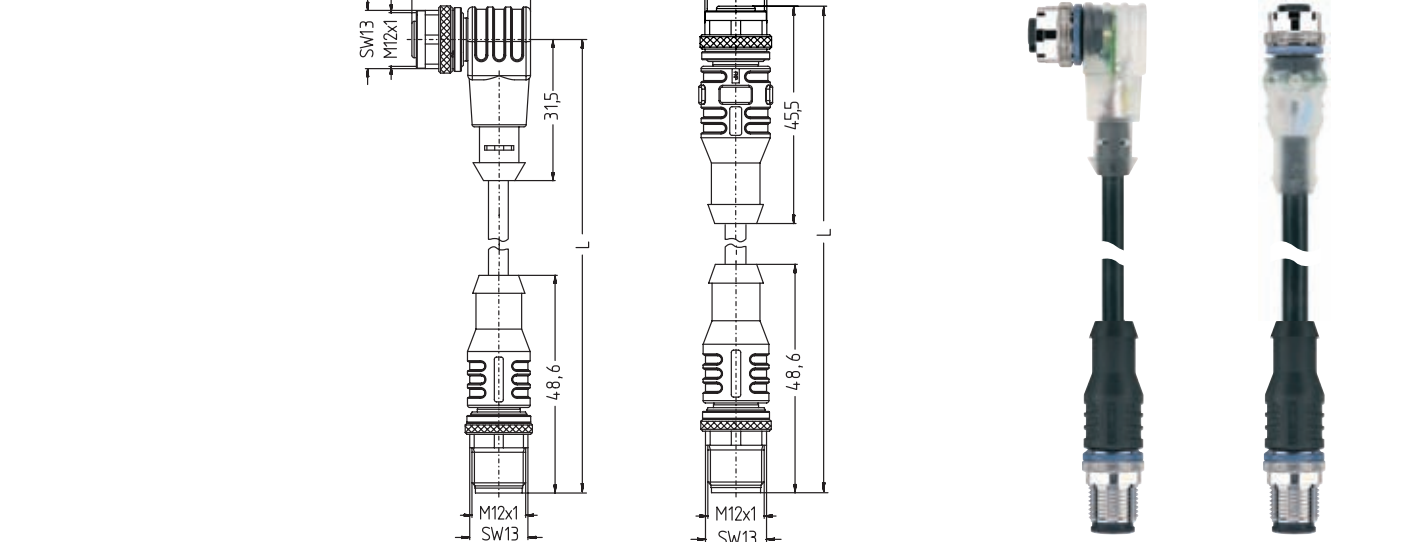
Round connector M12x1 | WAK: *female*

W: angled ↗ | without: straight ↑

Automation Line



not for P00



Automation Line® M12x1 junction cable

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, 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*

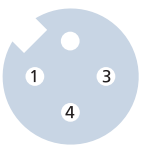
3 poles | *male*

4 poles | *female*

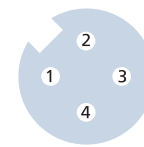
4 poles | *male*

4 poles+PE | *female*

4 poles+PE | *male*


1BN | 3BU | 4BK


1BN | 2WH | 3BU | 4BK


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

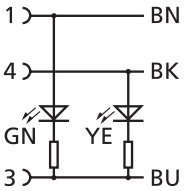
LED-versions

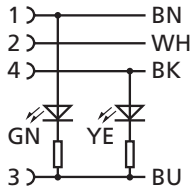
3P2

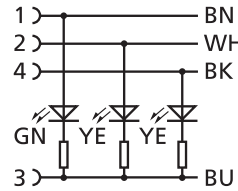
4P2

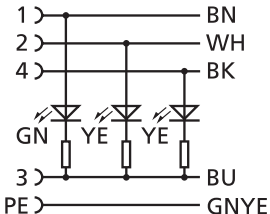
4P3

5P3

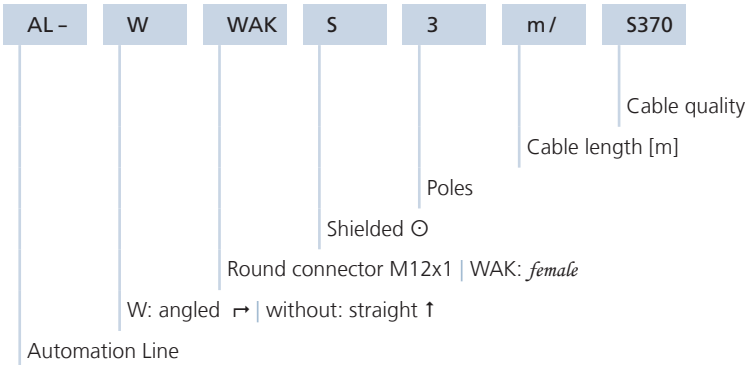






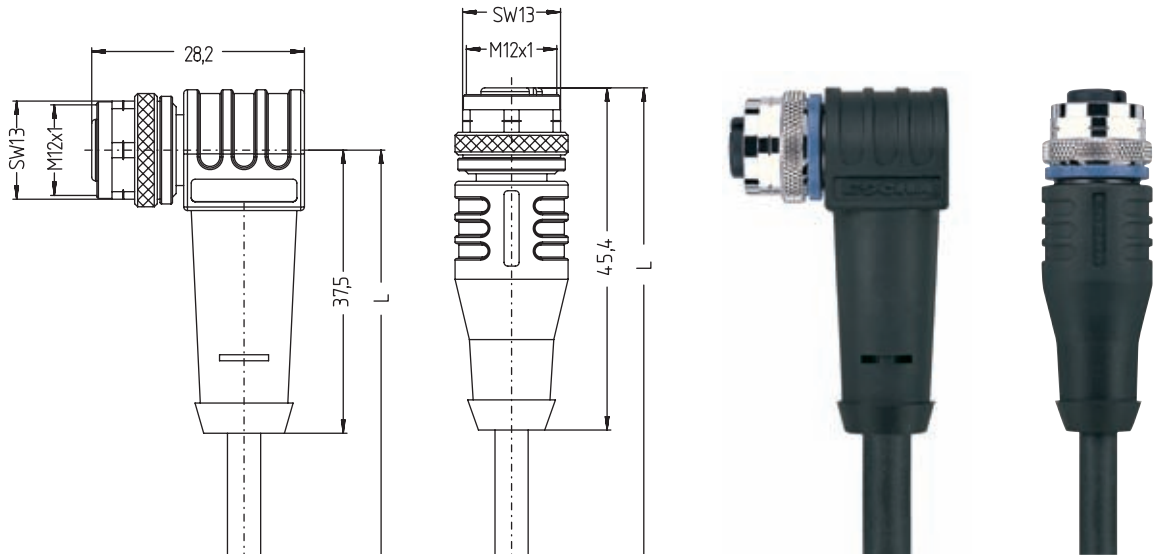


3.1 = GN/RD/YE | 3.2 = GN/WH/YE



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M12x1 ☉	<i>f</i> ↑	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
			8	AL-WAKS8-m/P00	8051200	8051201	8051202
			12	AL-WAKS12-m/P00	8051212	8051213	8051214
		PVC P01 [®]	3	AL-WAKS3-m/P01	8051374	8051375	8051376
			4	AL-WAKS4-m/P01	8051386	8051387	8051388
			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
	<i>f</i> ↗	PUR S370 [®]	3	AL-WWAKS3-m/S370	8046220	8046221	8046222
			4	AL-WWAKS4-m/S370	8046232	8045279	8045280
			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 P00	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
		PVC P01 [®]	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

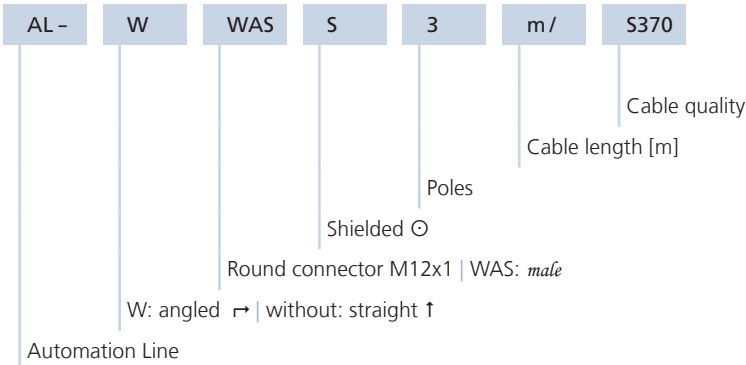
Other versions and cable-lengths are available upon request.



Automation Line® M12x1 shielded ☉ | *female*

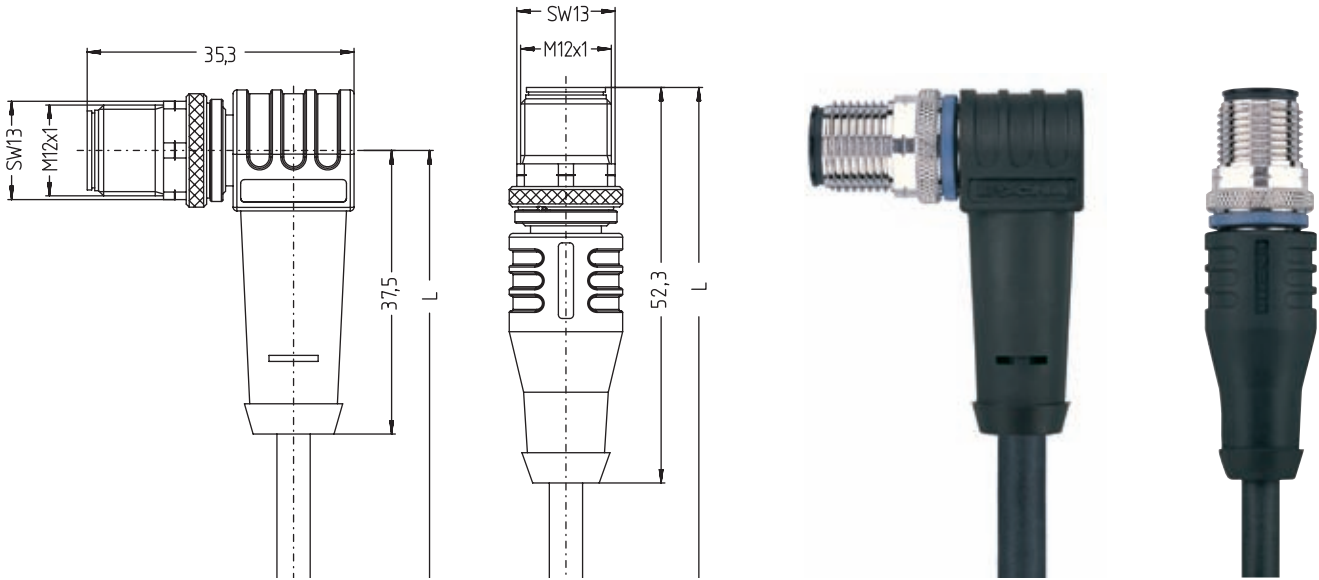
Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
	8, 12	30V
Current load [Imax]	3, 4, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
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 <i>female</i>				
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.

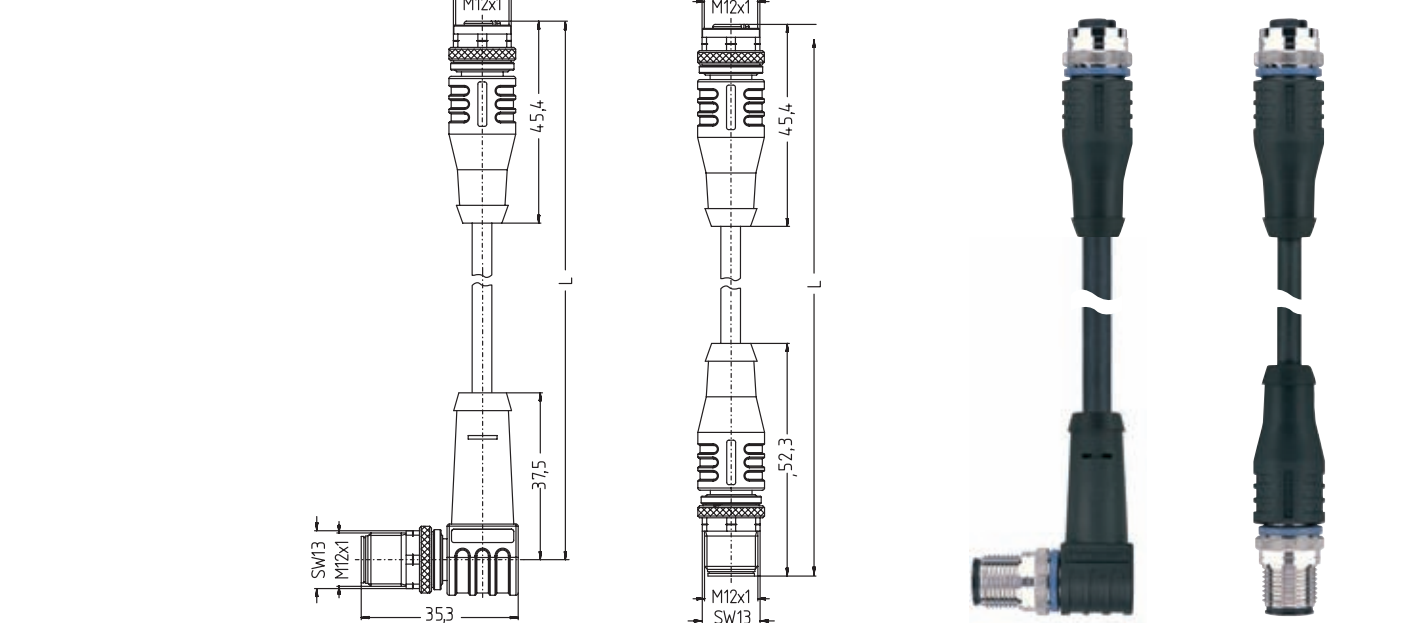
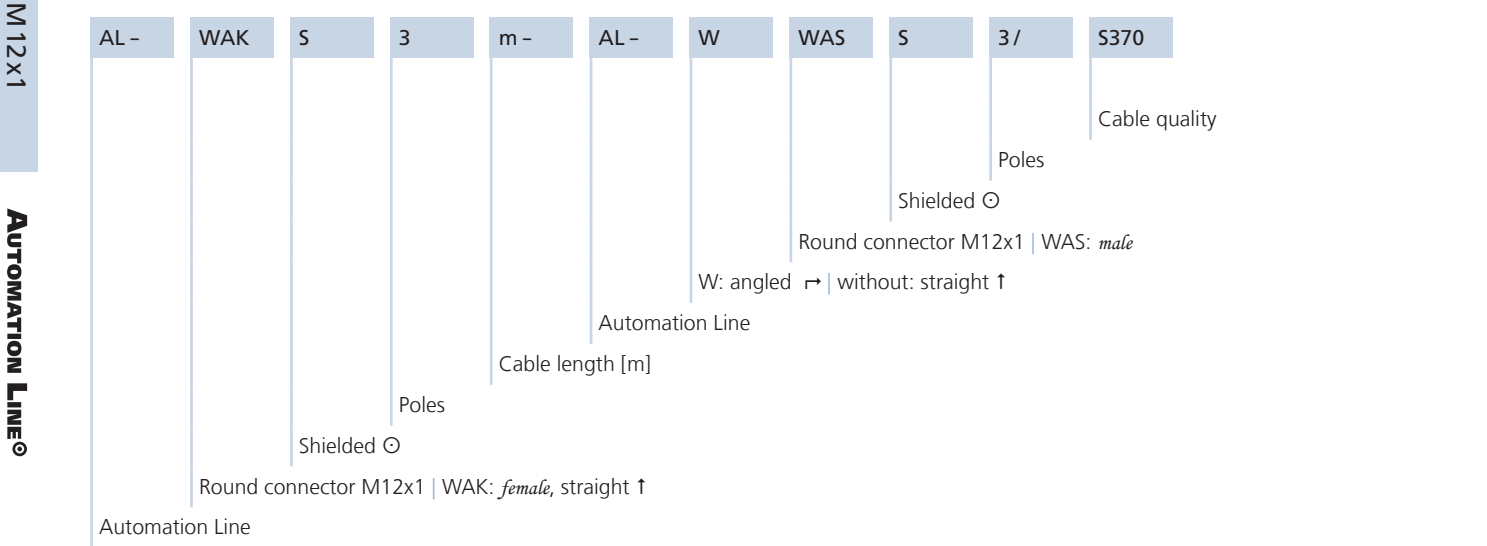


Automation LINE® M12x1 shielded ☉ | *male*

Technical data	Poles	Value
Rated voltage [U _{max}]	3, 4	250V
	5	60V
	8, 12	30V
Current load [I _{max}]	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



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*

3 poles

4 poles

5 poles

8 poles

12 poles

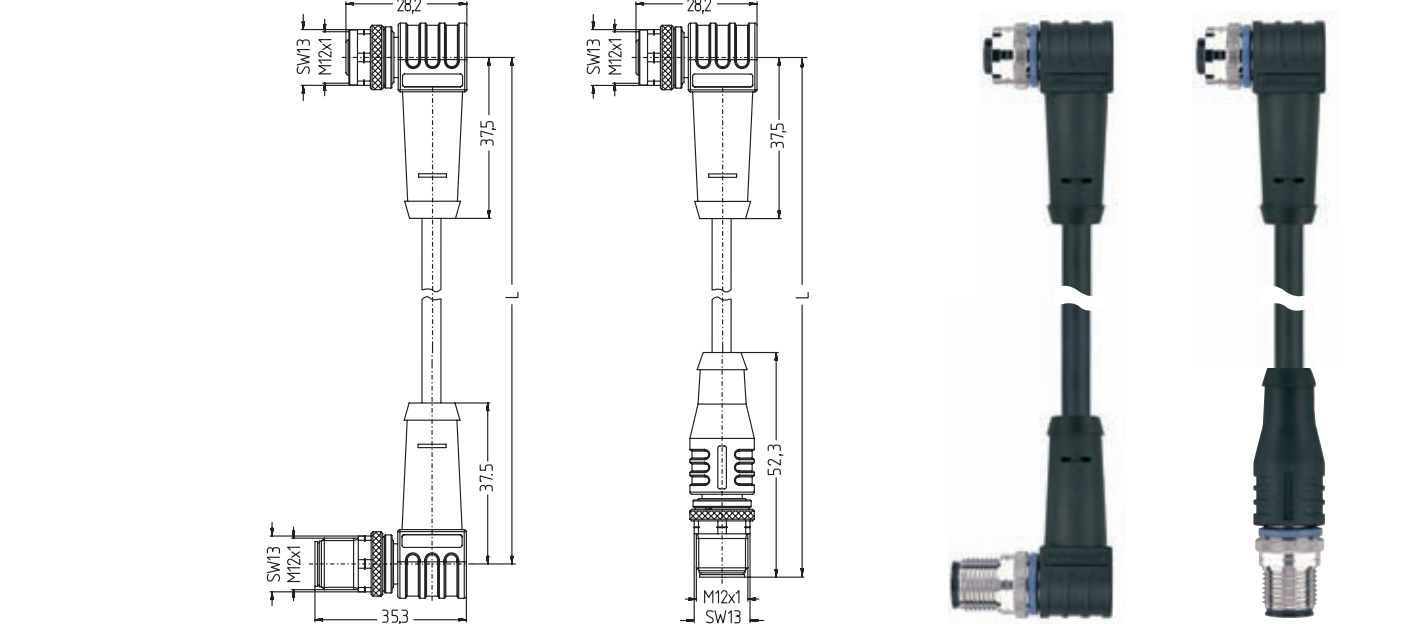
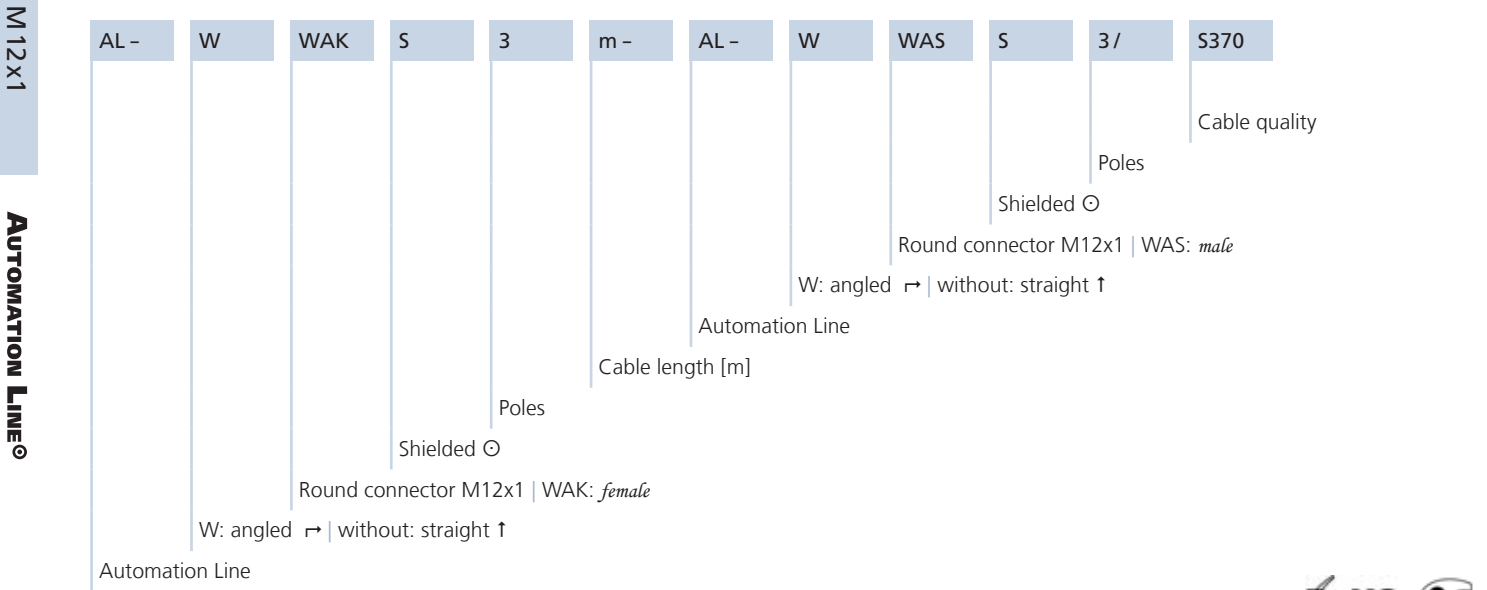
1BN | 3BU | 4BK

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



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)		IP 67, IP 69K
Mechanical life cycle		>100 mating cycles

Coding A | *female*

3 poles

4 poles

5 poles

8 poles

12 poles

Coding A | *male*

3 poles

4 poles

5 poles

8 poles

12 poles

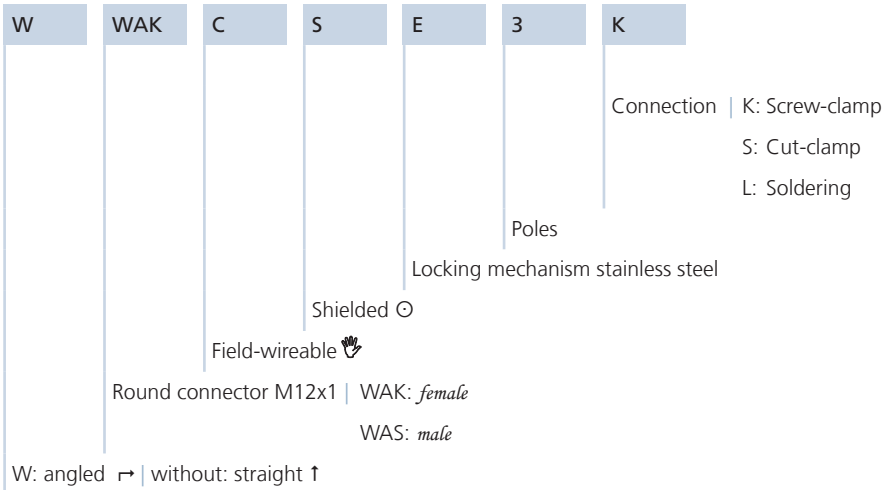
1BN | 3BU | 4BK

1BN | 2WH
3BU | 4BK

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

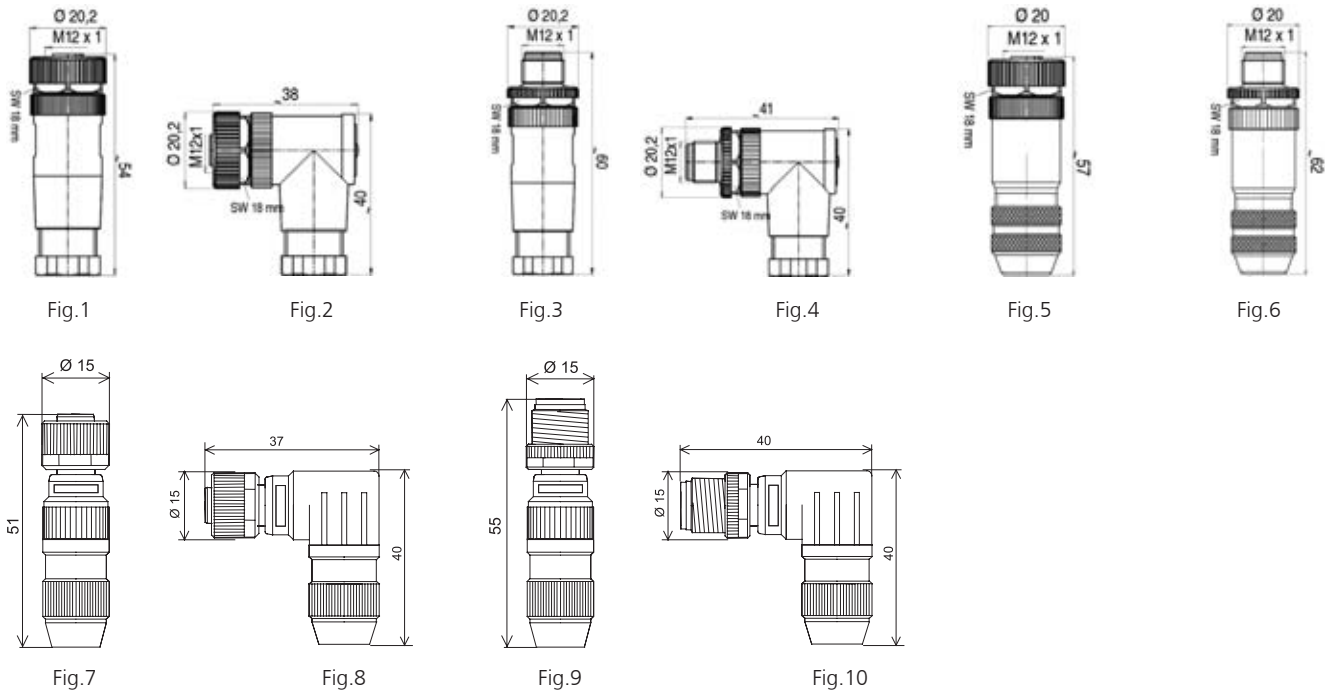
1WH | 2BN | 3GN
4YE | 5GY | 6PK
7BU | 8RD

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

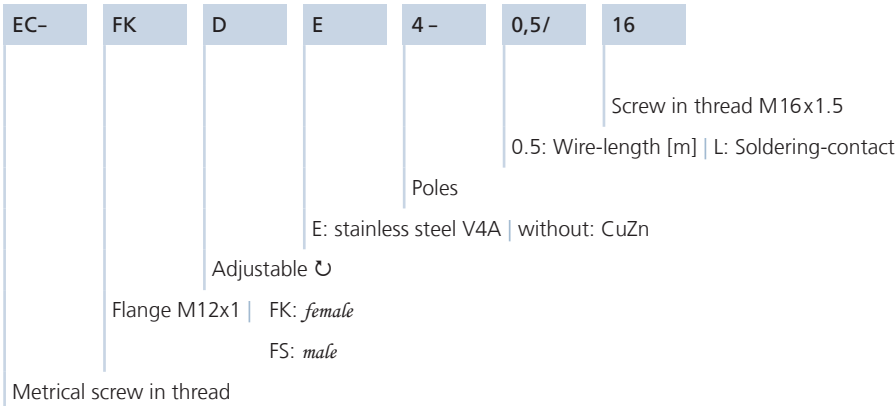


Product line	Version	Connection	Figure	Poles	Type-designation	Order-No.
M12x1 ✋	Screw-clamp	$f \mid \uparrow$	Fig. 1	4	WAKC4K	8004811
				5	WAKC5K	8004815
				8	WAKC8K	8021862
		$f \mid \curvearrowright$	Fig.2	4	WWAKC4K	8004808
				5	WWAKC5K	8004809
				8	WWAKC8K	8041146
		$m \mid \uparrow$	Fig. 3	4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

Other versions are available upon request.

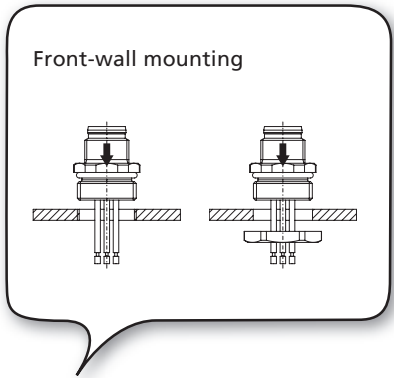


M12x1 field-wireable ✋				
Technical data	unshielded		shielded $\odot$	
	Connection	Pole: Value	Connection	Poles: Value
Rated voltage [Umax]	Screw-clamp	4: 250V 5: 125V 8: 60V	Screw-clamp	4: 120V 5: 60V 8: 30V
	Cut-clamp	3, 4: 32V		
	Soldering	12: 30V	Soldering	12: 30V
Current load [Imax]	Screw-clamp	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		$\geq 10^8 \Omega$		$\geq 10^8 \Omega$
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	4...6mm	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
	<i>f</i> ↑ CuZn ⤴	12	EC-FK12-L/16	8028124	EC-FK12-0,5/16	8028116
		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
<i>f</i> ↑ V4A	8			EC-FKD8-0,5/16	8028111	
	12			EC-FKD12-0,5/16	8028117	
	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> ↑ VA	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.

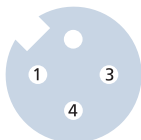


Dimensional drawings see page 38

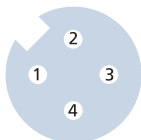
M12x1 flanges for front-wall mounting		
Technical data	Poles	Value
Rated voltage [U _{max}]	3, 4	250V
	4+PE, 5	60V
	8, 12	30V
Current load [I _{max}]	3, 4, 4+PE, 5	4A
	8	2A
	12	1.5A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-101
Materials	Flange housing	CuZn, nickel-plated stainless steel 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*

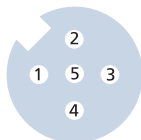
3 poles



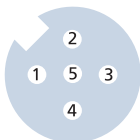
4 poles



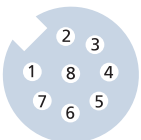
4 poles+PE



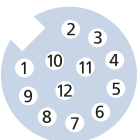
5 poles



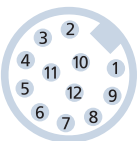
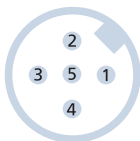
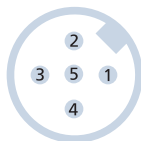
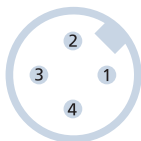
8 poles



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: <i>female</i> , FS: <i>male</i>			
						W: angled ⤴ without: straight ↑			
Metrical screw in thread									



Product line	Version	Poles	Type-designation	Print-contact	Wire-contact	
				Order-No.	Type-designation	Order-No.
Back-wall mounting (threaded front)	$f \mid \uparrow \mid \text{CuZn} \mid \curvearrowright$	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
	$f \mid \uparrow \mid \text{V4A} \mid \curvearrowright$	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
	$f \mid \curvearrowright \mid \text{CuZn} \mid \Delta h < 2,5 \text{mm}$	4	EC-WFKF4-P/12/S3525	8045188		
		5	EC-WFKF5-P/12/S3525	8050257		
	$f \mid \curvearrowright \mid \text{CuZn} \mid \Delta h < 4,0 \text{mm}$	4	EC-WFKF4-P/12/S3540	8050274		
		5	EC-WFKF5-P/12/S3540	8050272		
	$f \mid \curvearrowright \mid \text{CuZn} \mid \Delta h < 5,0 \text{mm}$	4	EC-WFKF4-P/12/S3550	8050275		
		5	EC-WFKF5-P/12/S3550	8050273		
	$m \mid \uparrow \mid \text{CuZn} \mid \curvearrowright$	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
$m \mid \uparrow \mid \text{V4A} \mid \curvearrowright$	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	
	$m \mid \curvearrowright \mid \text{CuZn}$	4	EC-WFSF4-P/12	8046571		
		5	EC-WFSF5-P/12	8044960		

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



Dimensional drawings
see page 39

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 (<i>female</i>)	TPU, BK
	Contact carrier (<i>male</i> + 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 <i>female</i>					
3 poles	4 poles	4 poles+PE	5 poles	8 poles	12 poles
Coding A <i>male</i>					
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

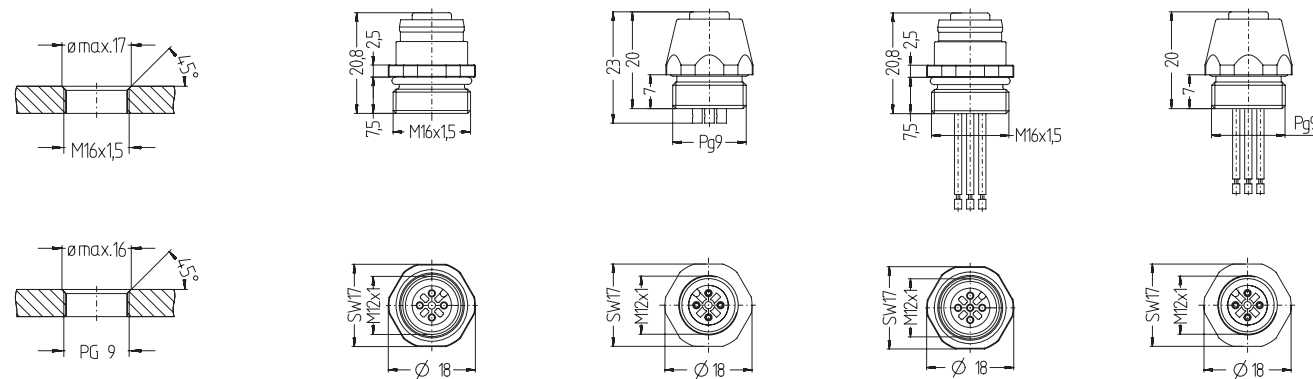
Front-wall mounting (optional threaded rear) Spare nuts are not included | see accessories on page 154

Soldering-contact

Wire-contact

$f \uparrow \uparrow$ CuZn (V4A) (EC)-FK(E) _-L/16 (FB)-FK _-L (EC/HT)-FK(E) _-0,5/16 (FB)-FK _-0,5

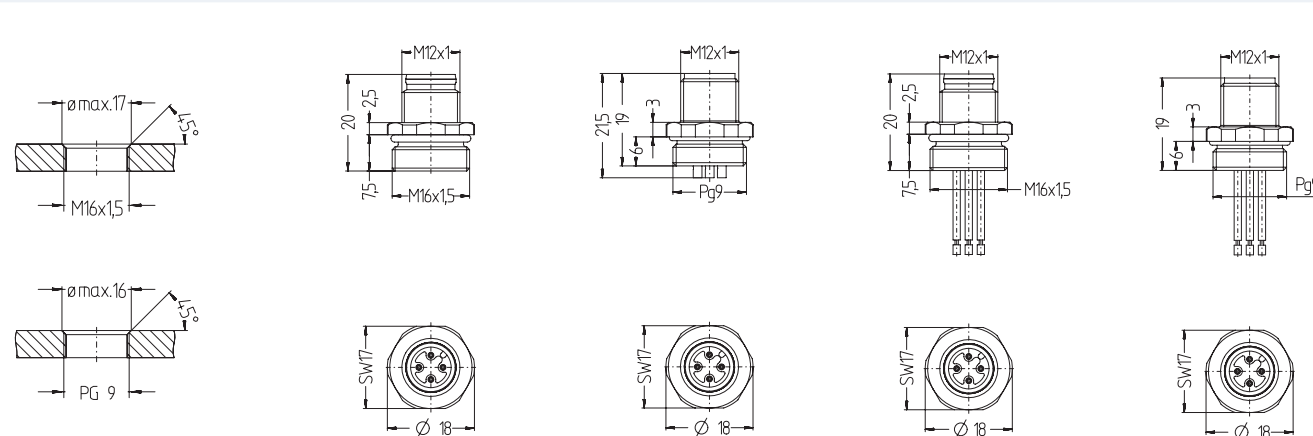
Panel cut-out



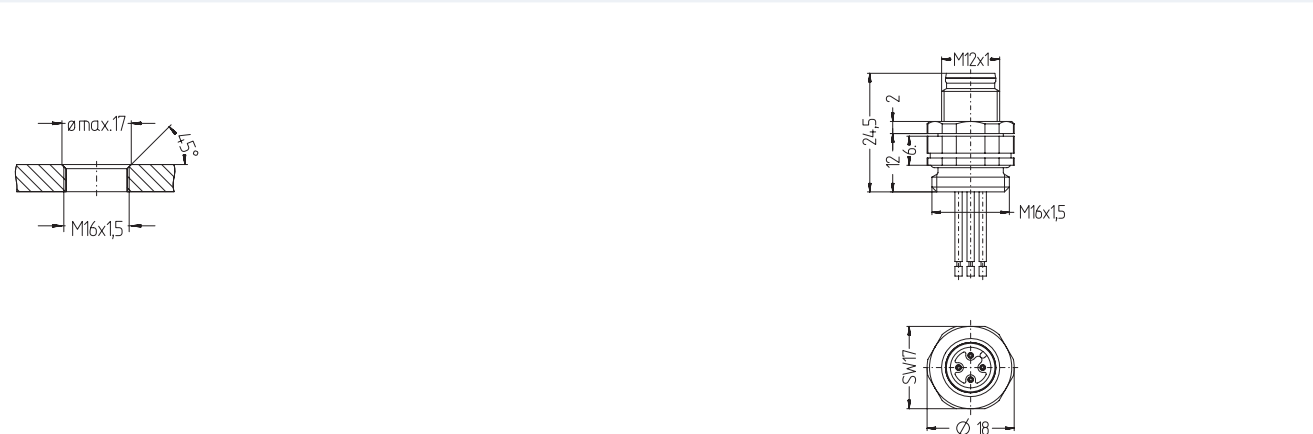
$f \uparrow \uparrow$ CuZn $\cup$ (EC)-FKD _-0,5/16



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



$m \uparrow \uparrow$ CuZn $\cup$ (EC)-FSD _-0,5/16



For pinning see corresponding article.

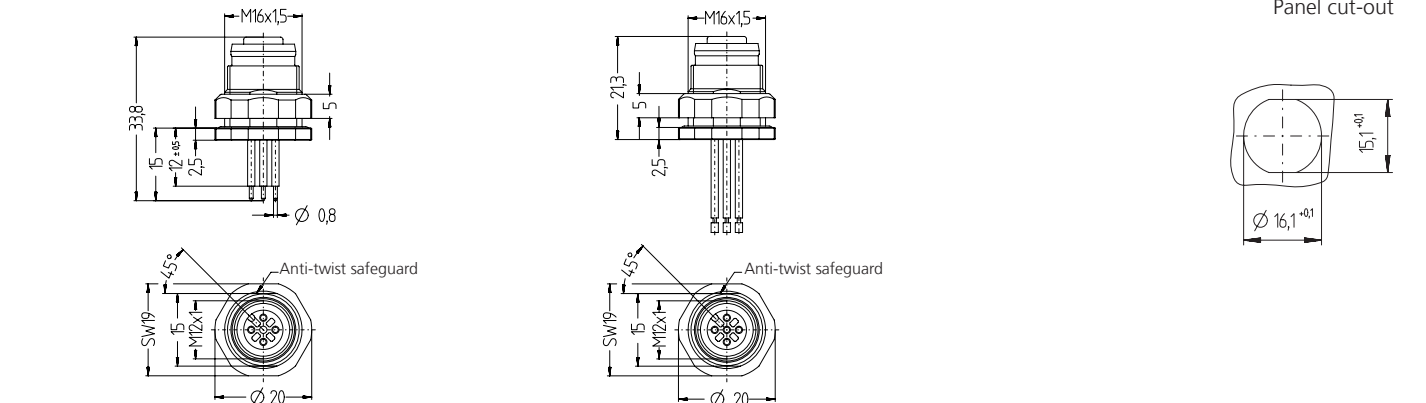
Back-wall mounting (threaded front)

Print-contact

Wire-contact

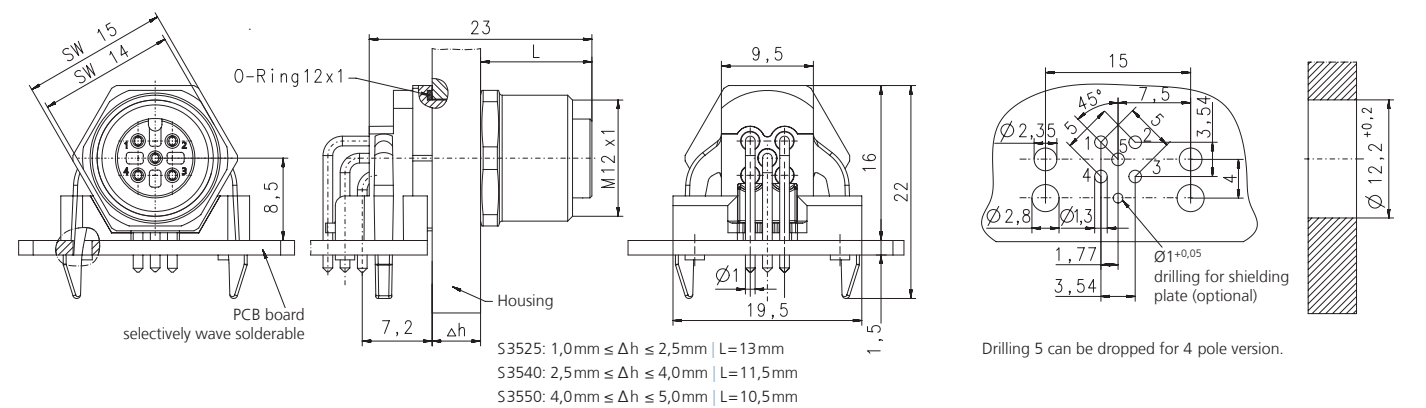
(EC)-FKFD(E) _-P/16 (EC)-FKFD(E) _-0,5/16 $f \uparrow \uparrow$ CuZn (V4A)

Panel cut-out



(EC)-WFKF _-P/12/S... | see Δh

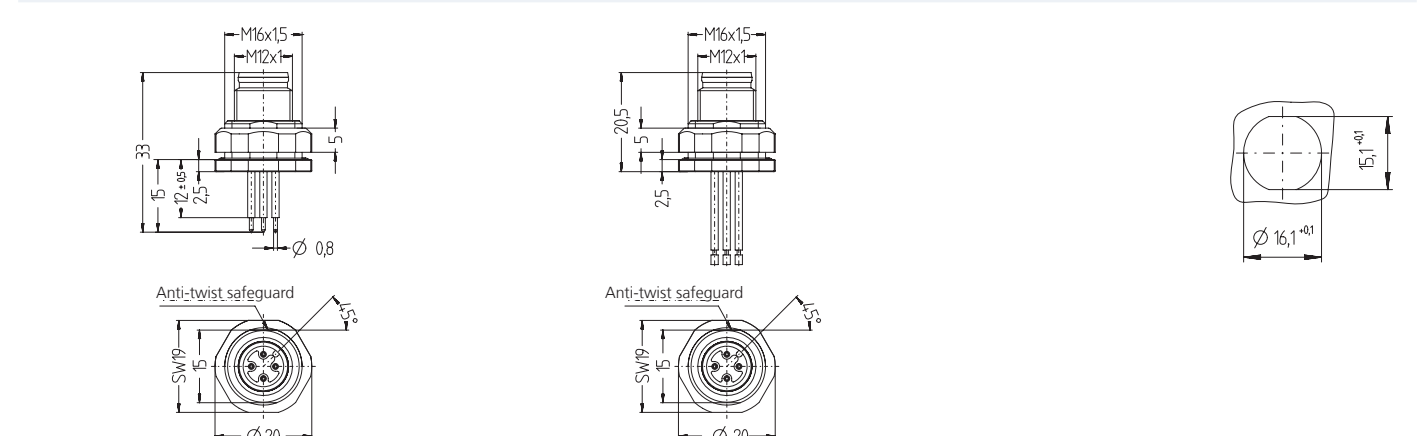
$f \uparrow \rightarrow$ CuZn Δh



(EC)-FSFD(E) _-P/16

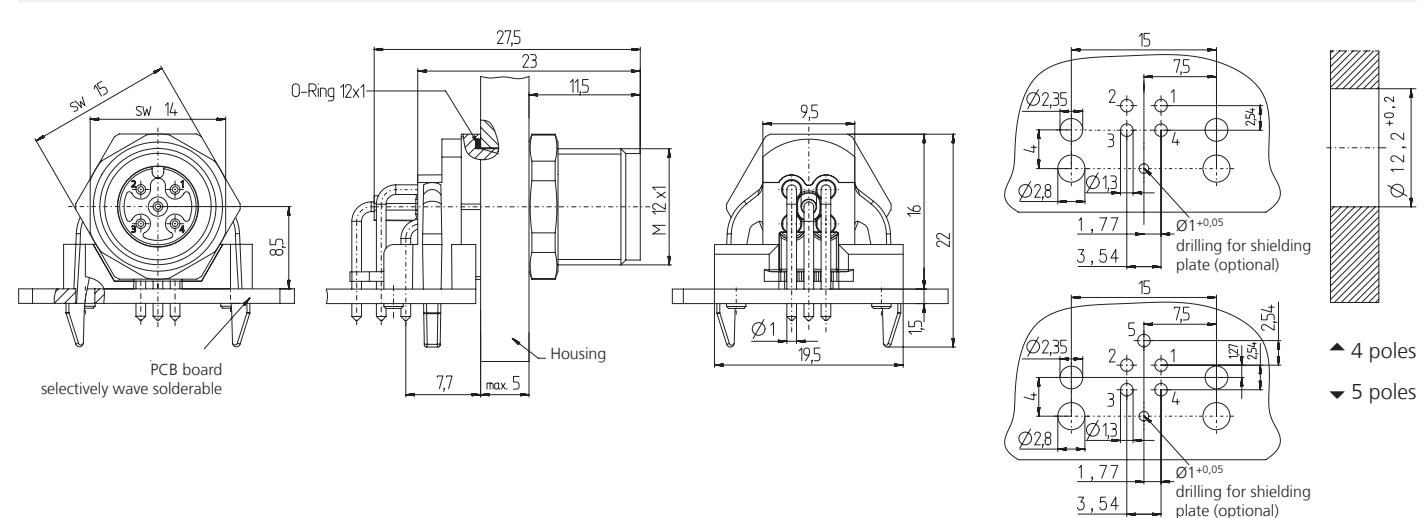
(EC)-FSFD(E) _-0,5/16

$m \uparrow \uparrow$ CuZn (V4A)



(EC)-WFSF _-P/12

$m \uparrow \rightarrow$ 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

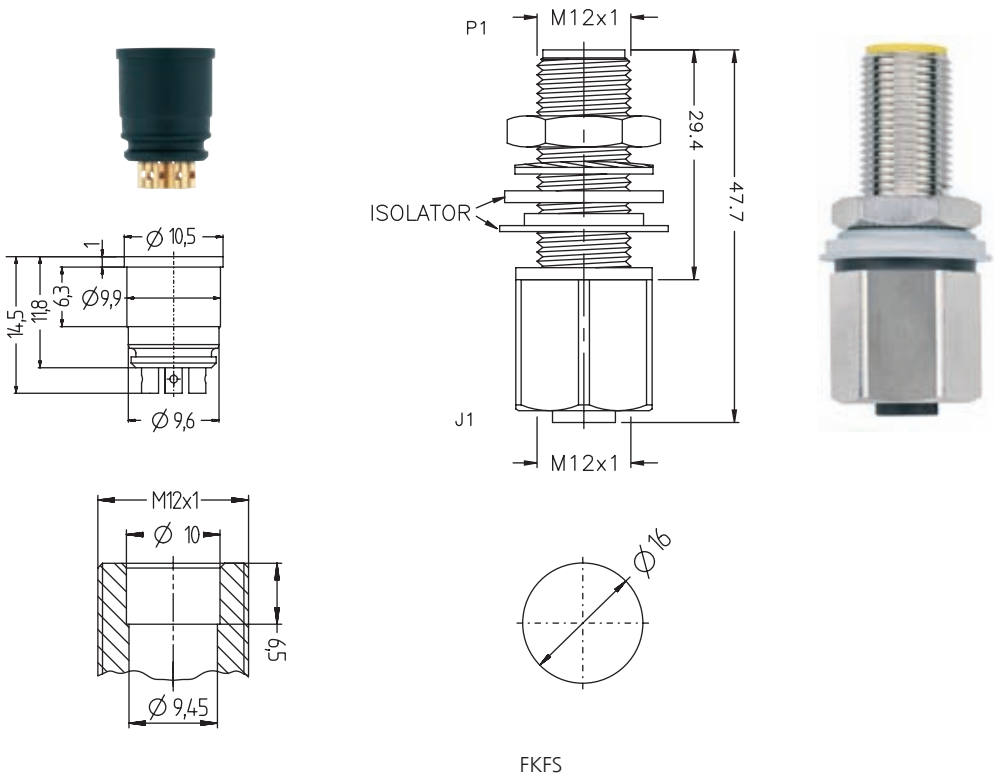
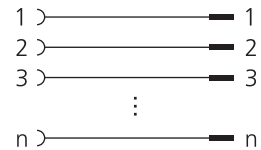
M12x1 | FS: *male*

M12x1 | FK: *female*

M12x1 Screw in thread



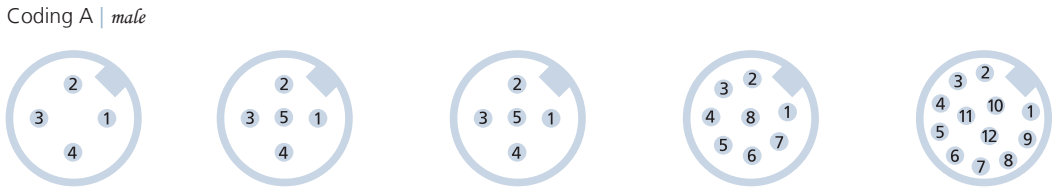
Product line	Version	Poles	Type-designation	Order-No.
M12x1_Feed-through connection	<i>f_m</i>	4	FKFS4/M12	8018404
		5	FKFS4.5/M12	8018405
		8	FKFS8/M12	8018410

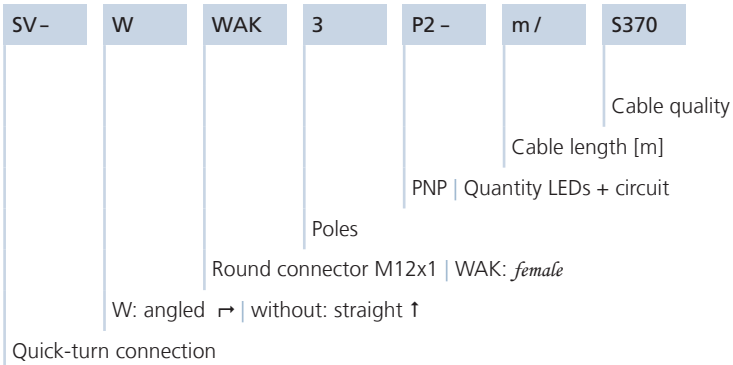


M12x1 built-in connector | Feed-through connection

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

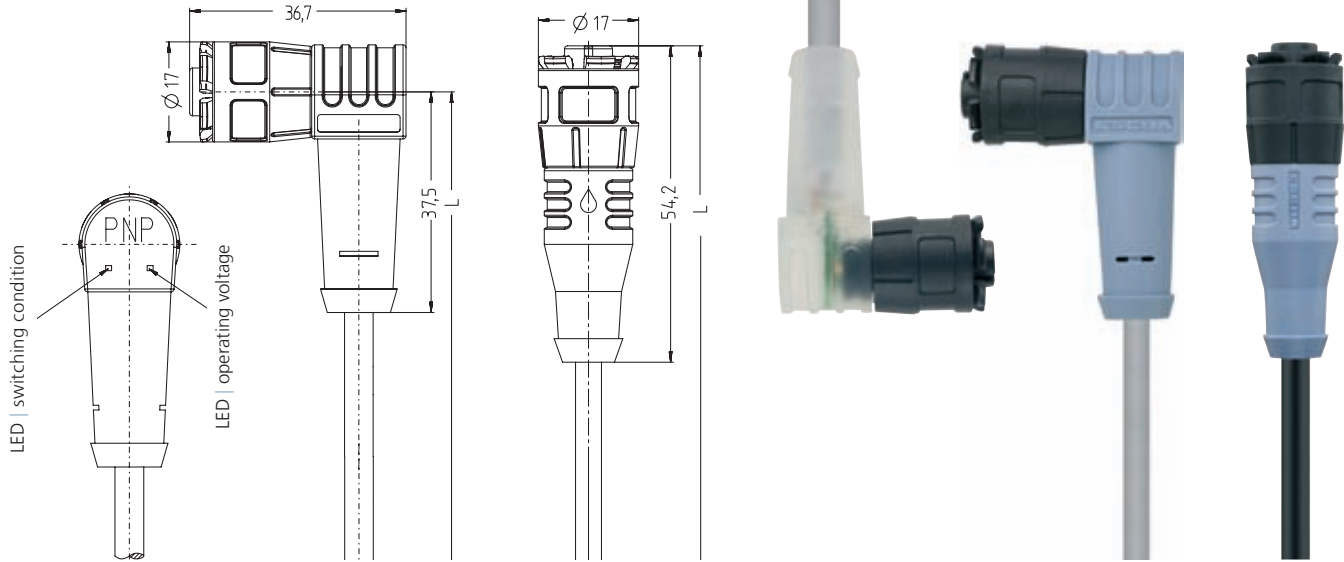
Coding A <i>female</i>				
4 poles	4 poles+PE	5 poles	8 poles	12 poles





Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	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.

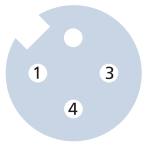


Quick-turn connection S12x1 *female* + *female* LED

Technical data	Poles	Value
Rated voltage [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 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

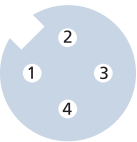
Coding A | *female*

3 poles



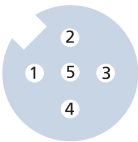
1BN | 3BU | 4BK

4 poles



1BN | 2WH | 3BU | 4BK

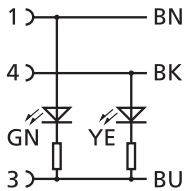
4 poles+PE

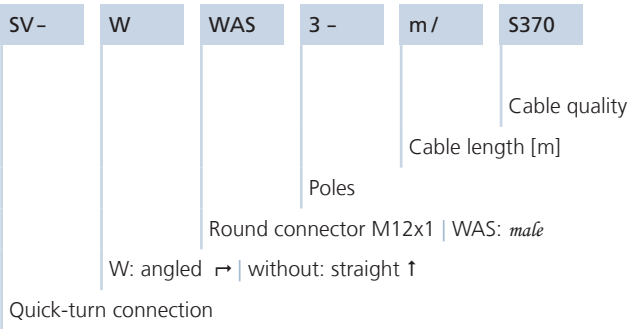


1BN | 2WH | 3BU | 4BK | 5GN/YE

LED-version

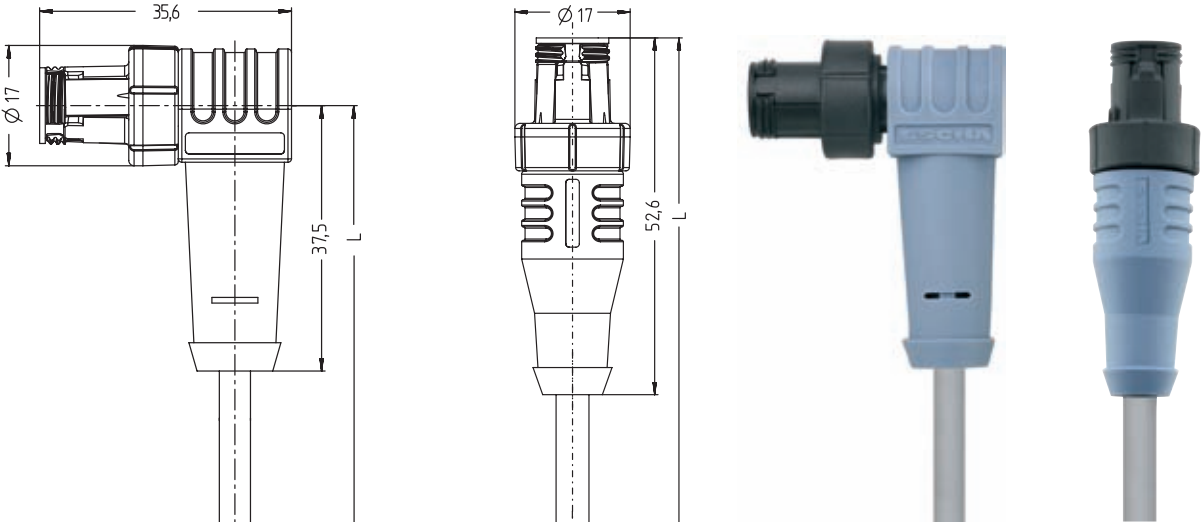
3P2





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

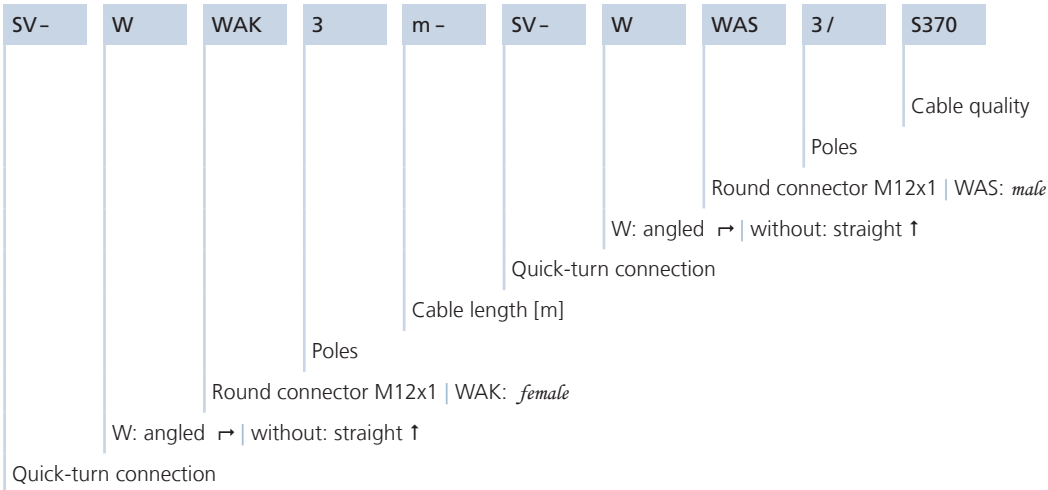


1BN | 2WH | 3BU | 4BK

4 poles+PE

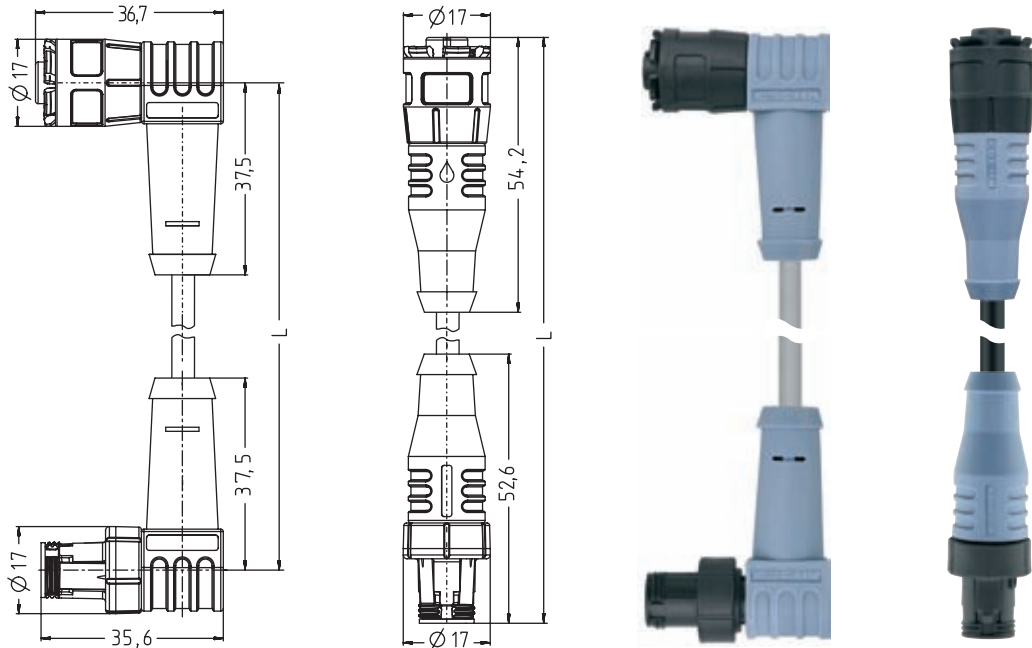


1BN | 2WH | 3BU | 4BK | 5GN/YE



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
SV_M12x1	$f \mid \uparrow _ m \mid \uparrow$	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
	$f \mid \rightarrow _ m \mid \rightarrow$	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
	$f \mid \uparrow _ m \mid \uparrow$	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
	$f \mid \rightarrow _ m \mid \rightarrow$	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

Coding A

3 poles | *female*

3 poles | *male*

4 poles | *female*

4 poles | *male*

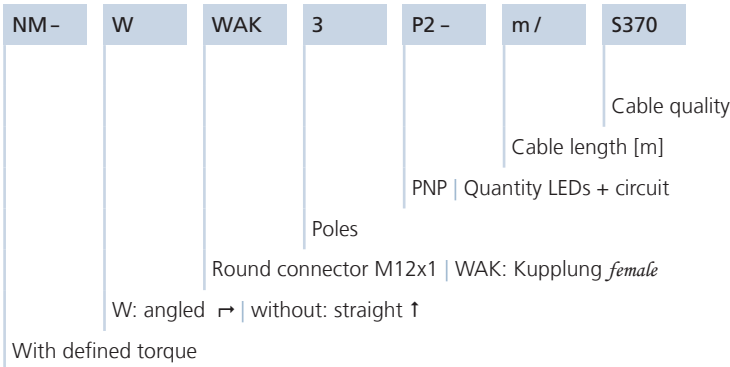
4 poles+PE | *female*

4 poles+PE | *male*

1BN | 3BU | 4BK

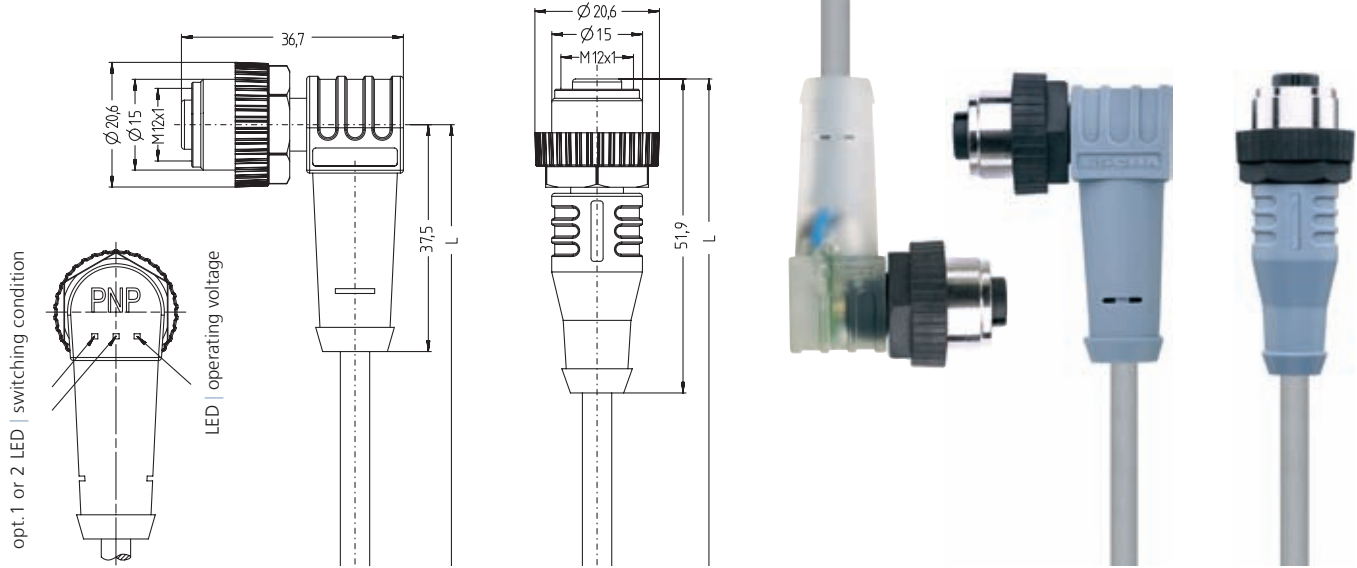
1BN | 2WH | 3BU | 4BK

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



Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
NM_M12x1	<i>f</i> ↑	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
	<i>f</i> ↗	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
	<i>f</i> ↗ 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
		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
	<i>f</i> ↗ LED 3	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
		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
	<i>f</i> ↗ LED 3.1	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
		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
	<i>f</i> ↗ 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
		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
	<i>f</i> ↗ LED 3	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
		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
	<i>f</i> ↗ LED 3.1	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
		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

Other versions and cable-lengths are available upon request.

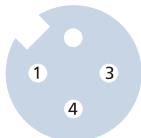


M12x1 with defined torque *female* + *female* LED

Technical data	Poles	Value
Rated voltage [Umax]	3, 4	250V
	4+PE	60V
	LED-version	10...24V _{bdc}
Current load [Imax]	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

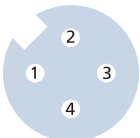
Coding A | *female*

3 poles



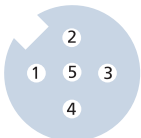
1BN | 3BU | 4BK

4 poles



1BN | 2WH | 3BU | 4BK

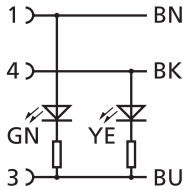
4 poles+PE



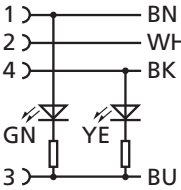
1BN | 2WH | 3BU | 4BK | 5GN/YE

LED-versions

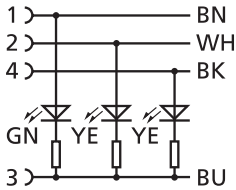
3P2



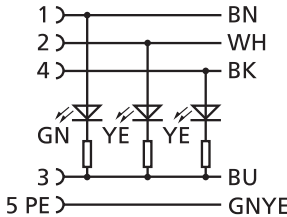
4P2



4P3



5P3



3.1 = GN/RD/YE

NM-

W

WAS

3 -

m /

S370

Cable quality

Cable length [m]

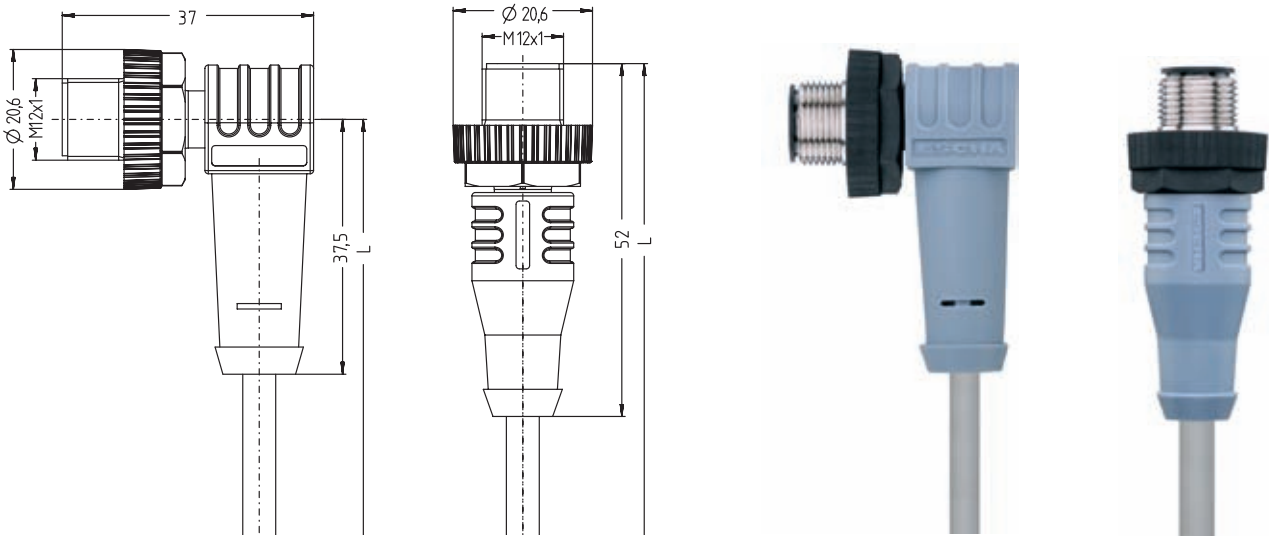
Poles

Round connector M12x1 | WAS: *male*

W: angled ↗ | without: straight ↑

With defined torque

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 | *male*

3 poles

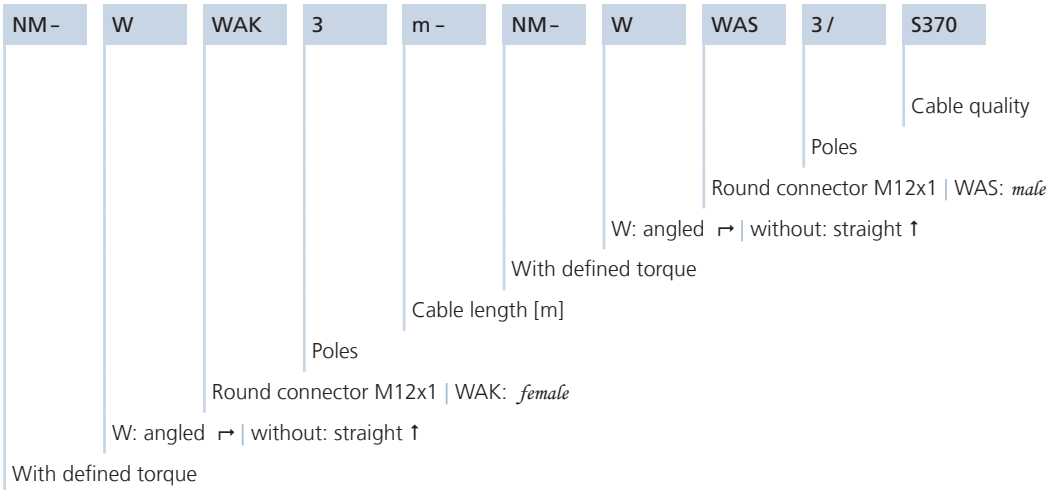
4 poles

4 poles+PE

1BN | 3BU | 4BK

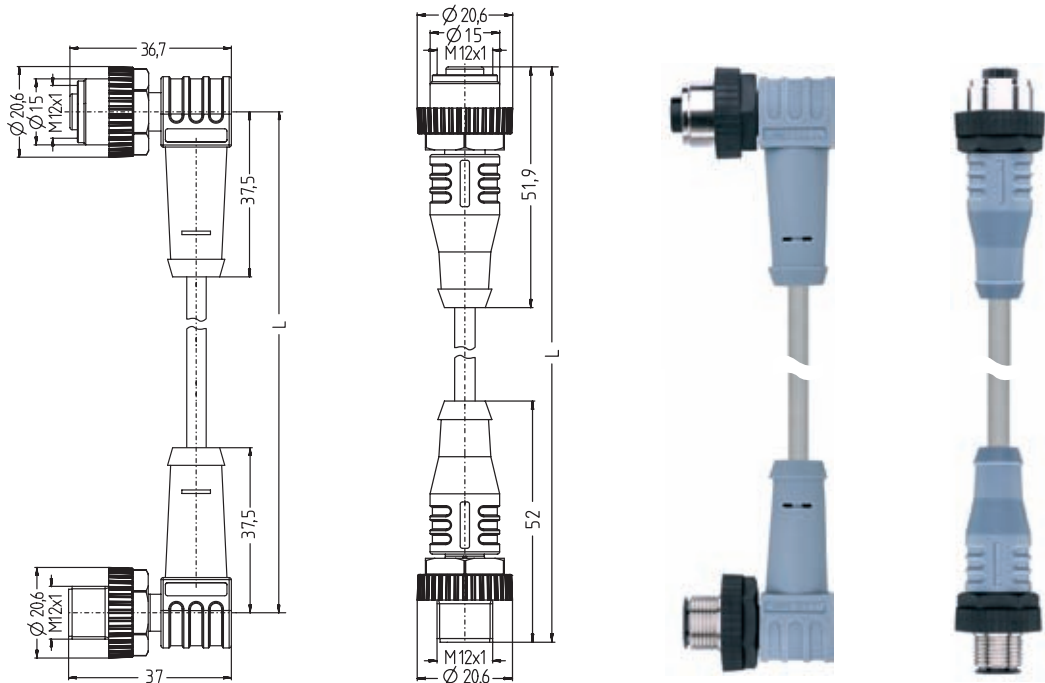
1BN | 2WH | 3BU | 4BK

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

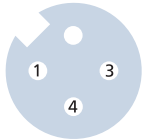
Other versions and cable-lengths are available upon request.



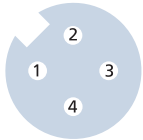
M12x1 with defined torque | junction cable

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

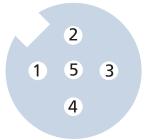
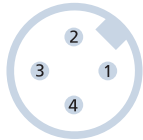
Coding A
3 poles | *female* 3 poles | *male* 4 poles | *female* 4 poles | *male* 4 poles+PE | *female* 4 poles+PE | *male*



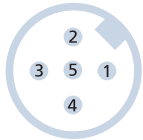
1BN | 3BU | 4BK

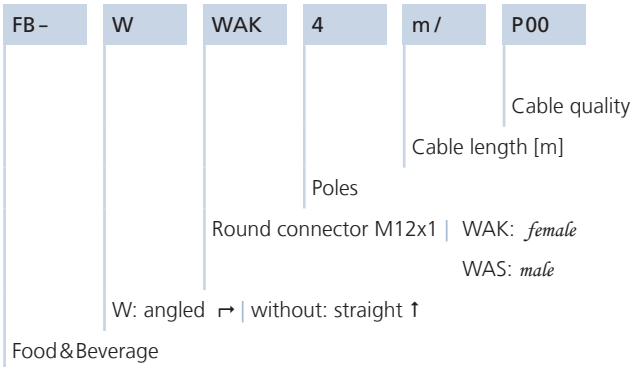


1BN | 2WH | 3BU | 4BK



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



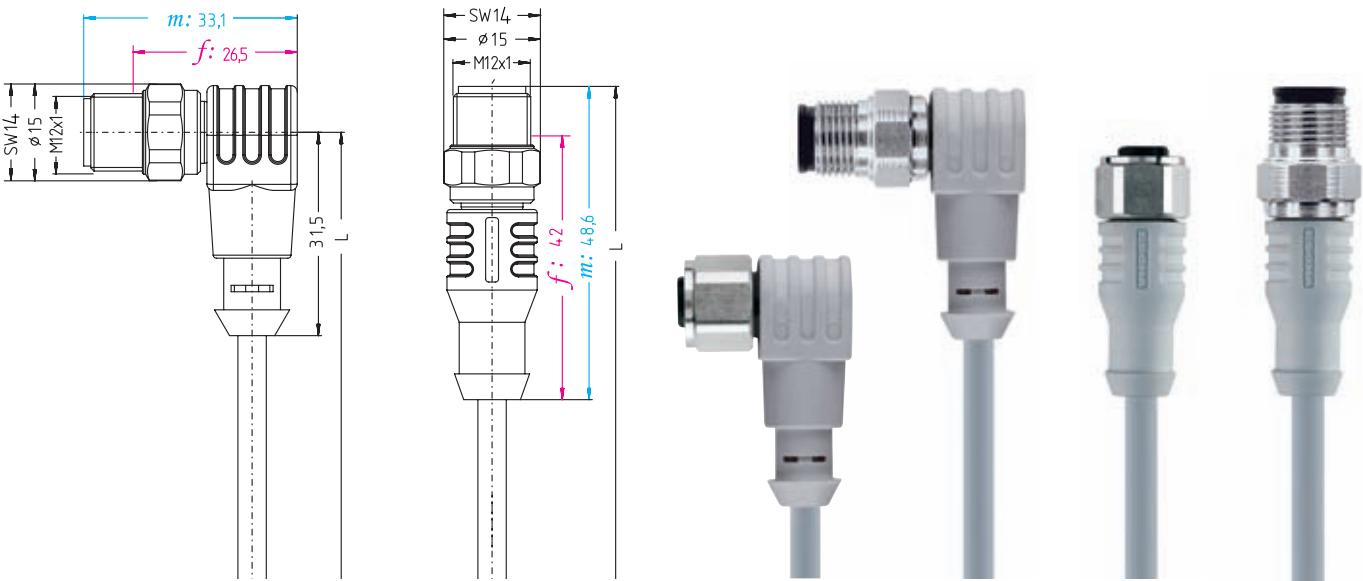


Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
FB_M12x1	<i>f</i> ↑	PVC P00	4	FB-WAK4-m/P00	8024739	8024460	8024603
	<i>f</i> ↗	PVC P00	4	FB-VWAK4-m/P00	8024740	8024461	8022816
	<i>m</i> ↑	PVC P00	4	FB-WAS4-m/P00	8028511	8024463	8024610
	<i>m</i> ↗	PVC P00	4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



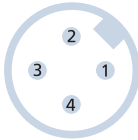
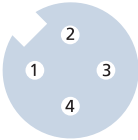
Food & Beverage | PVC _ M12x1

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*

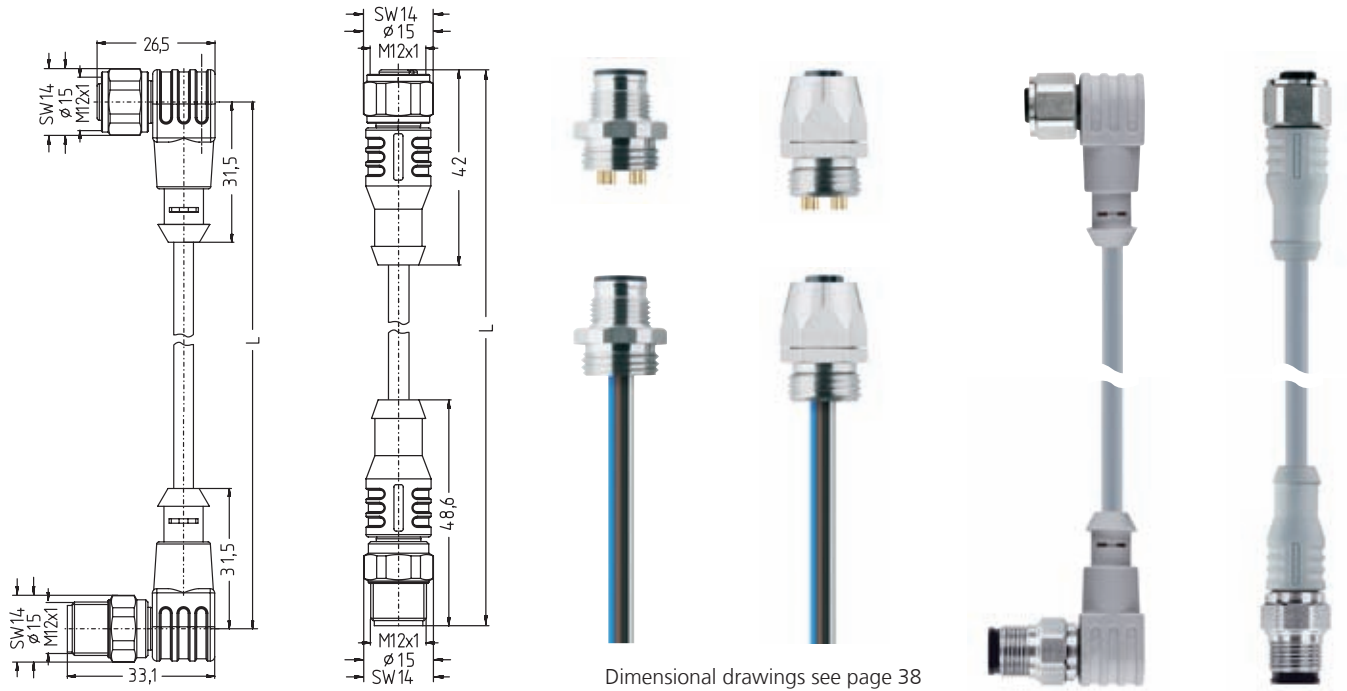
FS: *male*

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

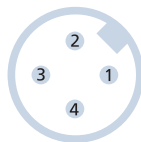
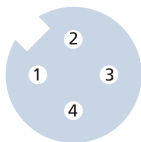
Food & Beverage | PVC _ M12x1 junction cable + flanges

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

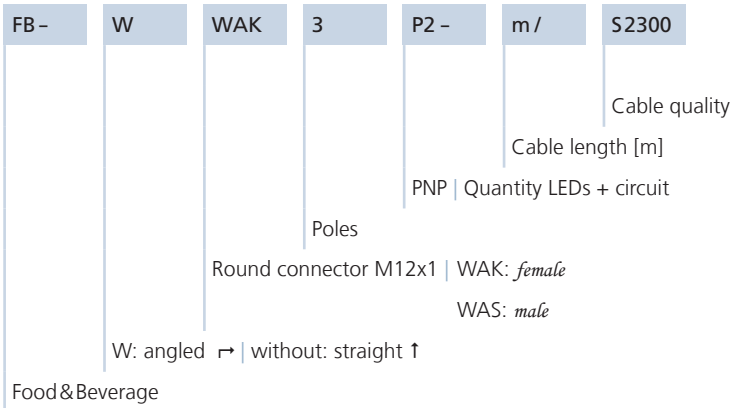
Coding A

4 poles | *female*

4 poles | *male*



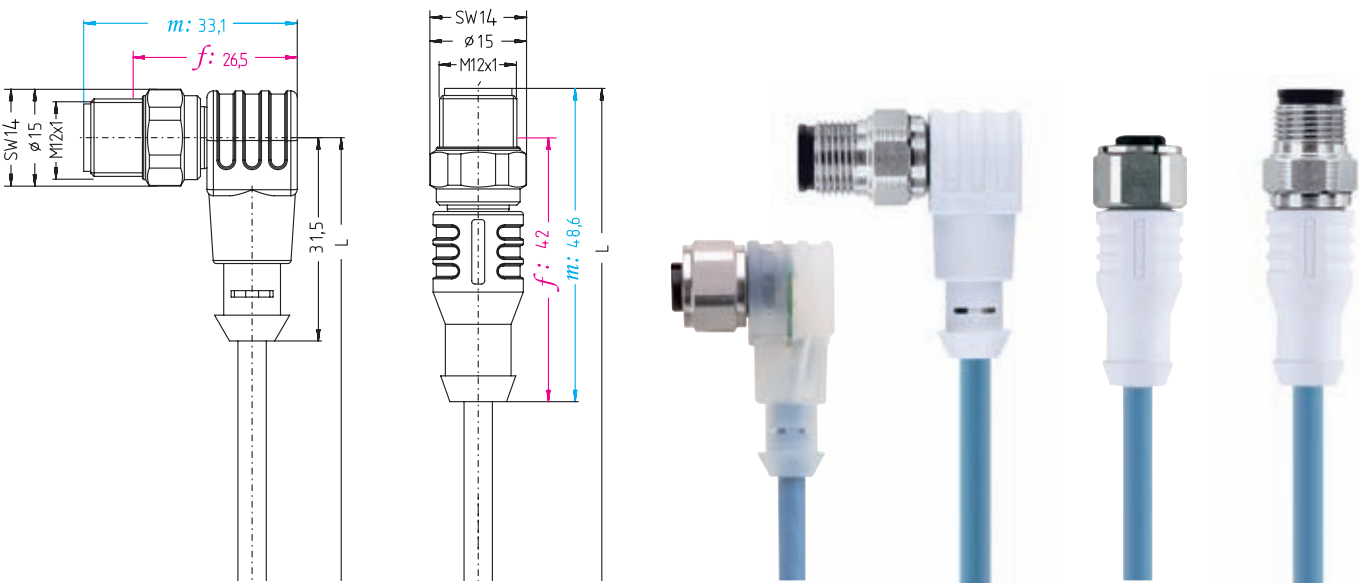
1BN | 2WH | 3BU | 4BK



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
FB_M12x1	<i>f</i> ↑	PP S2300	3	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	3	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

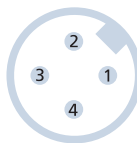
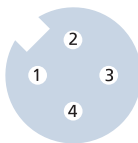
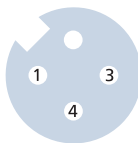
Coding A

3 poles | *female*

3 poles | *male*

4 poles | *female*

4 poles | *male*

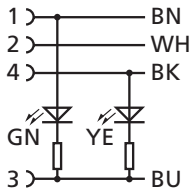


1BN | 3BU | 4BK

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*

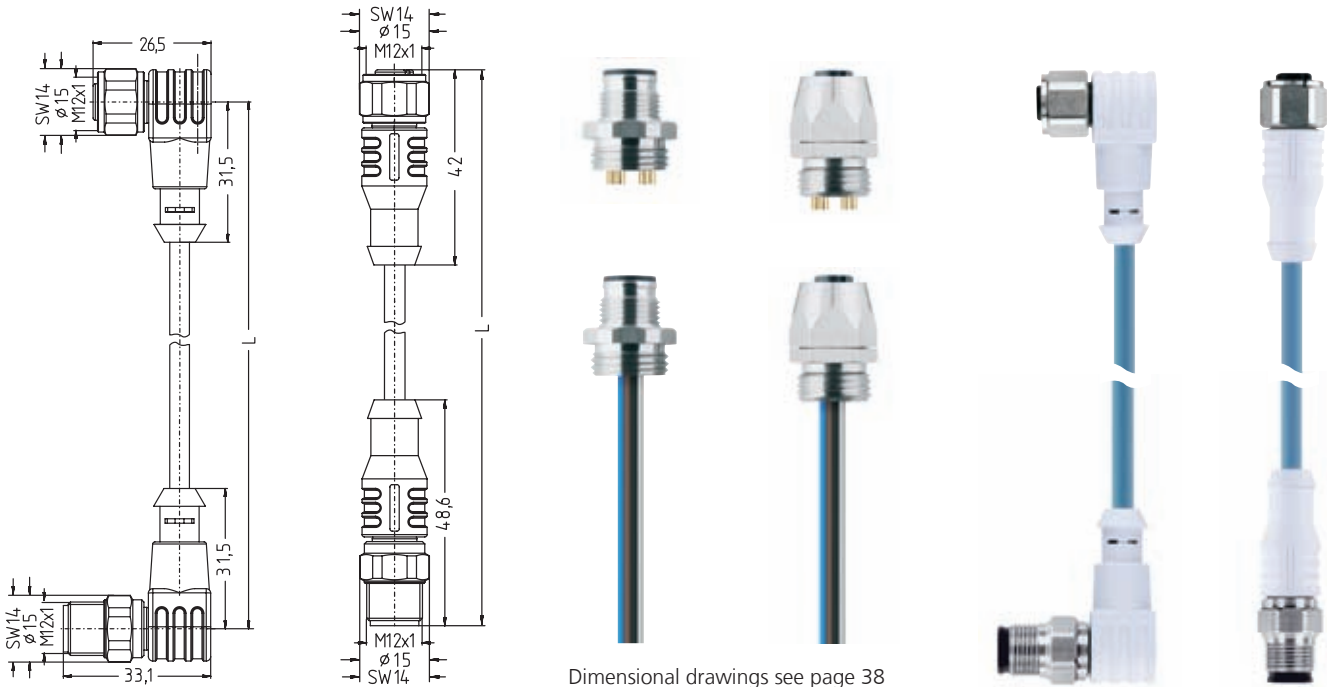
FS: *male*

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

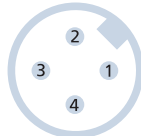
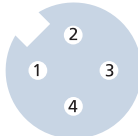
Food & Beverage plus | PVC-free _ M12x1 junction cable + flanges

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

HT -	W	WAK	3	m /	S2430
					Cable quality
					Cable length [m]
			Poles		
		Round connector M12x1			WAK: <i>female</i>
					WAS: <i>male</i>
	W: angled → without: straight ↑				
High temperature-proof					

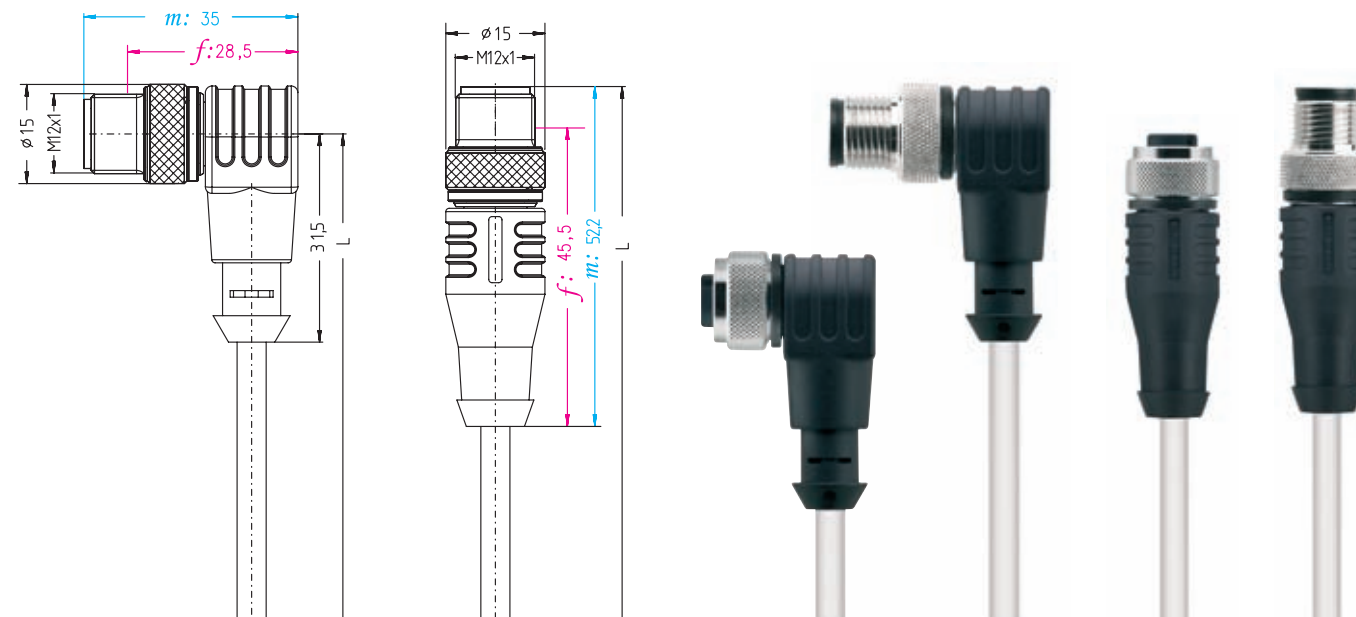


Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m	10m
HT_M12x1	$f \mid \uparrow$	PTFE S2430	3	HT-WAK3-m/S2430	8039210	8036085	8039211
			4	HT-WAK4-m/S2430	8036518	8036086	8036154
			5	HT-WAK4.5-m/S2430	8039212	8036087	8039213
			8	HT-WAK8-m/S2430	8039214	8039215	8039216
			12	HT-WAK12-m/S2430	8039711	8039712	8039713
	$f \mid \rightarrow$	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
	$m \mid \uparrow$	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
	$m \mid \rightarrow$	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	2 A
	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 | *female*

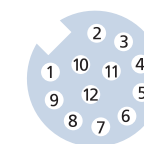
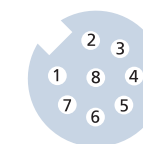
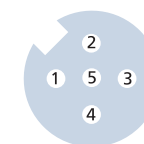
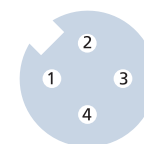
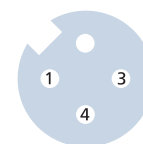
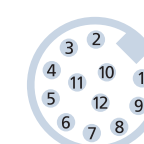
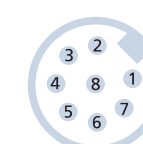
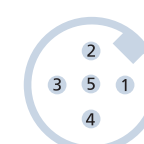
3 poles

4 poles

5 poles

8 poles

12 poles

Coding A | *male*

1BN | 3BU | 4BK

1BN | 2WH

3BU | 4BK

1BN | 2WH

3BU | 4BK | 5GY

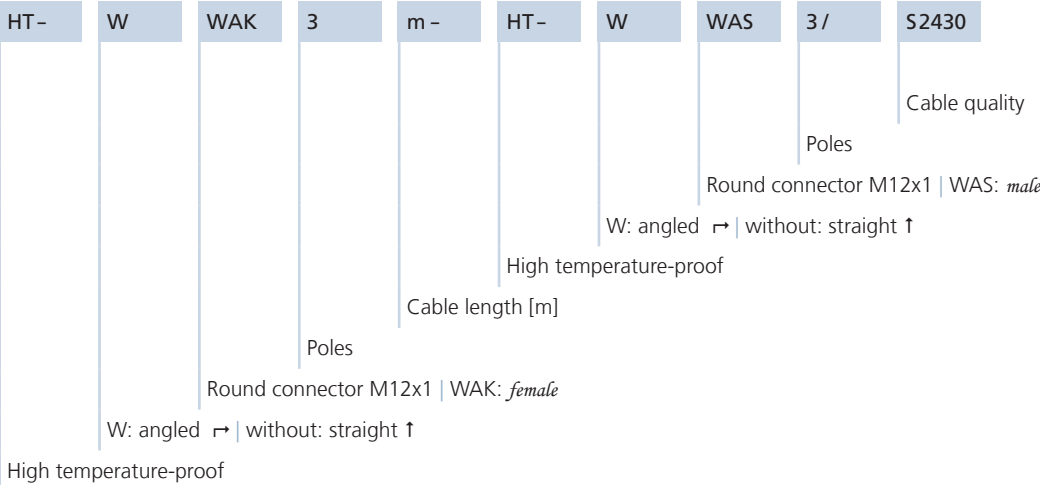
1WH | 2BN | 3GN

4YE | 5GY | 6PK

7BU | 8RD

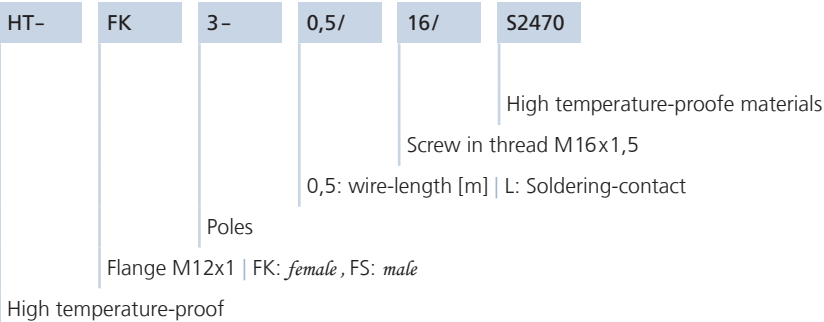
1BN | 2BU | 3WH | 4GN | 5PK | 6YE | 7BK

8GY | 9RD | 10VT 11GYPK | 12RDBU



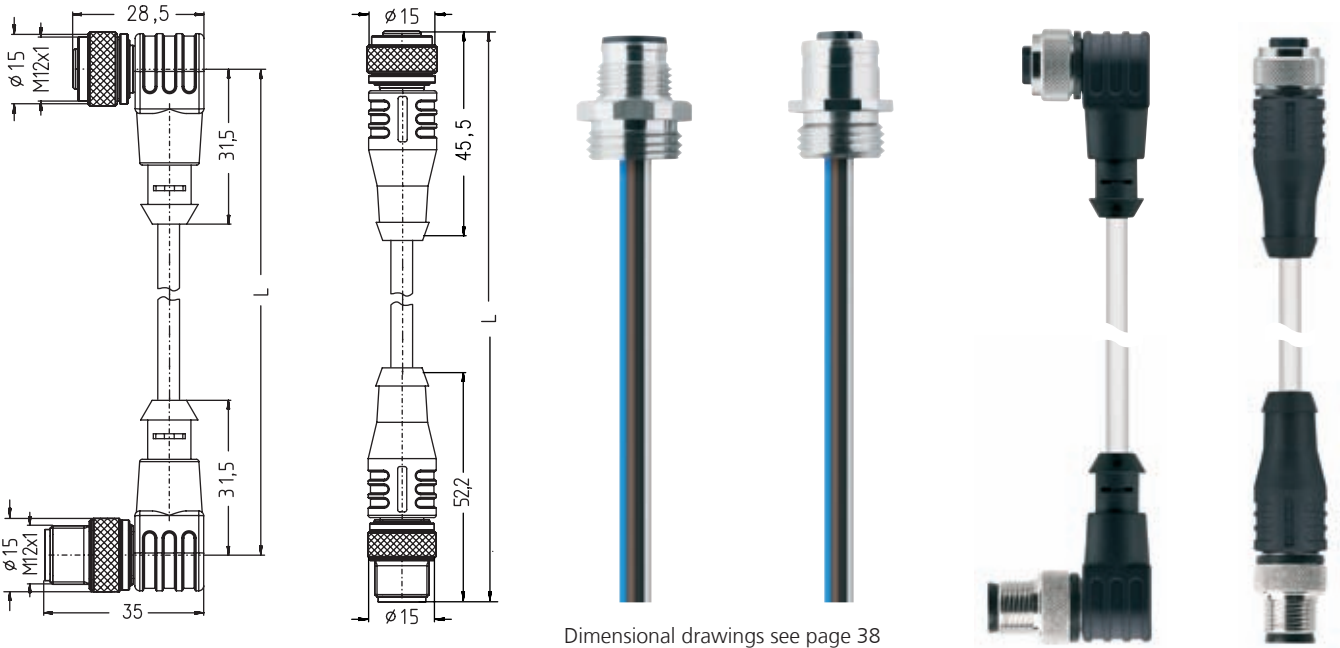
Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m	10m
HT_M12x1	<i>f</i> ↑ <i>m</i> ↑	PTFE S2430	3	HT-WAK3-m-HT-WAS3/S2430	8036254	8051955	8039480
			4	HT-WAK4-m-HT-WAS4/S2430	8038667	8038668	8038669
			5	HT-WAK4.5-m-HT-WAS4.5/S2430	8051958	8039949	8039950
			8	HT-WAK8-m-HT-WAS8/S2430	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.

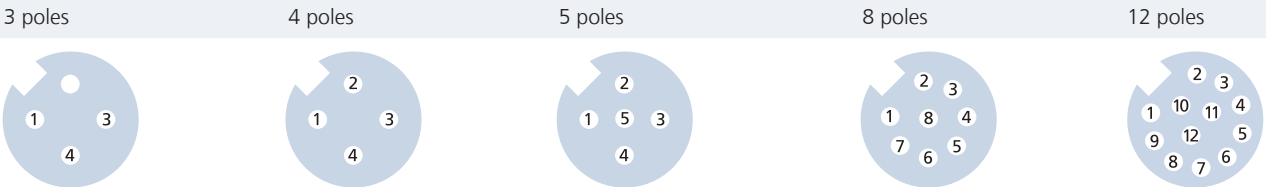


Dimensional drawings see page 38

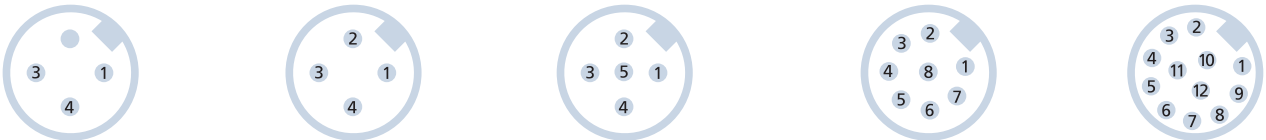
M12x1 High temperature-proof | junction cable + flanges

Technical data	Round connectors		Flanges	
	Poles	Value	Poles	Value
Rated voltage [Umax]	3, 4	250V	3, 4	250V
	5	60V	5	60V
	8, 12	30V	8, 12	30V
Current load [Imax]	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*



Coding A | *male*



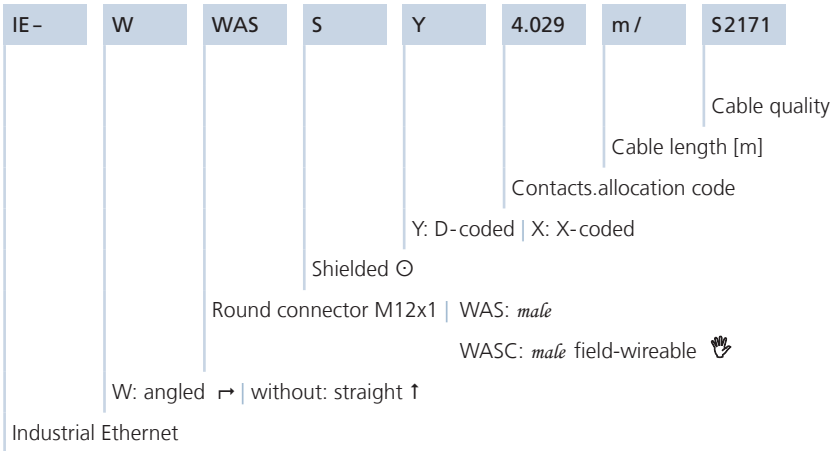
1BN | 3BU | 4BK

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



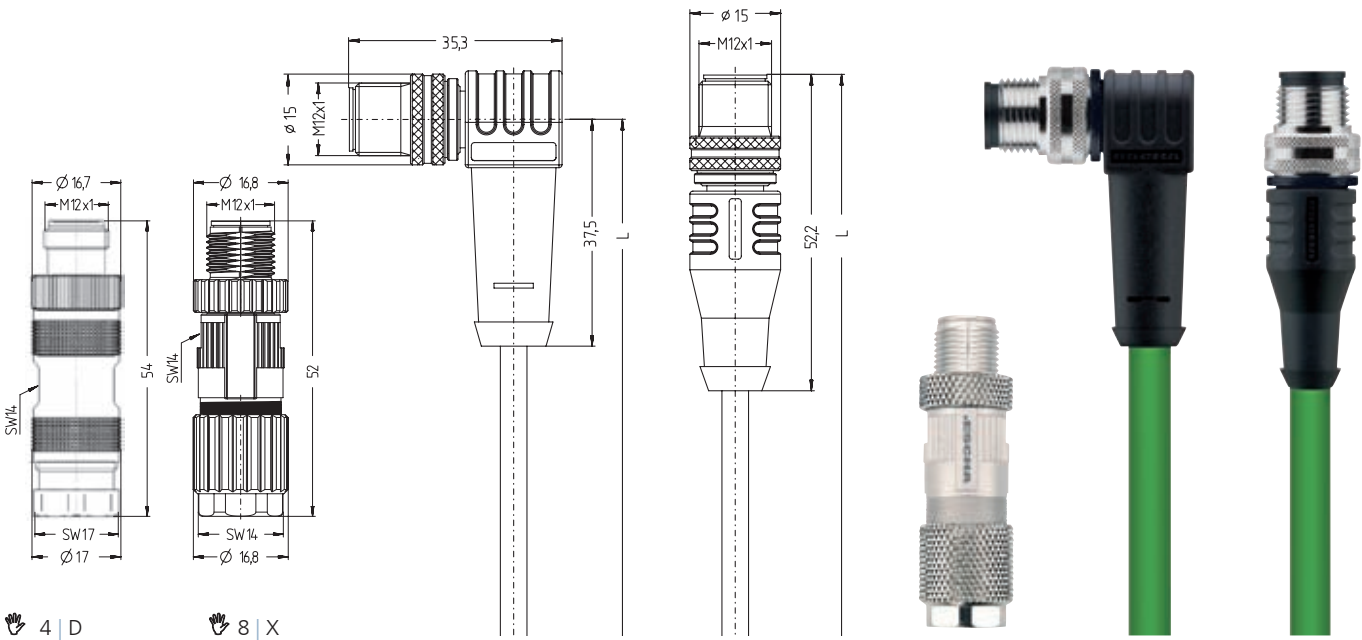
Product line	Version	Poles	Cable quality	Type-designation		2m	Cable length m 5m10m
IE_M12x1 $\bigcirc$	4 D Cat5e	<i>m</i> 	PUR S2171 [®]	IE-WASSY4.029-m/S2171		8031449	80314508031451
		<i>m</i> 	PUR S2171 [®]	IE-WWASSY4.029-m/S2171		8044087	80419408044088
		<i>m</i>  		IE-WASC SY4S	8032913		
	8 X Cat6A	<i>m</i> 	PUR S3500 [®]	IE-WASSX8.066-m/S3500		8049457	80494588049459
		<i>m</i>  		IE-WASC SX8S	8050231		

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	S2171 [®]	S3500 [®]
Cable quality for	M12x1 4 D	M12x1 8 X
Transmission category	Cat5e	Cat7
Nominal diameter	Ø 6.5mm	Ø 6.4mm
Wire-structure data	4xAWG22/7	4x2xAWG26/7
Wire colours	WH YE BU OG	WH(BU) BU; WH(OG) OG; WH(GN) GN; WH(BN) BN
Draig-chain application bending radius	> 200mm	5xd single
	(<i>v</i> _{max} = 4 m/s <i>a</i> _{max} = 4 m/s²)	10xd repeated
Temperature range	-40°C...+70°C	-40°C...+80°C



 4 | D

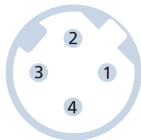
 8 | X

Industrial Ethernet _ M12x1 <i>male</i>				
Technical data	Round connector	Round connector	Field-wireable	
	4 D	8 X	4 D	8 X
Rated voltage [U _{max}]	250V	48V	250V	48V
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	TPU, BK	CuZn
	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	<i>male</i> : Zn, nickel-plated
	O-ring			FPM/FKM
	Cut-contacts			NBR
	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	3	3	3
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 8...9,7mm
Connection			Cut-clamp	Cut-clamp

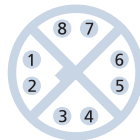
Coding | *male*

4 poles | D

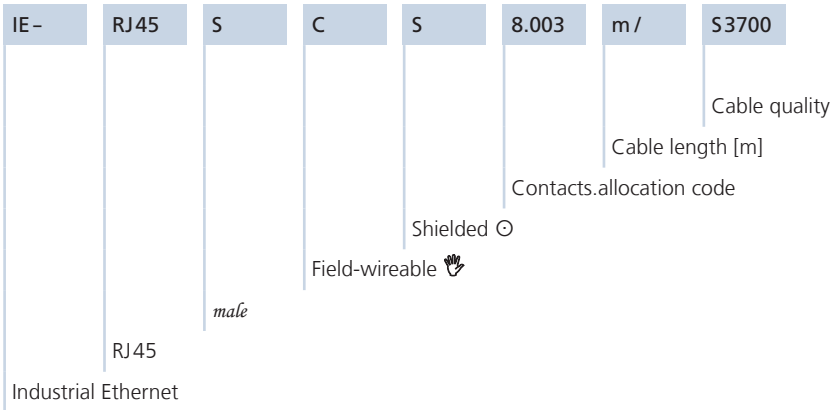
8 poles | X



1YE | 2WH | 3OG | 4BU



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



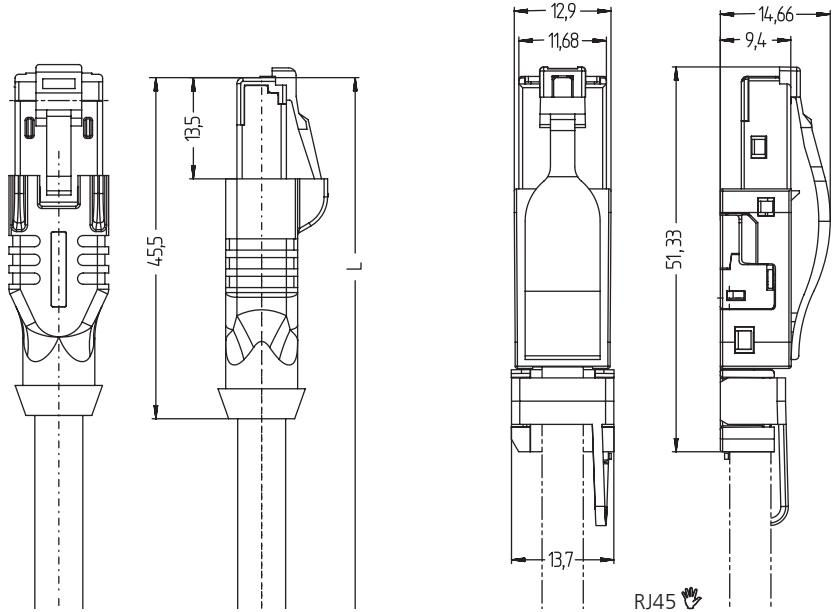
Product line	Version	Poles	Cable quality	Type-designation	🖱️	2m	Cable length m	
IE_RJ45 ☉	4-pole Cat5e	m ↑	PUR S3700 [®]	IE-RJ45SS8.003-m/S3700	8031340	8052609	8052610	8052611
		m ↑ 🖱️		IE-RJ45SCS4				
	8-pole X Cat5e	m ↑	PUR S3500 [®]	IE-RJ45SS8.002-m/S3500	8048117	8052214	8052215	8052216
		m ↑ 🖱️		IE-RJ45SCS8				

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-pole	RJ45 8-pole
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
Draig-chain application bending radius	5xd single	5xd single
	7xd repeated	10xd repeated
Temperature range	-40°C...+70°C	-40°C...+80°C



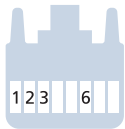
Industrial Ethernet_ RJ45 male

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 UL94-V0, 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

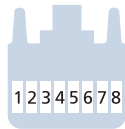
Pinning RJ45

Industrial | 4-poles

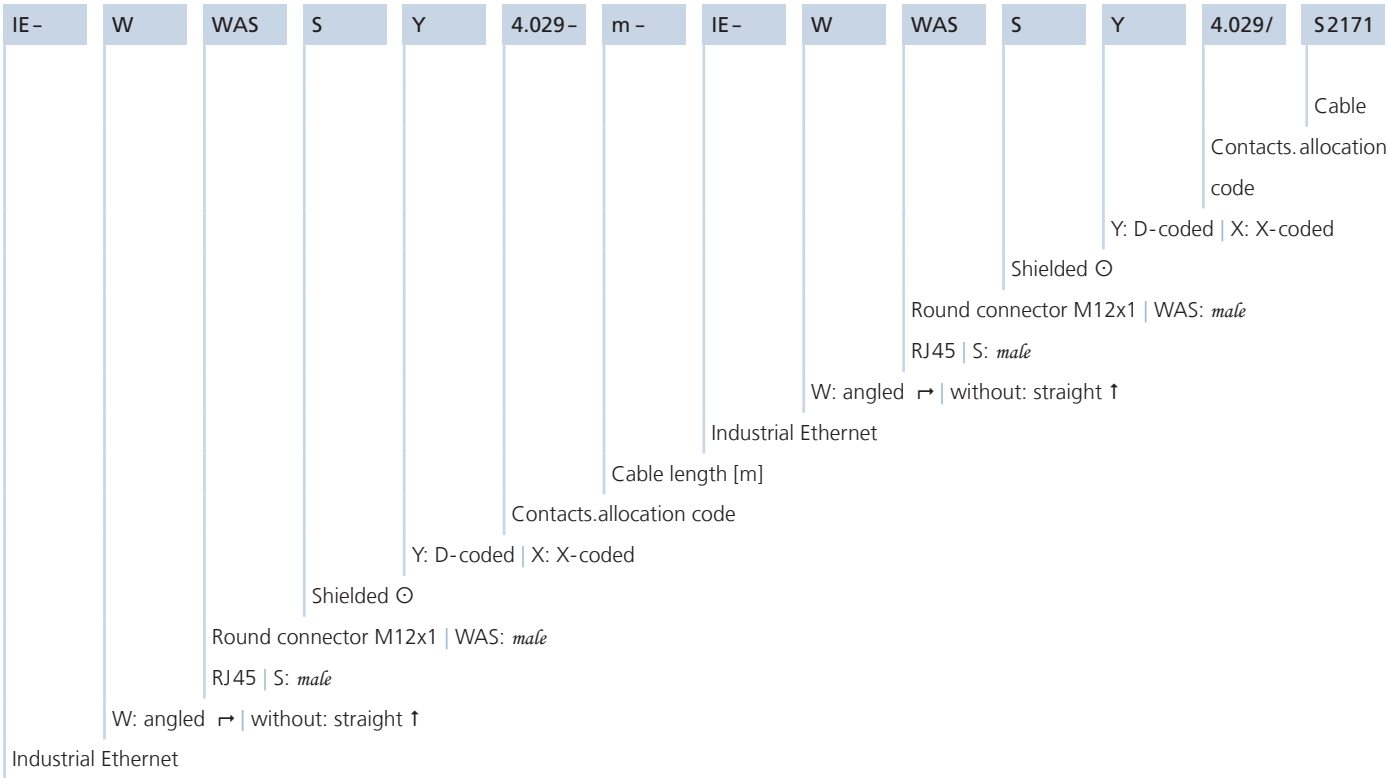
T568B | 8-poles



1YE | 2OG | 3WH | 6BU



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



Cable

Contacts.allocation
code

Y: D-coded | X: X-coded

Shielded $\bigcirc$ Round connector M12x1 | WAS: *male*RJ45 | S: *male*W: angled $\curvearrowright$ | without: straight $\uparrow$

Industrial Ethernet

Cable length [m]

Contacts.allocation code

Y: D-coded | X: X-coded

Shielded $\bigcirc$ Round connector M12x1 | WAS: *male*RJ45 | S: *male*W: angled $\curvearrowright$ | without: straight $\uparrow$

Industrial Ethernet



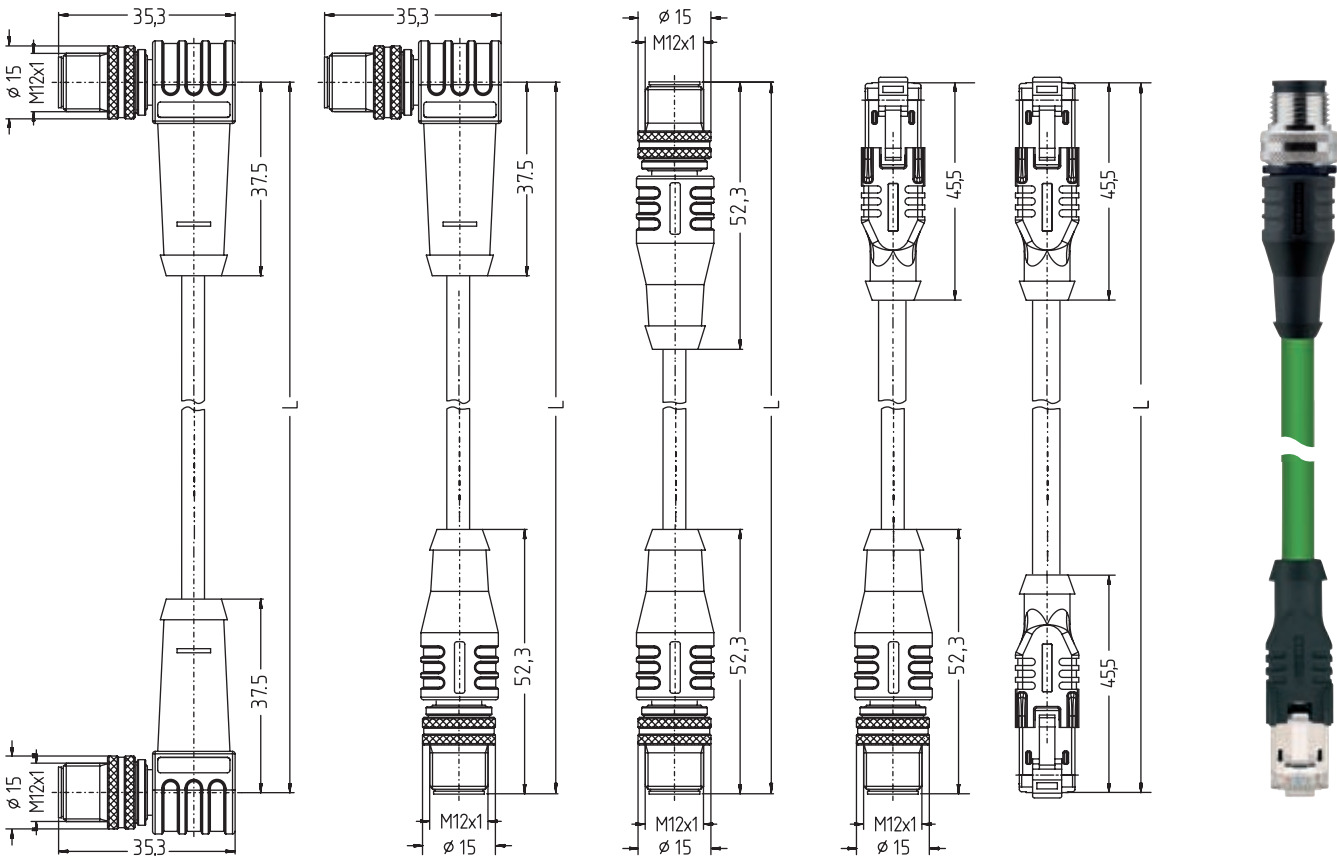
Product line	Version		Cable-quality	Type-designation	1m	Cable length m 2m	5m
IE_M12x1 ⊙	4 D Cat5e	m ↑ __ m ↑	PUR S2171 [®]	IE-WASSY4.029-m-IE-WASSY4.029/S2171	8031558	8031560	8031561
		m ↗ __ m ↑		IE-WWASSY4.029-m-IE-WASSY4.029/S2171	8046398	8044089	8044090
		m ↗ __ m ↗		IE-WWASSY4.029-m-IE-WWASSY4.029/S2171	8046893	8036902	8036903
IE_RJ45 ⊙	8 X Cat6A	m ↑ __ m ↑	PUR S3500 [®]	IE-WASSX8.066-m-IE-WASSX8.066/S3500	8048865	8049460	8049461
	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	m ↑ __ RJ45	PUR S3700 [®]	IE-WASSY4.029-m-IE-RJ45SS8.003/S3700	8052954	8052955	8052956
	8-apol. Cat6	m ↑ __ 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

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.

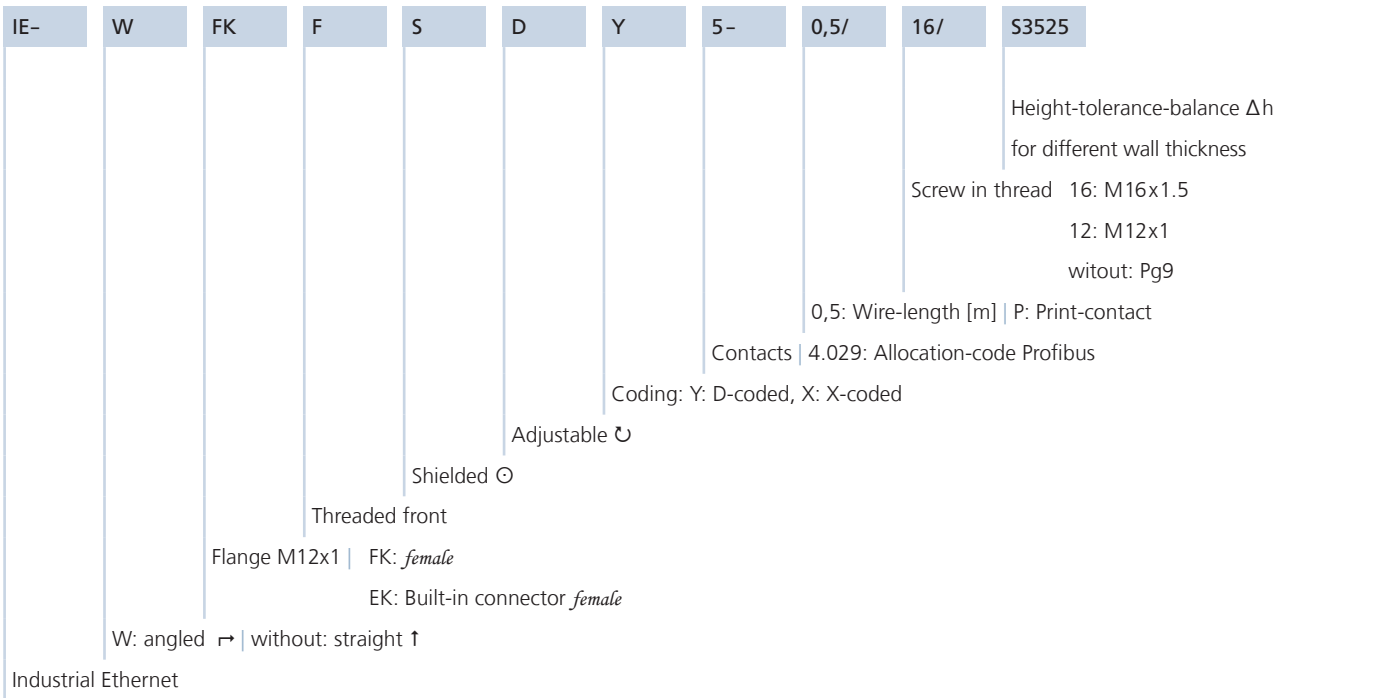
ESCHA Nomenclatur	S2171 [®]	S3500 [®]	S3700 [®]
Cable quality for	M12x1 4 D	M12x1 8 X RJ45 8-pole	RJ45 4-pole
Transmission category	Cat5e	Cat7	Cat5e
Nominal diameter	Ø 6.5mm	Ø 6.4mm	Ø 5.2mm
Wire-structure data	4xAWG22/7	4x2xAWG26/7	4xAWG26/7
Wire colours	WH YE BU OG	WH(BU) BU; WH(OG) OG; WH(GN) GN; WH(BN) BN	WH YE BU OG
Draig-chain application bending	> 200mm	5xd single	5xd single
radius	($v_{max} = 4\text{ m/s}$ $a_{max} = 4\text{ m/s}^2$)	10xd repeated	7xd repeated
Temperature range	-40°C...+70°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 [Umax]	4 D	250V	4, 8-pole	50V
	8 X	48V		
Current load [Imax]	4 D	4A	4, 8-pole	1A
	8 X	0.5A		
Insulation resistance		≥10 ⁸ Ω		
Standards		IEC 61076-2-101		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		3		1
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



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-FKSY4.029-0,5/16/S2171	8044334
		$f \mid \uparrow \mid \cup$	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-FKFDSX8-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	8050233
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	48V
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
	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

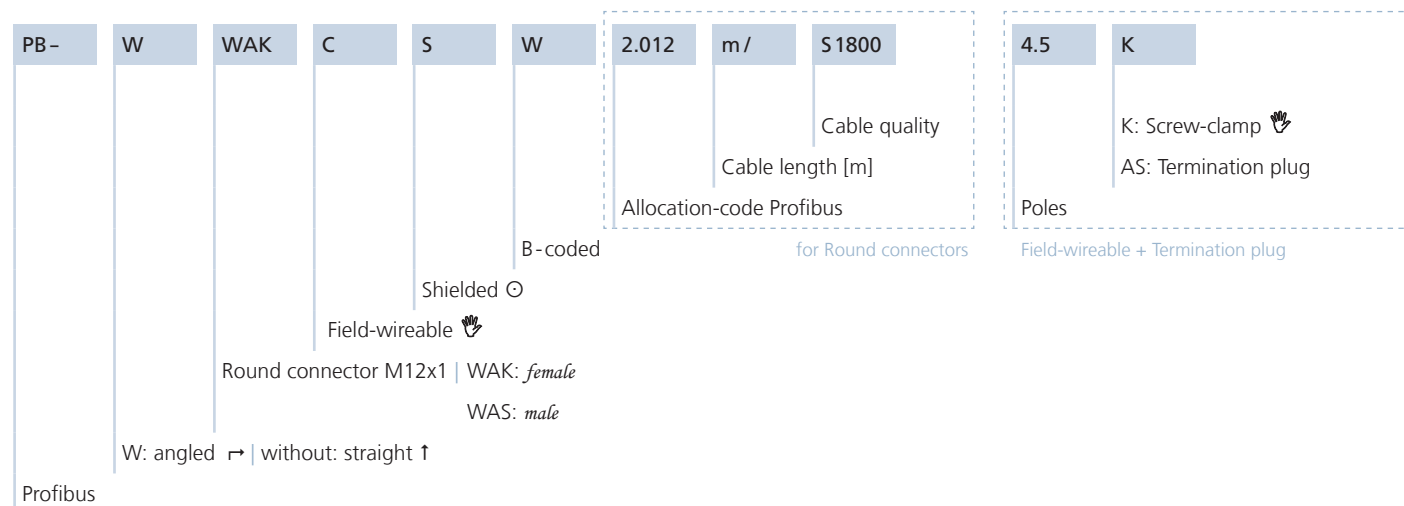
Coding

4 poles female | D

8 poles female | X

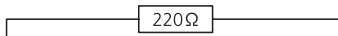
1YE | 2WH | 3OG | 4BU

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



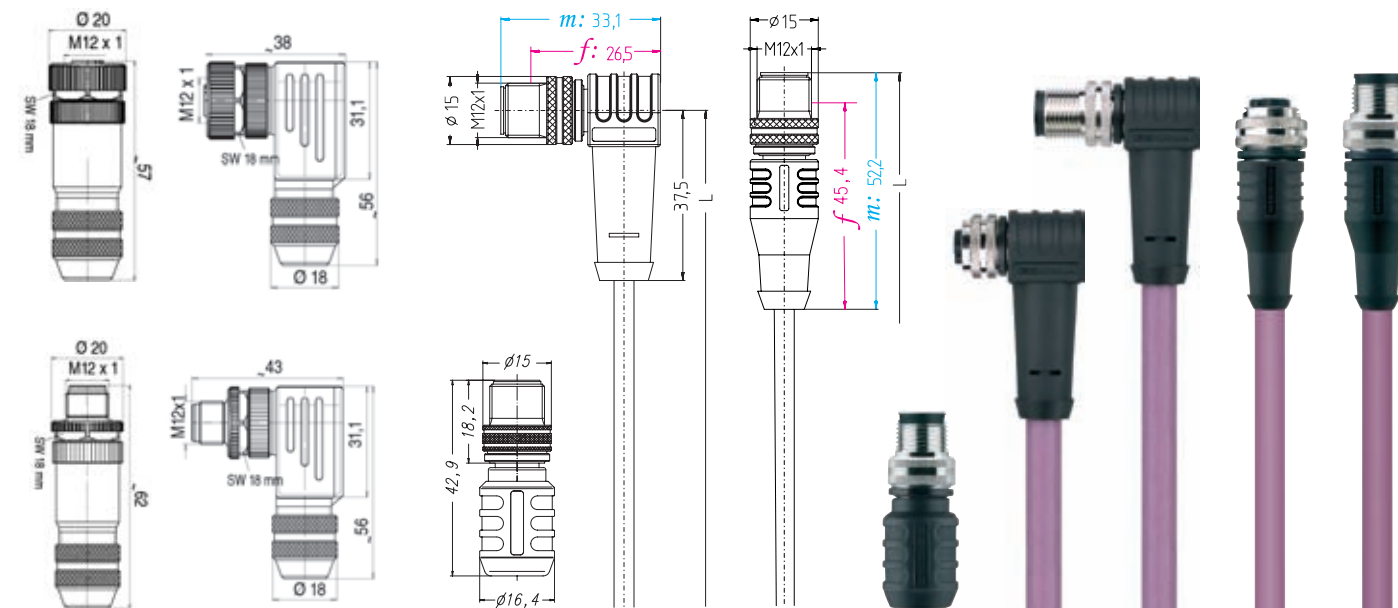
Product line	Version	Cable-quality	Type-designation	2m	Cable length m 5m10m	
PB_M12x1 ☉	$f \mid \uparrow$	PUR S1800 [®]	PB-WAKSW2.012-m/S1800	8043866	8043868	8043869
	$f \mid \rightarrow$	PUR S1800 [®]	PB-WWAKSW2.012-m/S1800	8043870	8043871	8043872
	$m \mid \uparrow$	PUR S1800 [®]	PB-WASSW2.012-m/S1800	8043873	8043874	8043875
	$m \mid \rightarrow$	PUR S1800 [®]	PB-WWASSW2.012-m/S1800	8043876	8043877	8043878
	$f \mid \uparrow \mid \text{Hand}$		PB-WAKCSW4.5K	8031376		
	$f \mid \rightarrow \mid \text{Hand}$		PB-WASCSW4.5K	8031375		
	$m \mid \uparrow \mid \text{Hand}$		PB-WWAKCSW4.5K	8040235		
	$m \mid \rightarrow \mid \text{Hand}$		PB-WWASCSW4.5K	8040236		
	Termination plug $m \mid \uparrow$		PB-WASSW4.5-AS	8043520		
	PB_M12x1 ☉	T-junction m_m_f		FSW5-WASW5-WAKW5-PDP	8011228	

Other cable lengths are available upon request.

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

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.

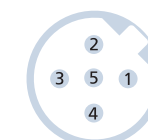
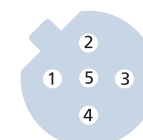


Profibus _ M12x1

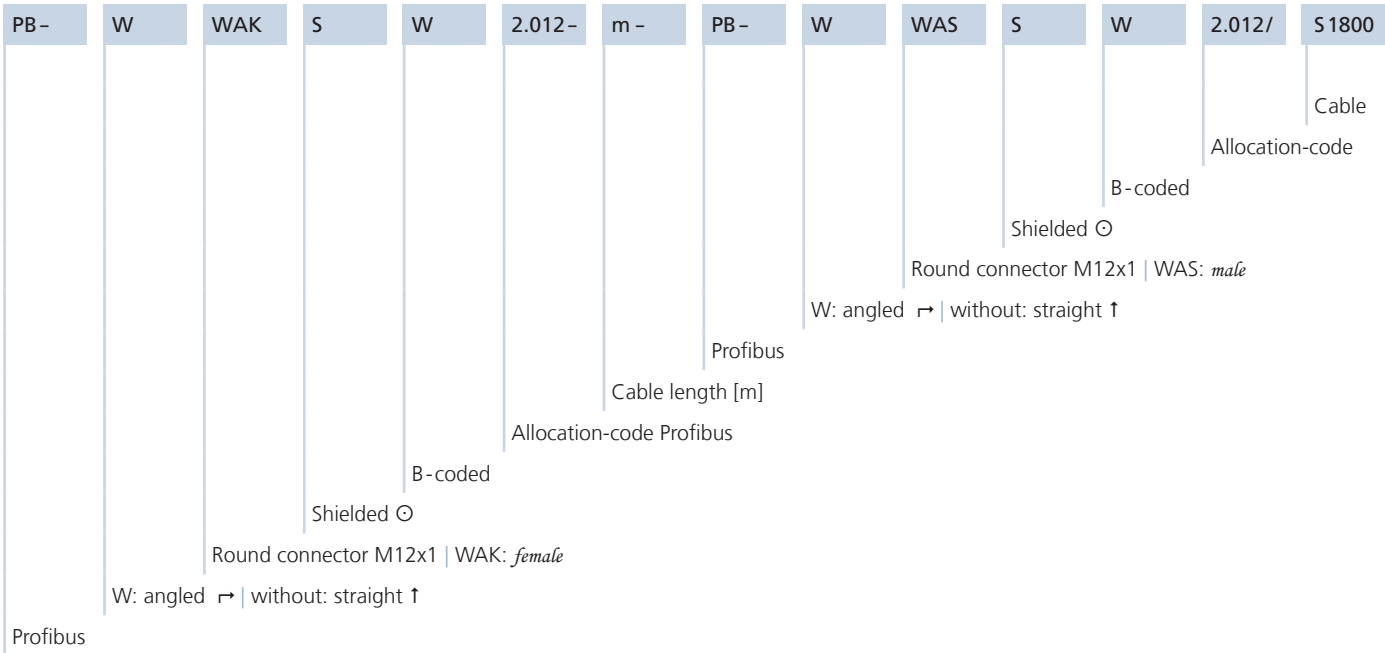
Technical data	Round connector		Field-wireable 	
	Poles	Value	Poles	Value
Rated voltage [Umax]	5	60V	5	125V
Current load [Imax]	5	4A	5	4A
Insulation resistance		≥10 ⁸ Ω		≥10 ⁸ Ω
Standards		IEC 61076-2-101		IEC 61076-2-101
Materials	Grip	TPU, BK	Grip	PA, Zinc diecasting, nickel-pl.
	Contact carrier	TPU, 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 AWG18
External diameter of the cable				Ø 6...8mm
Connection			Screw-clamp, shieldable	

Coding B

5 poles | *female*

5 poles | *male*

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

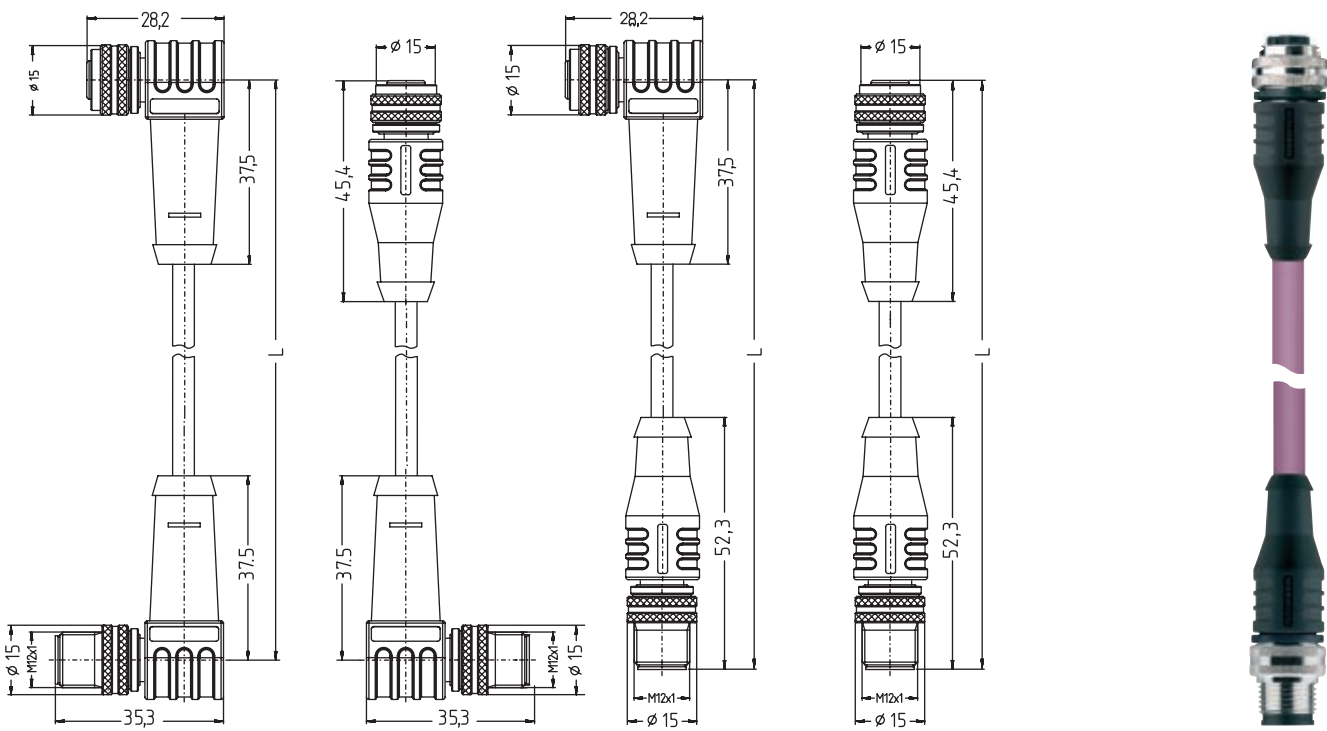


Product line	Version	Cable-quality	Type-designation	1m	Cable length m	
					2m	5m
PB_M12x1 ♂	$f \mid \uparrow _ m \mid \uparrow$	PUR S2800 [®]	PB-WAKSW2.012-m-PB-WASSW2.012/S1800	8045613	8043867	8043879
	$f \mid \rightarrow _ m \mid \uparrow$	PUR S1800 [®]	PB-WWAKSW2.012-m-PB-WASSW2.012/S1800	8046479	8043881	8043882
	$f \mid \uparrow _ m \mid \rightarrow$	PUR S1800 [®]	PB-WAKSW2.012-m-PB-WWASSW2.012/S1800	8051935	8043884	8043885
	$f \mid \rightarrow _ m \mid \rightarrow$	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 5 m/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.



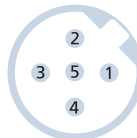
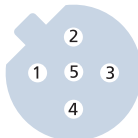
Profibus _ M12x1 junction cable

Technical data	Poles	Value
Rated voltage [U _{max}]	5	60V
Current load [I _{max}]	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

Coding B

5 poles | *female*

5 poles | *male*



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

PB-

W

FK

F

S

D

W

5-

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

Contacts | 2.012: Allocation-code Profibus

B-Coding

Adjustable $\odot$

Shielded $\odot$

Threaded front

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

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

Profibus



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	$m \mid \curvearrowright \mid \odot$	Fig. 2	PB-WFSFSW5-P/12	8045658
		$f \mid \curvearrowright \mid \odot \mid \Delta h < 2.5\text{mm}$	Fig. 1	PB-WFKFSW5-P/12/S3525	8050279
		$f \mid \curvearrowright \mid \odot \mid \Delta h < 4.0\text{mm}$	Fig. 1	PB-WFKFSW5-P/12/S3540	8050280
		$f \mid \curvearrowright \mid \odot \mid \Delta h < 5.0\text{mm}$	Fig. 1	PB-WFKFSW5-P/12/S3550	8050281

Other wire-lengths are available upon request.



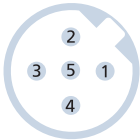
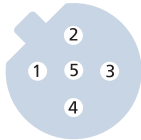
Fig. 1
Dimensional drawings see page 86/87

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.

CD -

W

WAK

C

5.022 -

m /

S2800

Allocation-code CANopen | DeviceNet

Field-wireable

Round connector M12x1 | WAK: female

WAS: male

W: angled | without: straight

CANopen | DeviceNet

5

K /

S3234

120Ω between PIN4 and PIN5

K: Screw-clamp

AS: Termination plug

Poles

Field-wireable + Termination plug



Product line	Version	Cable-quality	Type-designation		2m	Cable length m 5m10m
CD_M12x1	f ↑	PUR S2800	CD-WAK5.022-m/S2800		8047517	80475188047519
	f ↗	PUR S2800	CD-VWAK5.022-m/S2800		8047520	80475218047522
	m ↑	PUR S2800	CD-WAS5.022-m/S2800		8047523	80475248047525
	m ↗	PUR S2800	CD-VWAS5.022-m/S2800		8047526	80475278047528
	f ↑		WAKC5K	8004815		
	f ↗		WWAKC5K	8004809		
	m ↑		WASC5K	8004805		
	m ↗		WWASC5K	8004807		
	Termination plug f ↑		CD-WAK2.010-AK/S3234	8047942		
	Termination plug m ↑		CD-WAS2.010-AK/S3234	8047943		
	T-junction f_f_m		FKM5-FKM5-FSM5/S222	8035172		
Other cable lengths are available upon request.						

Wiring

Termination plug | S3234

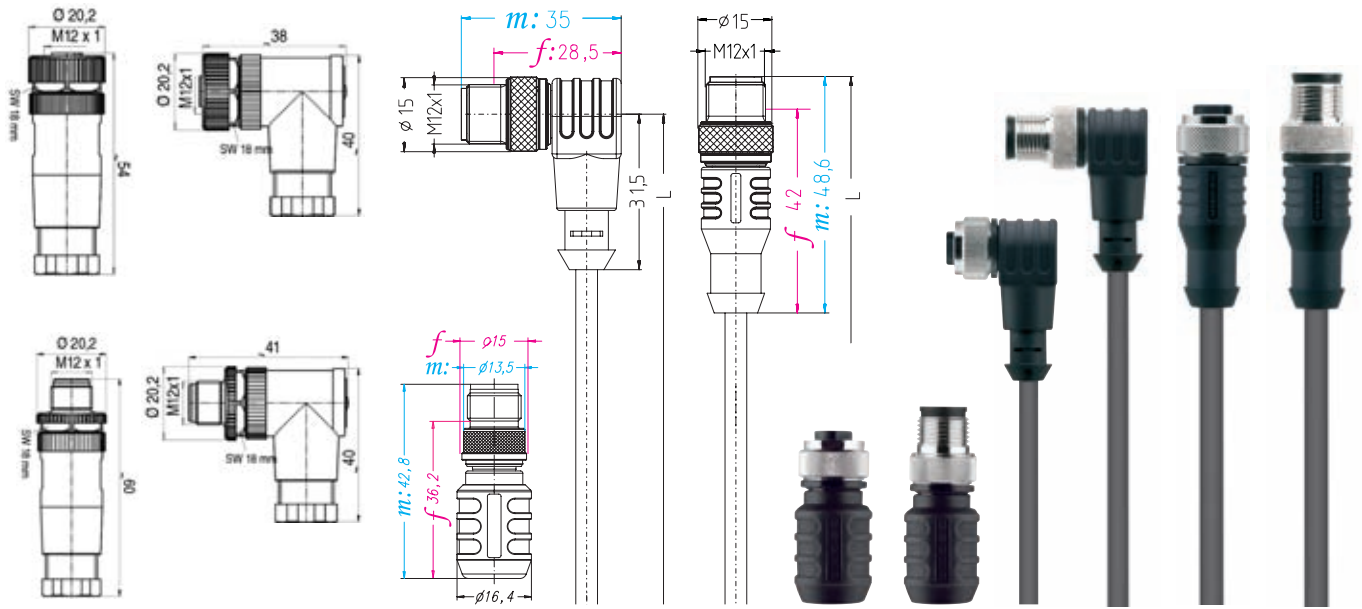
T-junction

Dimensional drawing

T-junction

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.



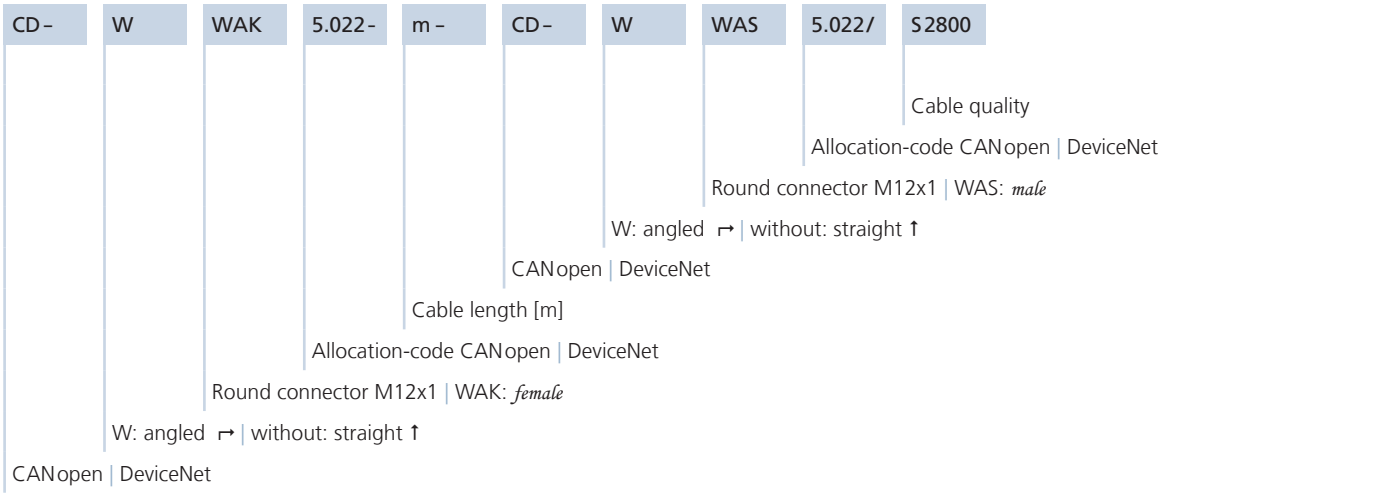
CANopen DeviceNet _ M12x1				
Technical data	Round connector		Field-wireable	
	Poles	Value	Poles	Value
Rated voltage [Umax]	4+GND	60V	4+GND	125V
Current load [Imax]	4+GND	4A	4+GND	4A
Insulation resistance		≥10 ⁸ Ω		≥10 ⁸ Ω
Standards		IEC 61076-2-101		IEC 61076-2-101
Materials	Grip	TPU, BK	Grip	PA, BK
	Contact carrier	TPU, BK	Contact carrier	PA, BK
	Sealing (female)	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 mm ² 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)

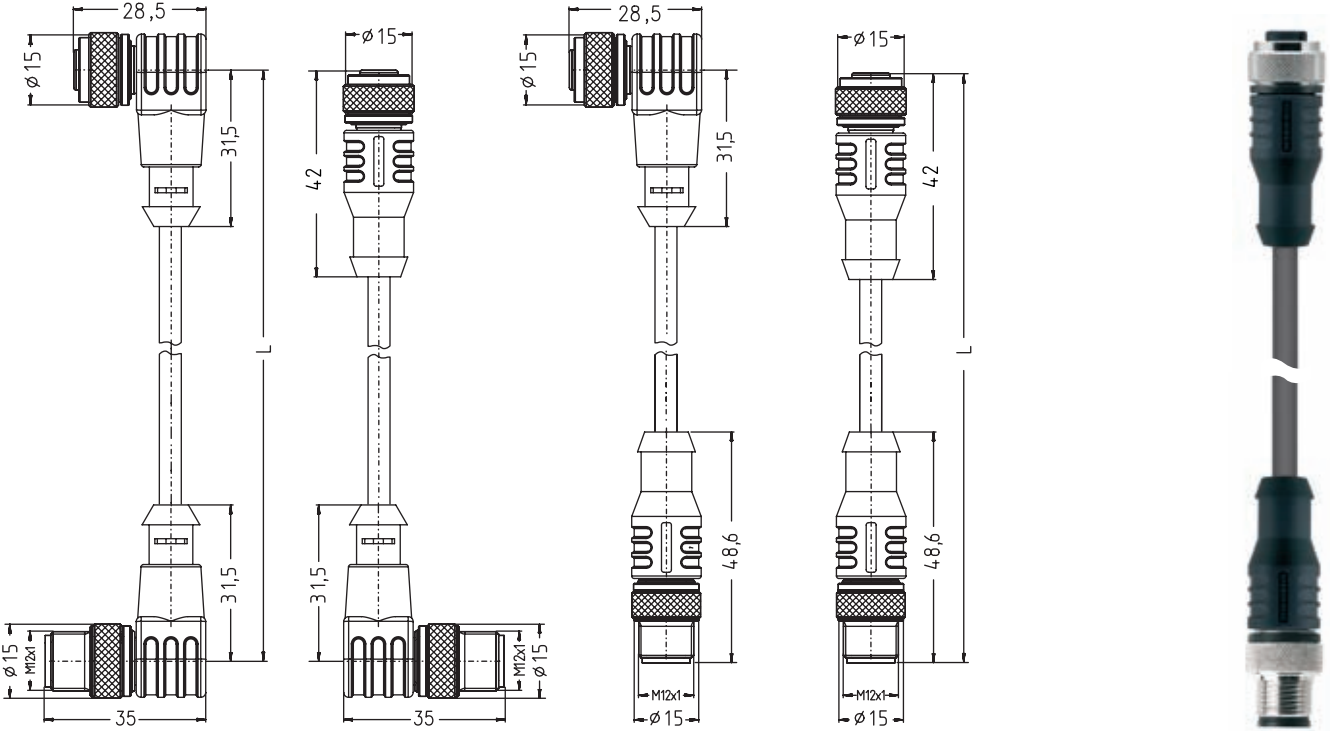


Product line	Version	Cable-quality	Type-designation	1m	Cable length m	
					2m	5m
CD_M12x1	<i>f</i> ↑ __ <i>m</i> ↑	PUR S2800 [®]	CD-WAK5.022-m-CD-WAS5.022/S2800	8047491	8047492	8047494
	<i>f</i> ↗ __ <i>m</i> ↑		CD-WWAK5.022-m-CD-WAS5.022/S2800	8051937	8047529	8047530
	<i>f</i> ↑ __ <i>m</i> ↗		CD-WAK5.022-m-CD-WWAS5.022/S2800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



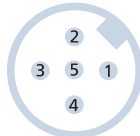
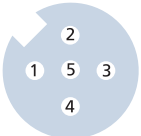
CANopen | DeviceNet _ M12x1 junction cable

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)

CD-

W

FK

F

D

5-

0,5/

16

Screw in thread M16x1,5

0,5: Wire-length [m]

Contacts | 5.022: Allocation-code CANopen | DeviceNet

Adjustable ⤵

Threaded front

Flange M12x1 | FK: *female*

FS: *male*

W: angled ↗ | without: straight ↑

CANopen | DeviceNet



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

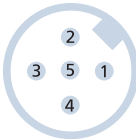
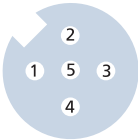
Other wire-lengths are available upon request.



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

Dimensional drawings see page 86/87

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 154

Print-contact

Wire-contact

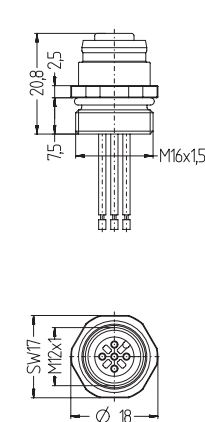
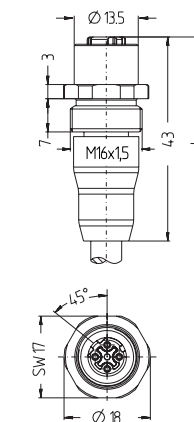
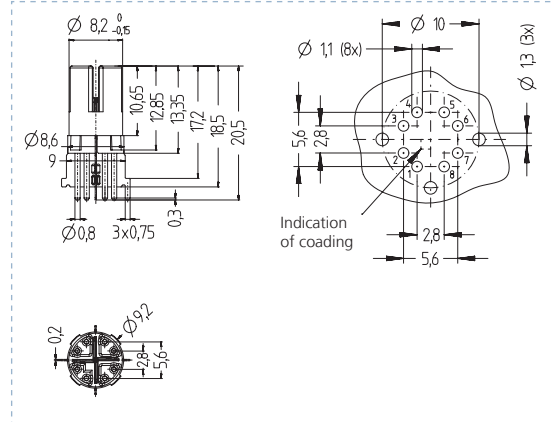
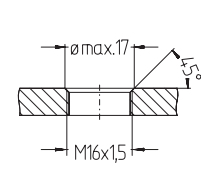
f | ↑ | CuZn

IE-EKSX8P

IE-FKS_0,5/16 O

(IE/PB/CD)-FK_-0,5/16

Panel cut-out

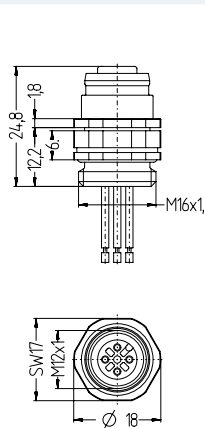
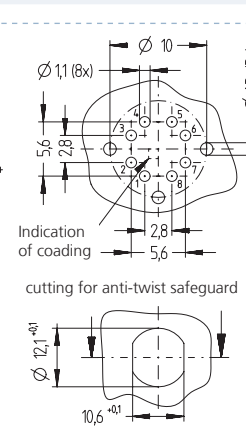
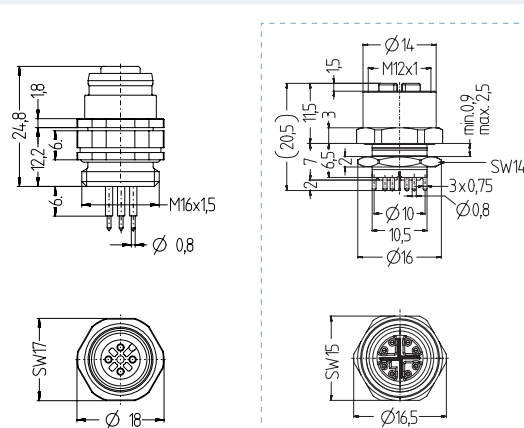
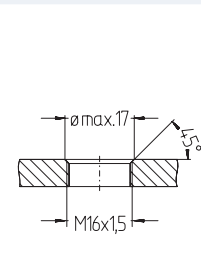


f | ↑ | CuZn | U

IE-FKD_-P/16

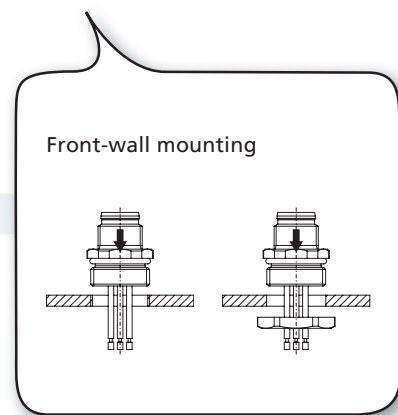
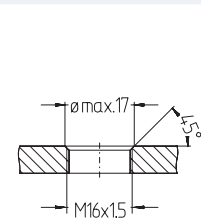
IE-FKD(H)SX8-P/12

(IE/PB)-FKD_-0,5/16



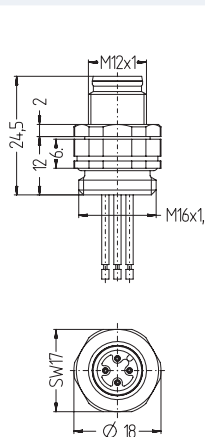
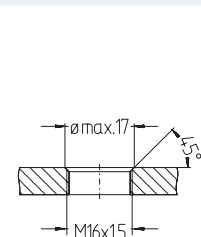
m | ↑ | CuZn

(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

Print-contact

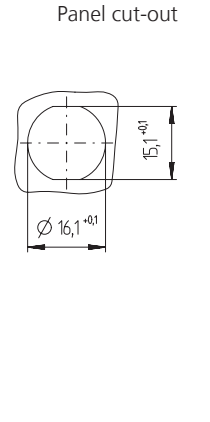
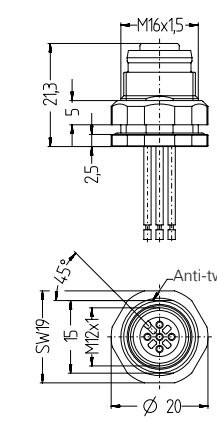
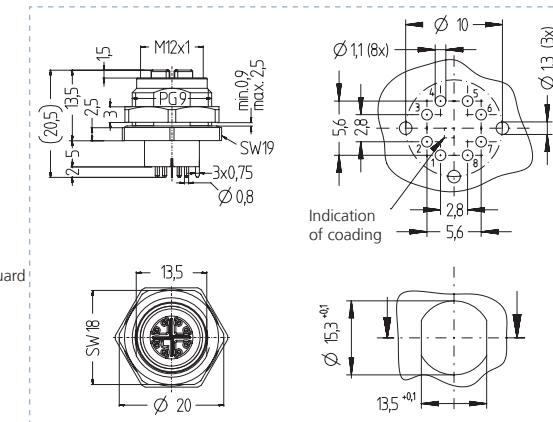
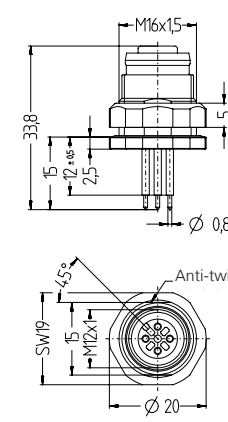
IE-FKFD-P

IE-FKFD(H)SX8-P

CD-FKFD_-0,5/16

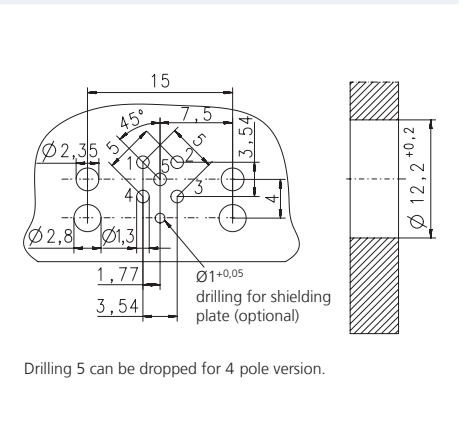
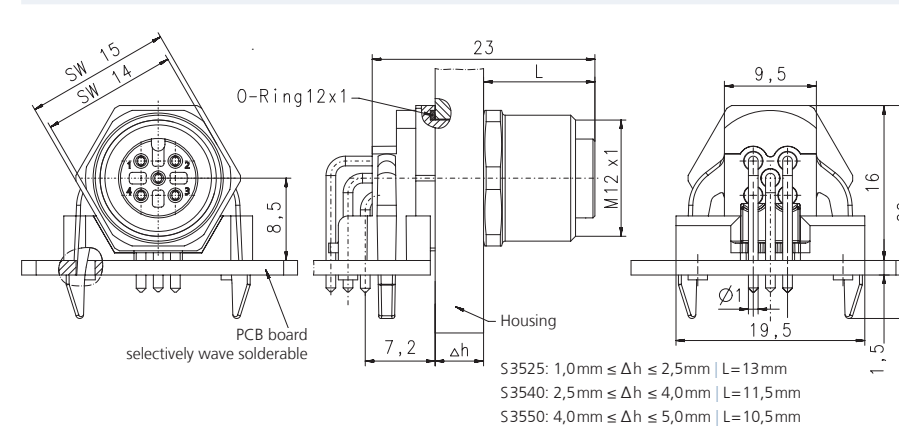
f | ↑ | CuZn

Panel cut-out

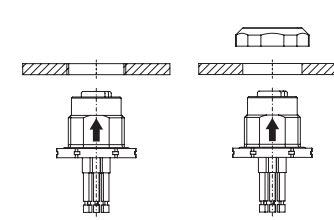


(IE/PB)-WFKF_-P/12/S... | see Δh

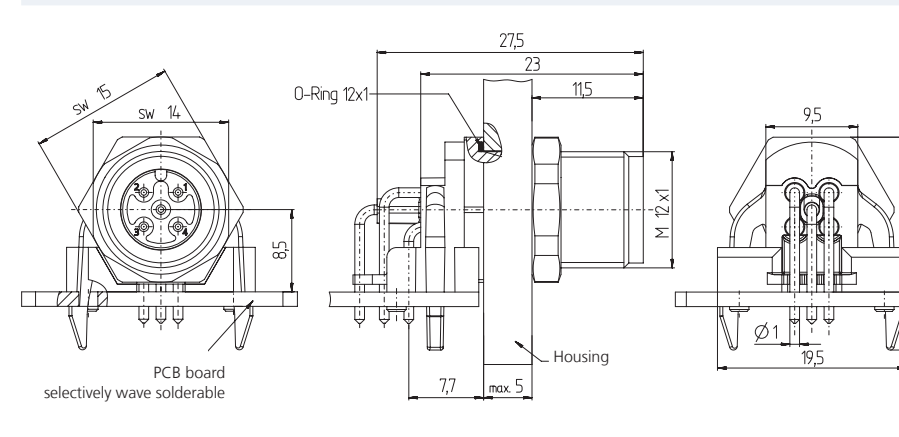
f | ↑ | CuZn | Δh



Back-wall mounting

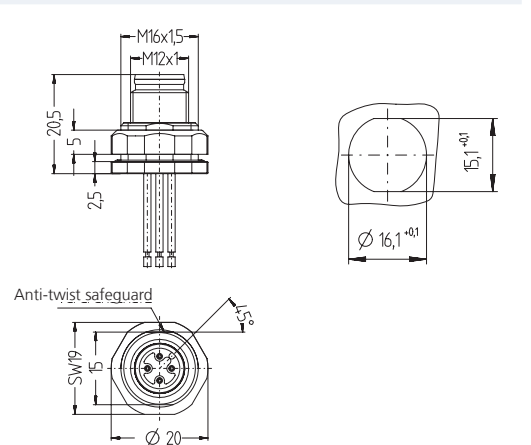


PB-WFSF_-P/12

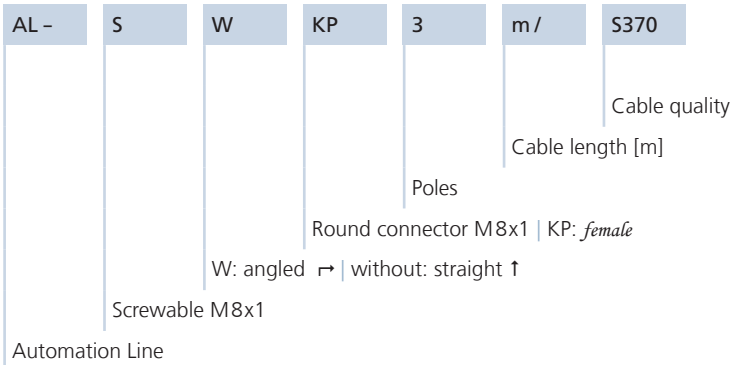


(PB/CD)-FSFD_-0,5/16

m | ↑ | CuZn (V4A)

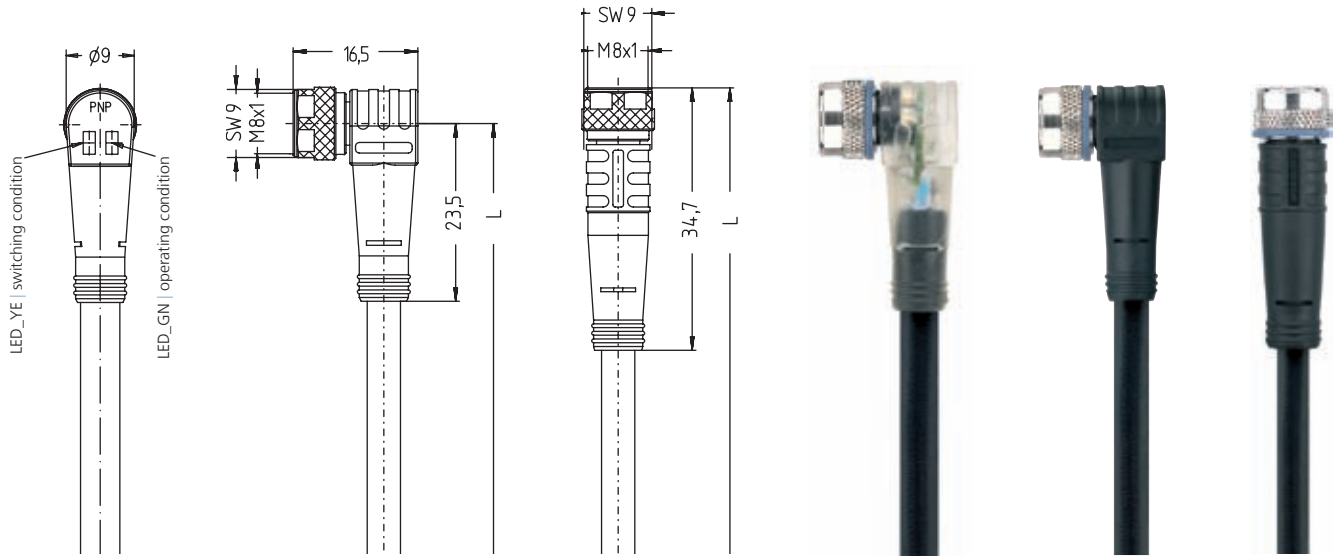


m | ↑ | CuZn



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	8051229	8051230	8051231
		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-SWKP3P2-m/P00	8051113	8051114	8051115
			4	AL-SWKP4P2-m/P00	8051116	8051117	8051118
			5	AL-SWKP4.5-m/P00	8047049	8051852	8051853
		PUR S370 [®]	3	AL-SWKP3P2-m/S370	8045344	8045419	8045420
			4	AL-SWKP4P2-m/S370	8045345	8045421	8045422
			5	AL-SWKP4.5-m/S370	8051861	8051862	8051863
	f ↗ LED2	PVC P00	3	AL-SWKP3P2-m/P00	8051113	8051114	8051115
			4	AL-SWKP4P2-m/P00	8051116	8051117	8051118
			5	AL-SWKP4.5-m/P00	8047049	8051852	8051853
		PUR S370 [®]	3	AL-SWKP3P2-m/S370	8045344	8045419	8045420
			4	AL-SWKP4P2-m/S370	8045345	8045421	8045422
			5	AL-SWKP4.5-m/S370	8051861	8051862	8051863

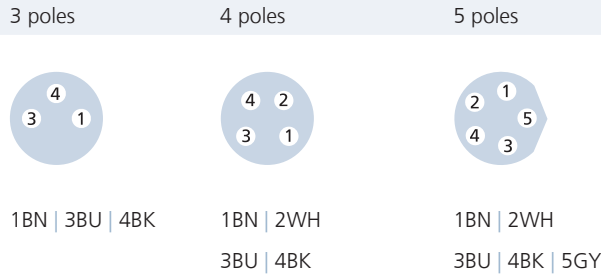
Other versions and cable-lengths are available upon request.



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



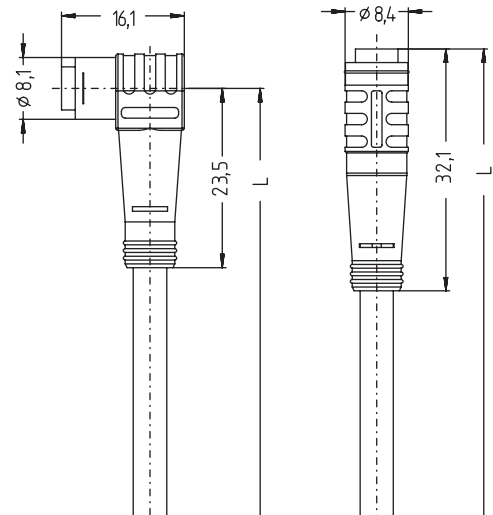
LED-versions



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	Cable length m		
					2m	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
			5	AL-WKP4.5-m/S370	8050022	8050023	8050024
		PVC P00	3	AL-WKP3-m/P00	8052693	8052694	8052695
			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

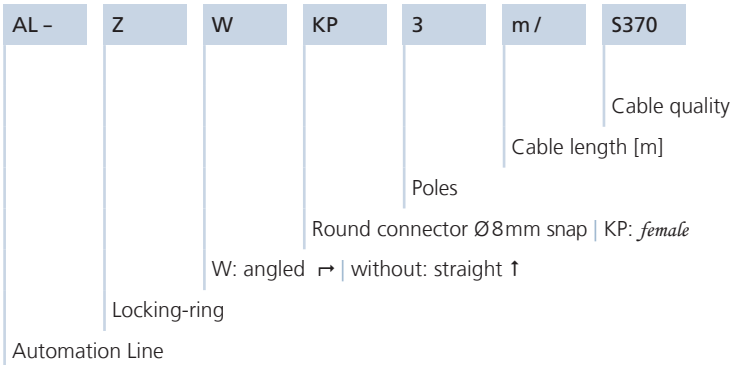
Other versions and cable-lengths are available upon request.



Automation Line® Ø8mm snap *female*

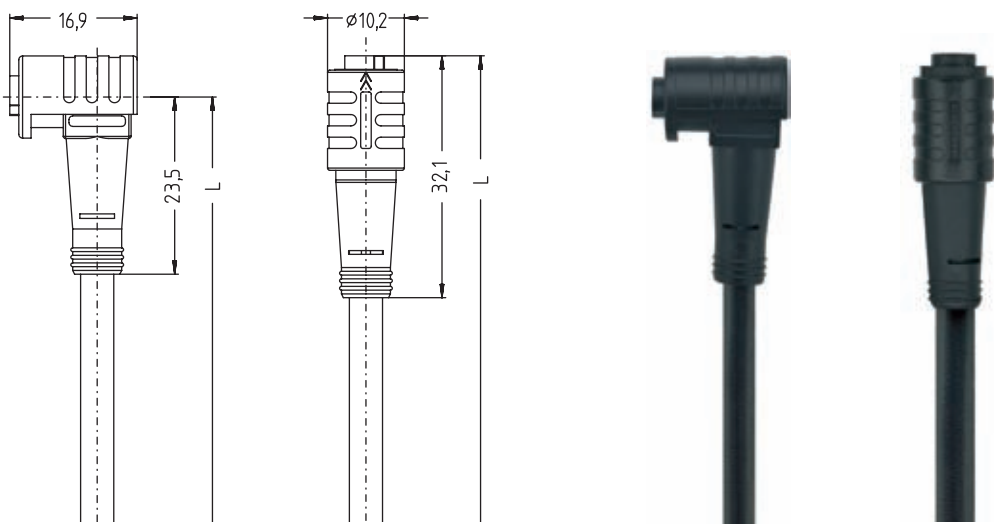
Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing	FPM/FKM
	Contacts	CuZn, gold-plated
Ambient temperature		-30°C...+90°C
Degree of pollution		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	f ↑ 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
	f ↗ Locking-ring	PVC P01 [®]	3	AL-ZKP3-m/P01	8052733	8052734	8052735
			4	AL-ZKP4-m/P01	8052736	8052737	8052738
			5	AL-ZKP4.5-m/P01	8052739	8052740	8052741
		PUR S370 [®]	3	AL-ZWKP3-m/S370	8052683	8052684	8052685
			4	AL-ZWKP4-m/S370	8046075	8052686	8052687
			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
		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 *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
	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 <i>female</i>		
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 ↑

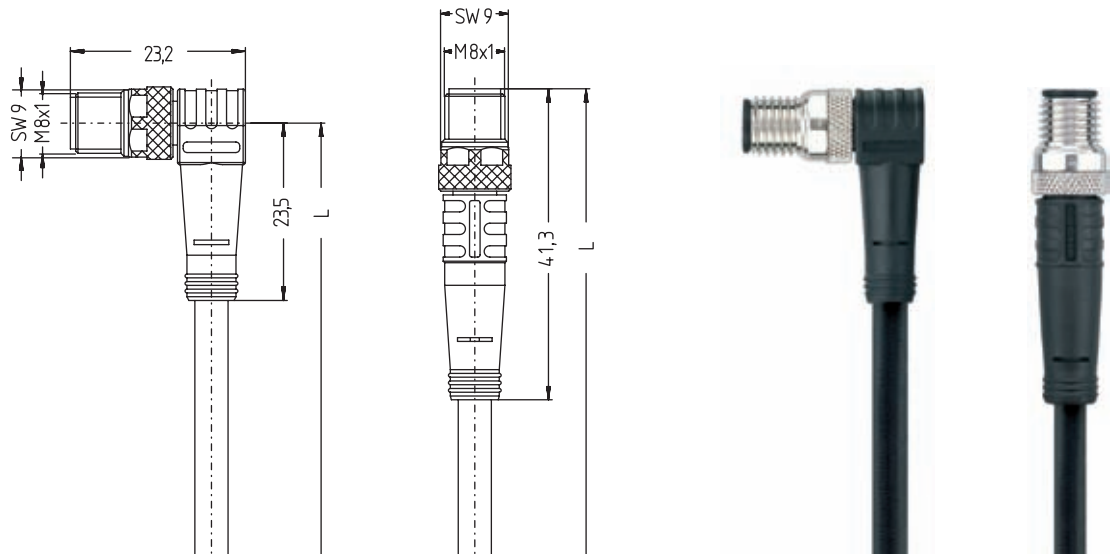
Screwable

Automation Line



Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M8x1	<i>m</i> ↑	PUR S370 [®]	3	AL-SSP3-m/S370	8051322	8051323	8051324
			4	AL-SSP4-m/S370	8051325	8051326	8051327
			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
	<i>m</i> ↗	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 [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
	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

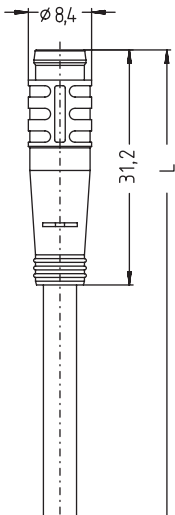
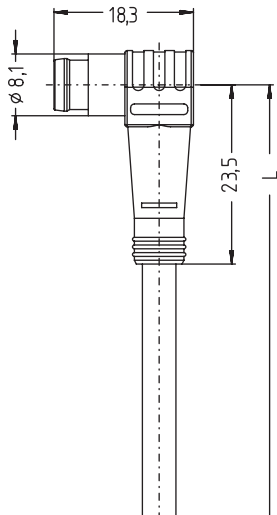
Round connector Ø8mm snap | SP: *male*

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/S370	8051908	8051909	8051910
			4	AL-WSP4-m/S370	8052677	8052678	8052679
			5	AL-WSP4.5-m/S370	8050019	8050020	8050021
		PVC P00	3	AL-WSP3-m/P00	8052502	8052503	8052504
			4	AL-WSP4-m/P00	8052702	8052703	8052704
		PVC P01 [®]	3	AL-WSP3-m/P01	8043900	8050003	8050004
			4	AL-WSP4-m/P01	8052505	8052506	8052507

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 threaded condition)		IP67
Mechanical life cycle		>100 mating cycles

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



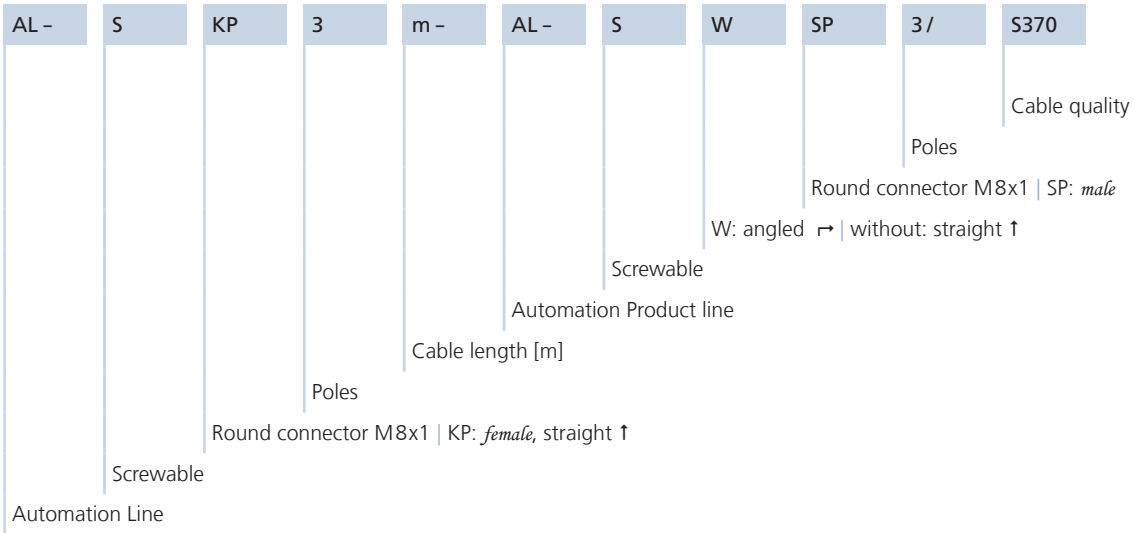
1BN | 3BU | 4BK



1BN | 2WH
3BU | 4BK

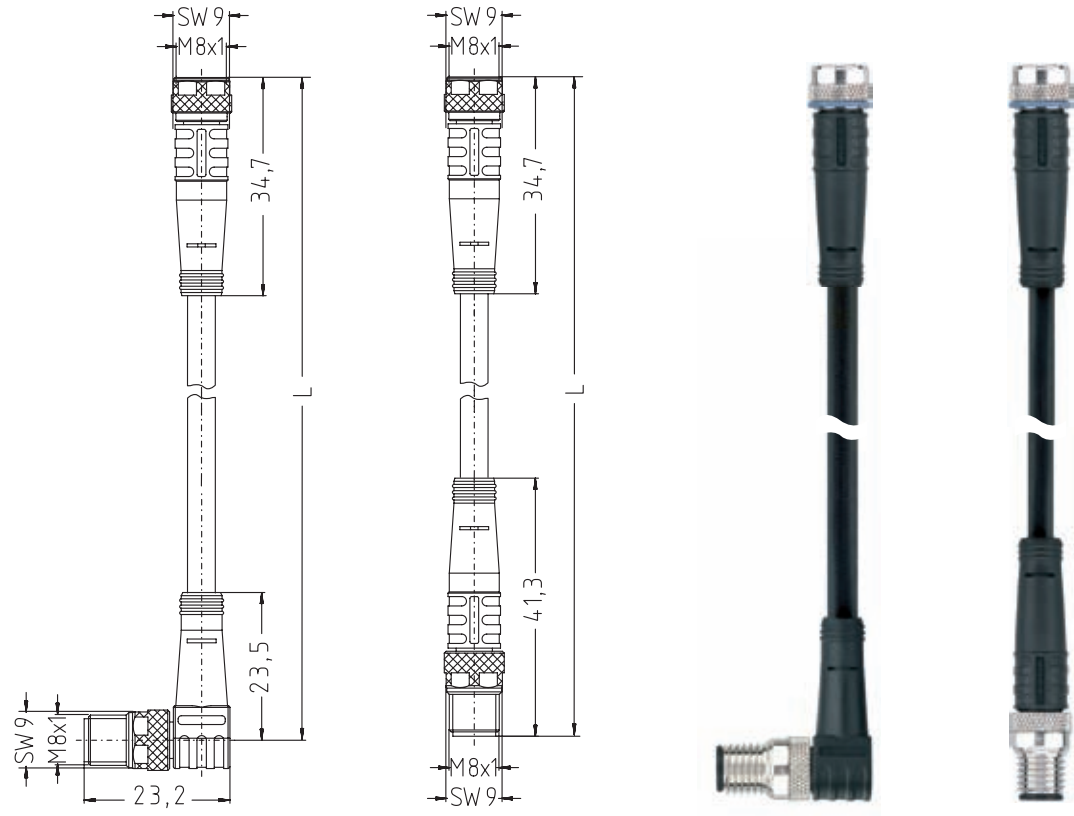


1BN | 2WH | 3BU
4BK | 5GY

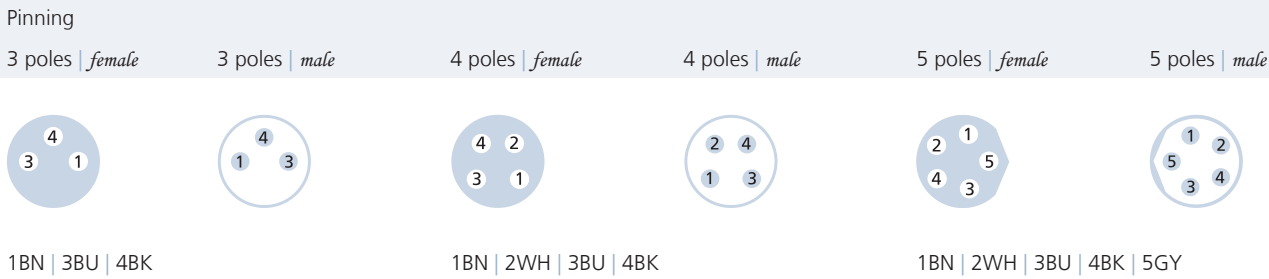


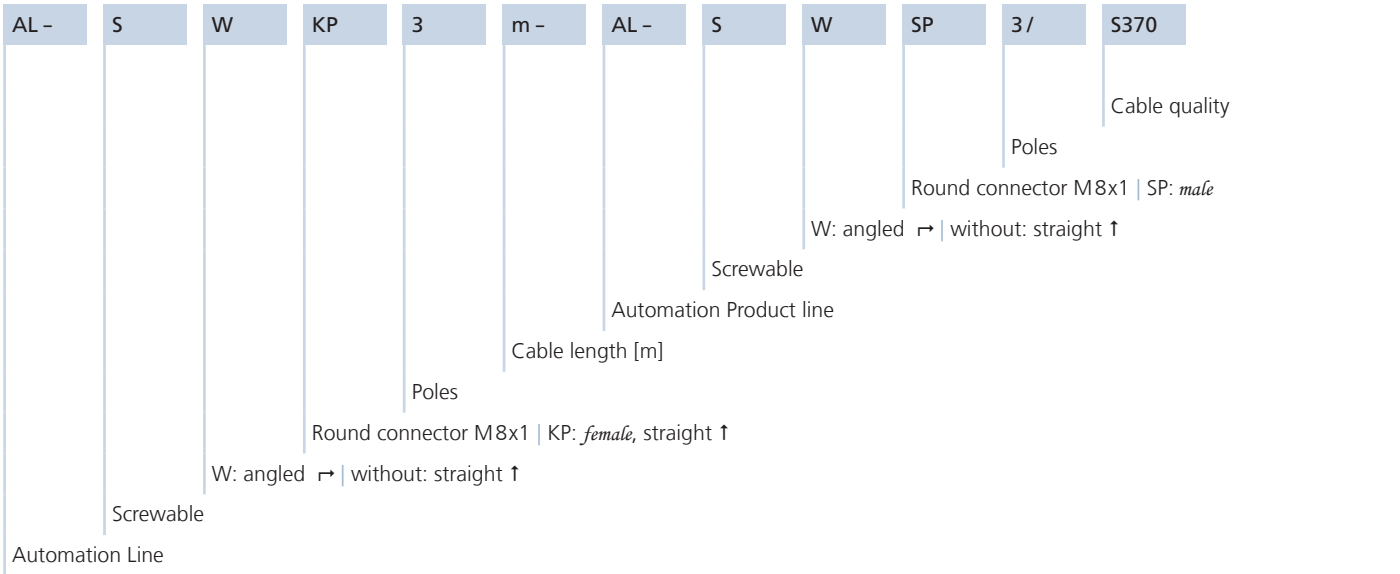
Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M8x1	f ↑__m ↑	PUR S370 [®]	3	AL-SKP3-m-AL-SSP3/S370	8044811	8044002	8044003
			4	AL-SKP4-m-AL-SSP4/S370	8045944	8044017	8044018
			5	AL-SKP4.5-m-AL-SSP4.5/S370	8052755	8052756	8052757
		PVC P00	3	AL-SKP3-m-AL-SSP3/P00	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 ↑__m ↗	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	8046587	8044023	8044024
			4	AL-SKP4-m-AL-SWSP4/S370	8052764	8052765	8052766
			5	AL-SKP4.5-m-AL-SWSP4.5/S370	8051440	8051441	8051442
	PVC P00		3	AL-SKP3-m-AL-SWSP3/P00	8051453	8051454	8051455
			4	AL-SKP4-m-AL-SWSP4/P00	8042859	8042860	8042861
			5	AL-SKP4.5-m-AL-SWSP4.5/P00	8051649	8051650	8051651
	PVC P01 [®]		3	AL-SKP3-m-AL-SWSP3/P01	8051661	8051662	8051663
			4	AL-SKP4-m-AL-SWSP4/P01			
			5	AL-SKP4.5-m-AL-SWSP4.5/P01			

Other versions and cable-lengths are available upon request.



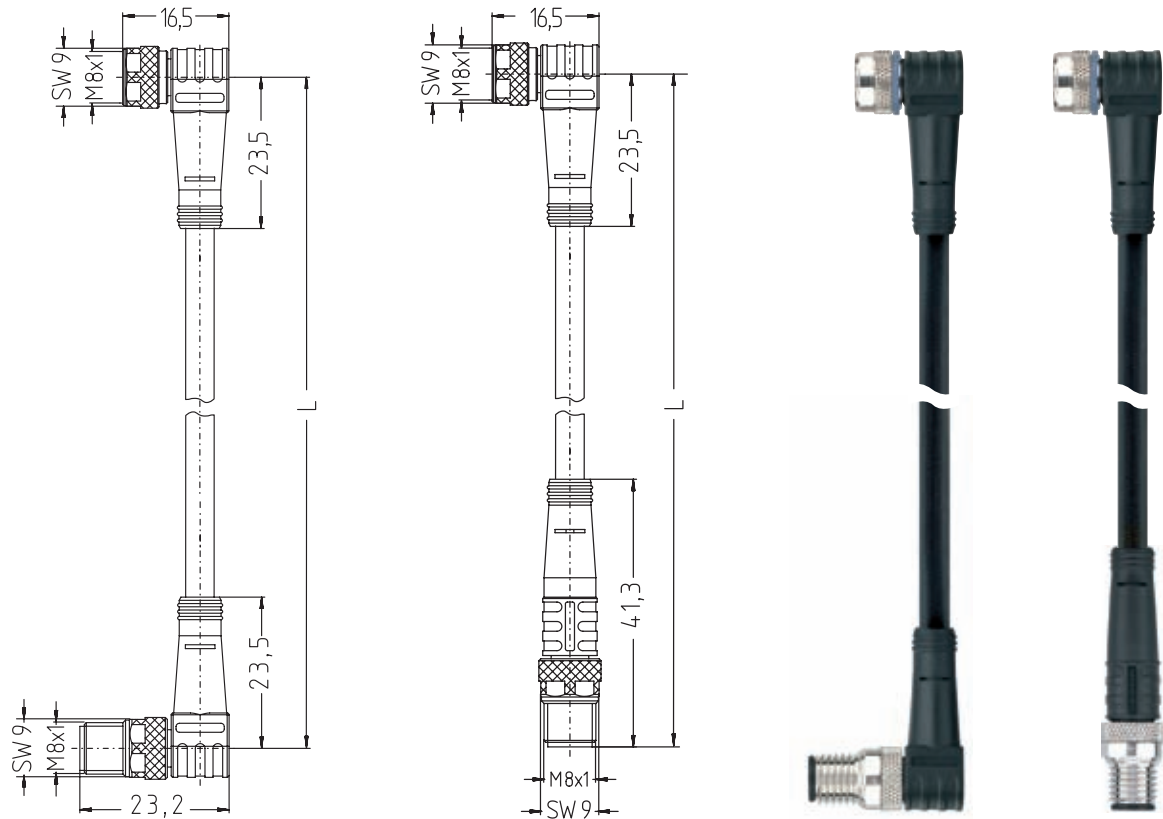
Automation Line® M8x1 junction cable		
Technical data	Poles	Value
Rated voltage [Umax]	3	60V
	4, 5	30V
Current load [Imax]	3, 4	4A
	5	3A
Insulation resistance		≥ 10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Grip	TPU, BK
	Contact carrier	TPU, BK
	Sealing (<i>female</i>)	FPM/FKM
	Contacts	CuZn, gold-plated
	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





Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m	10m
AL_M8x1	<i>f</i> ↗ <i>m</i> ↑	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	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 [®]	PVC P01 [®]	3	AL-SWKP3-m-AL-SSP3/P01	8051652	8051653	8051654
			4	AL-SWKP4-m-AL-SSP4/P01	8051664	8051665	8051666
	<i>f</i> ↗ <i>m</i> ↗	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	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 [®]	PVC P01 [®]	3	AL-SWKP3-m-AL-SWSP3/P01	8051646	8051647	8051648
			4	AL-SWKP4-m-AL-SWSP4/P01	8051658	8051659	8051660
	<i>f</i> ↗ LED2 <i>m</i> ↑	PUR S370 [®]	3	AL-SWKP3P2-m-AL-SSP3/S370	8047130	8045932	8045933
			4	AL-SWKP4P2-m-AL-SSP4/S370	8049863	8045935	8045936
	PVC P00	PVC P00	3	AL-SWKP3P2-m-AL-SSP3/P00	8051531	8051532	8051533
			4	AL-SWKP4P2-m-AL-SSP4/P00	8051534	8051535	8051536
	PVC P01 [®]	PVC P01 [®]	3	AL-SWKP3P2-m-AL-SSP3/P01	8051739	8051740	8051741
			4	AL-SWKP4P2-m-AL-SSP4/P01	8051742	8051743	8051744

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)			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

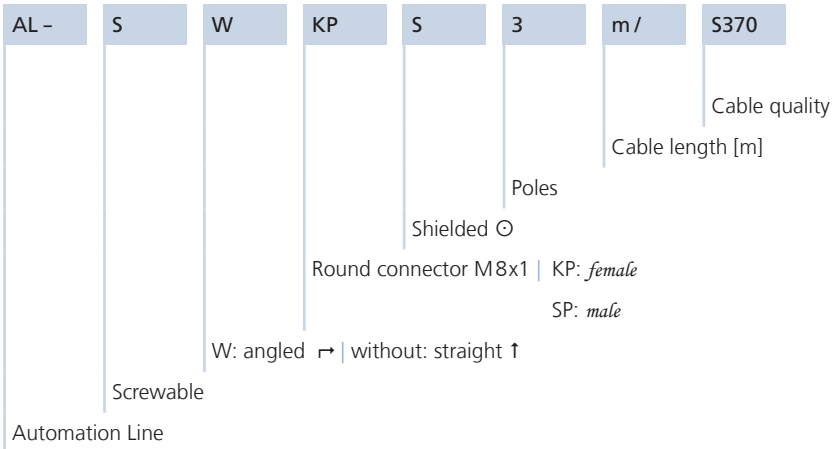


1BN | 2WH | 3BU | 4BK



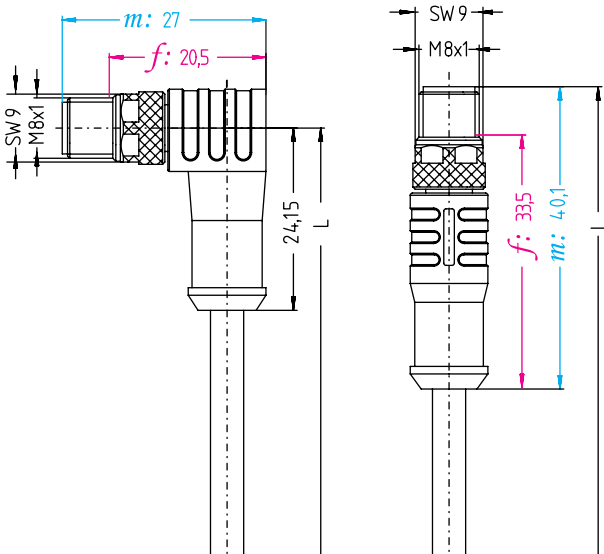
1BN | 2WH | 3BU | 4BK | 5GY





Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
AL_M8x1 ○	<i>f</i> ↑	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
		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
	<i>f</i> ↗	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
		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
	<i>m</i> ↑	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 [®]	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
	<i>m</i> ↗	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
		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)		IP 67, IP 69K
Mechanical life cycle		>100 mating cycles

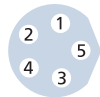
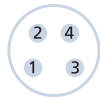
Pinning					
3 poles <i>female</i>	3 poles <i>male</i>	4 poles <i>female</i>	4 poles <i>male</i>	5 poles <i>female</i>	5 poles <i>male</i>



1BN | 3BU | 4BK

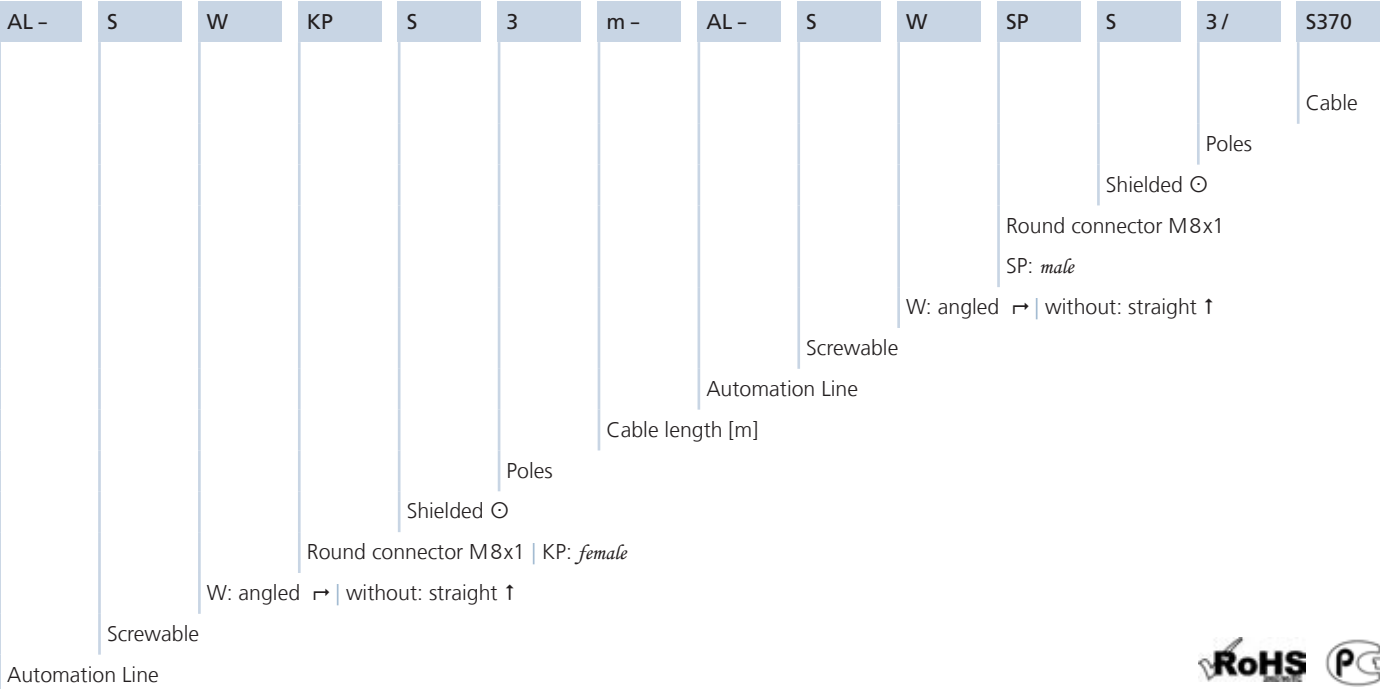


1BN | 2WH | 3BU | 4BK



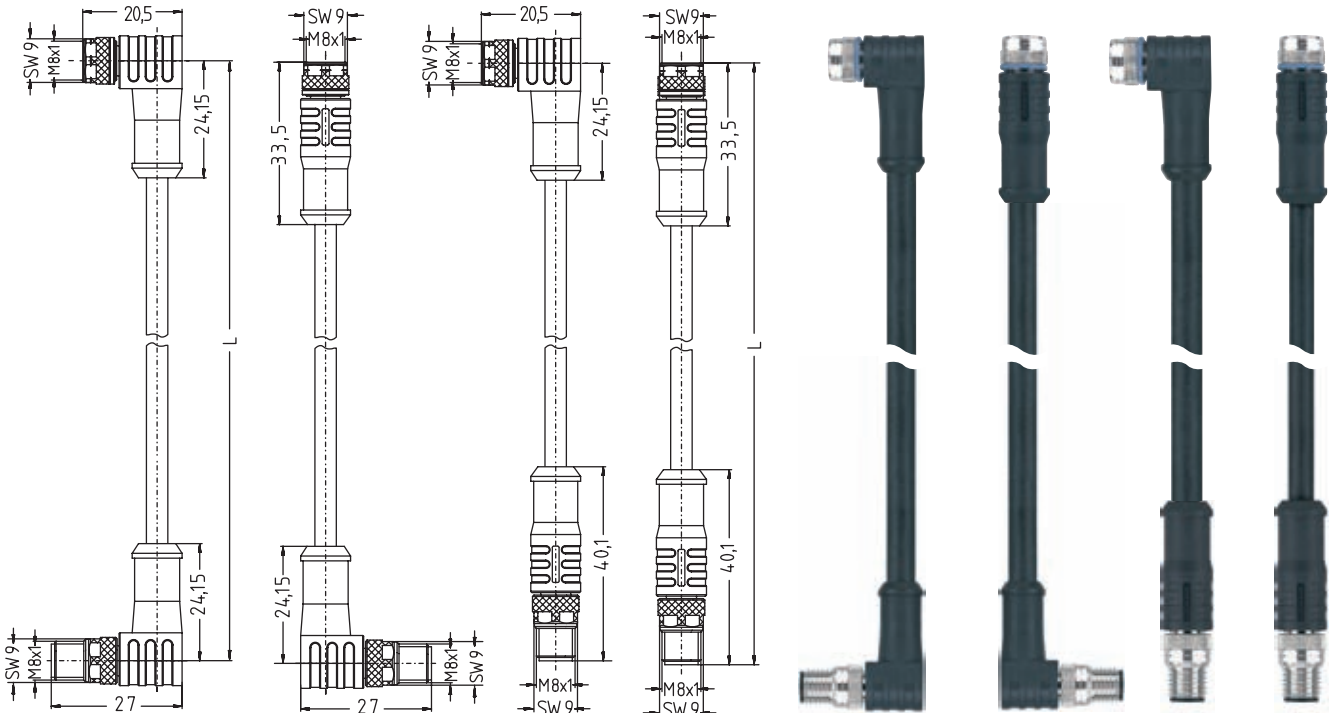
1BN | 2WH | 3BU | 4BK | 5GY





Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						5m	10m
AL_M8x1 O	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
			5	AL-SKPS4.5-m-AL-SSPS4.5/P01	8051772	8051773	8051774
		PUR S370 ®	3	AL-SKPS3-m-AL-SWSPS3/S370	8051915	8046252	8046253
			4	AL-SKPS4-m-AL-SWSPS4/S370	8051916	8046264	8046265
			5	AL-SKPS4.5-m-AL-SWSPS4.5/S370	8052777	8052778	8052779
	f ↗__m ↑	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
			5	AL-SKPS4.5-m-AL-SWSPS4.5/P01	8051772	8051773	8051774
		PUR S370 ®	3	AL-SWKPS3-m-AL-SSPS3/S370	8051917	8046255	8046256
			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
	f ↗__m ↗	PVC P01 ®	3	AL-SWKPS3-m-AL-SSPS3/P01	8051775	8051776	8051777
			4	AL-SWKPS4-m-AL-SSPS4/P01	8051787	8051788	8051789
			5	AL-SWKPS4.5-m-AL-SSPS4.5/P01	8051772	8051773	8051774
		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
			5	AL-SWKPS4.5-m-AL-SWSPS4.5/P01	8051772	8051773	8051774

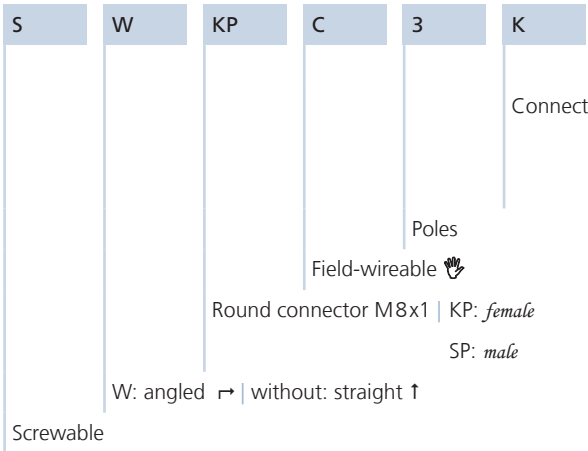
Other versions and cable-lengths are available upon request.



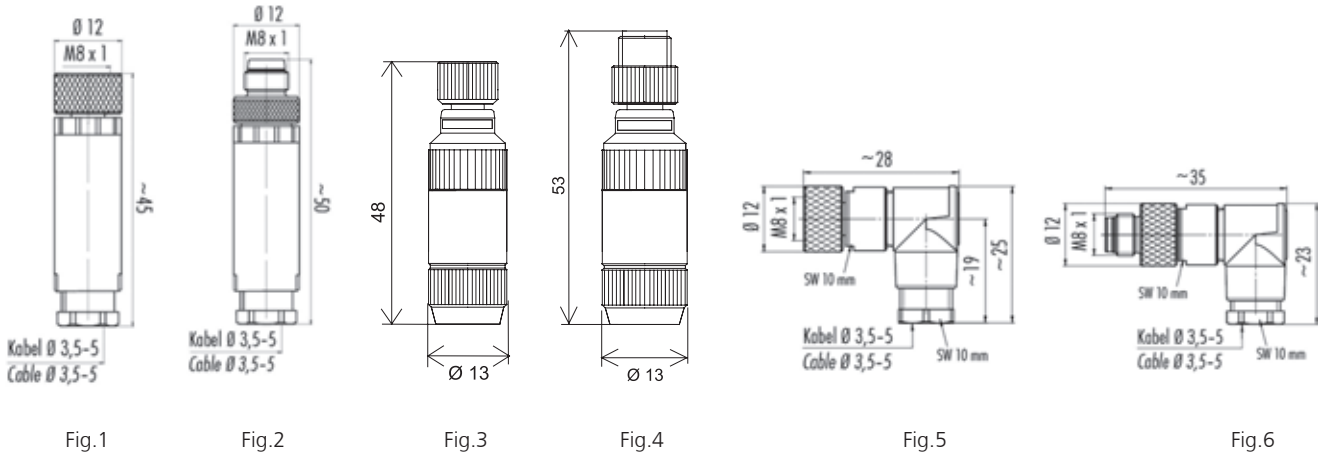
Automation Line® M8x1 junction cable shielded ☉

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	



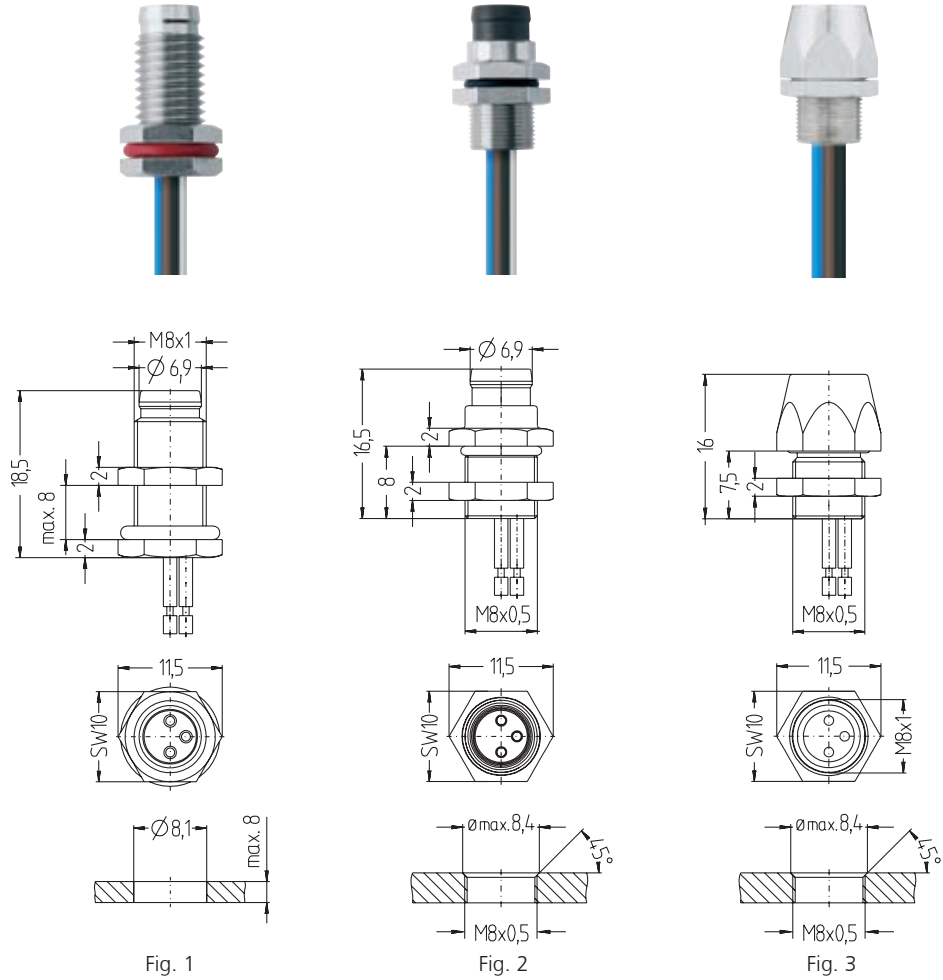
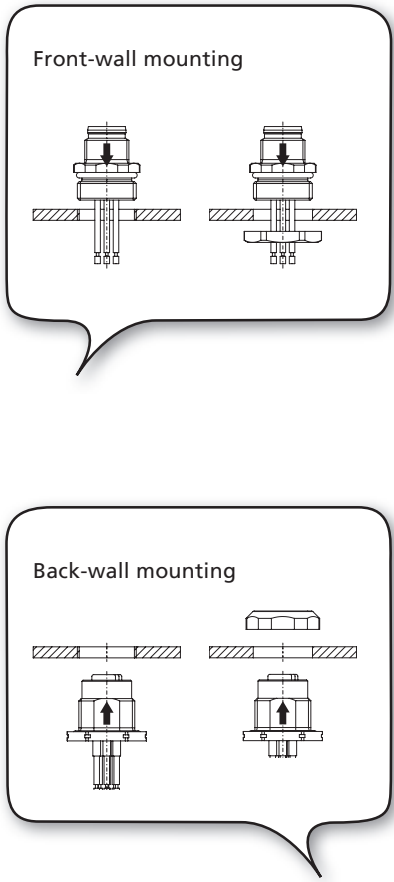
M8x1 field-wireable				
Technical data	Poles	Value		
		Screw-clamp	Cut-clamp	Soldering
Rated voltage [U _{max}]	3, 4	60V	32V	60V
Current load [I _{max}]	3, 4	4A	3A	4A
Insulation resistance		≥10 ⁸ Ω	≥10 ⁸ Ω	≥10 ⁸ Ω
Standards		IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-104
Materials	Grip	PBT/PA, BK	PBT/PA, 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					

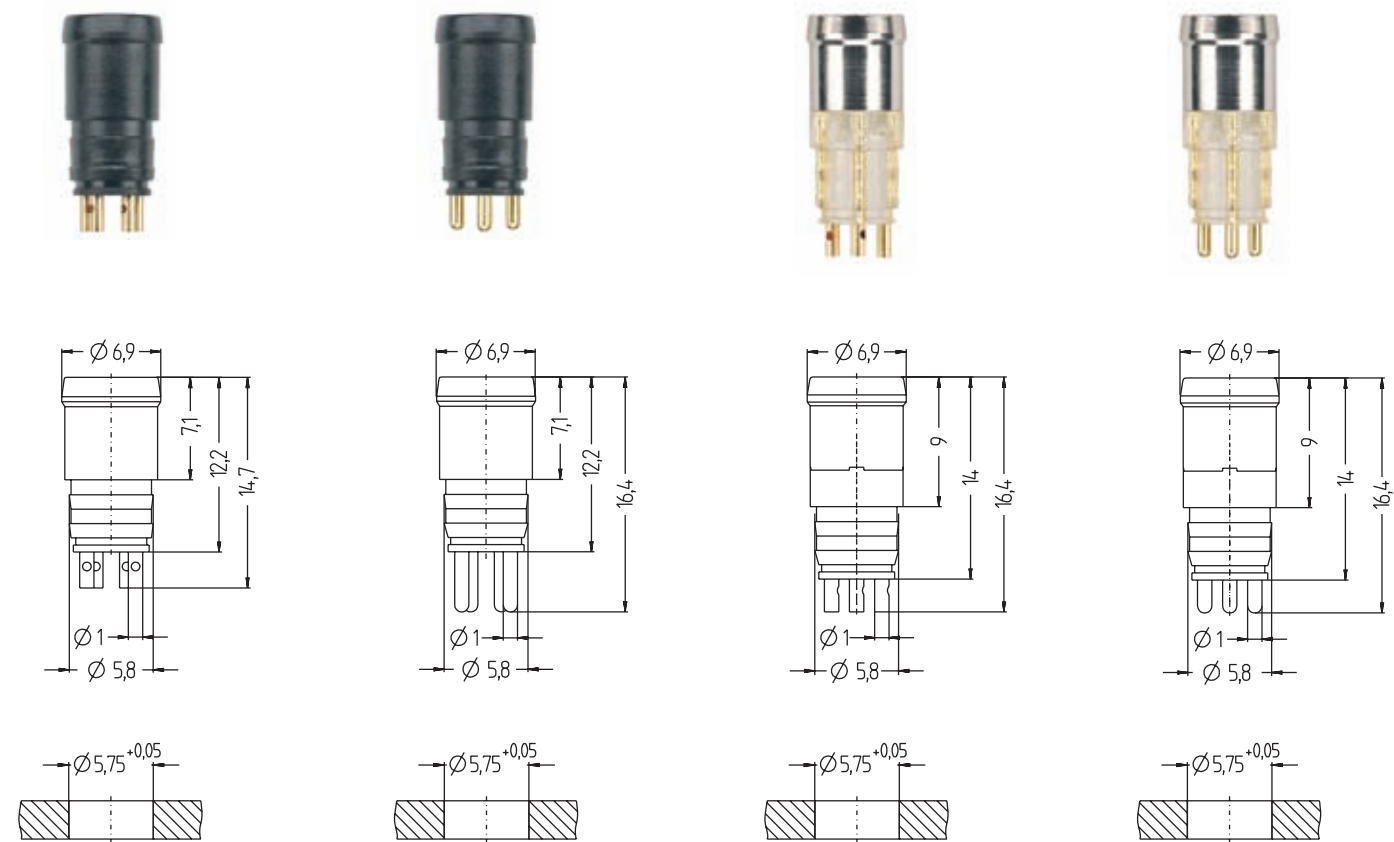
M8x1-Flanges	Version	Poles	Type-designation.	Order-No.
Front-wall mounting (optional threaded rear)	<i>f</i> ↑ CuZn	3	Fig. 3	PFKS3-0,2 8008169
		4		PFKS4-0,2 8008170
		5		PFKS4.5-0,2 8044266
	<i>m</i> ↑ CuZn	3	Fig. 2	PFS3-0,2 8008165
		4		PFS4-0,2 8008166
Back-wall mounting (threaded front)	<i>m</i>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

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



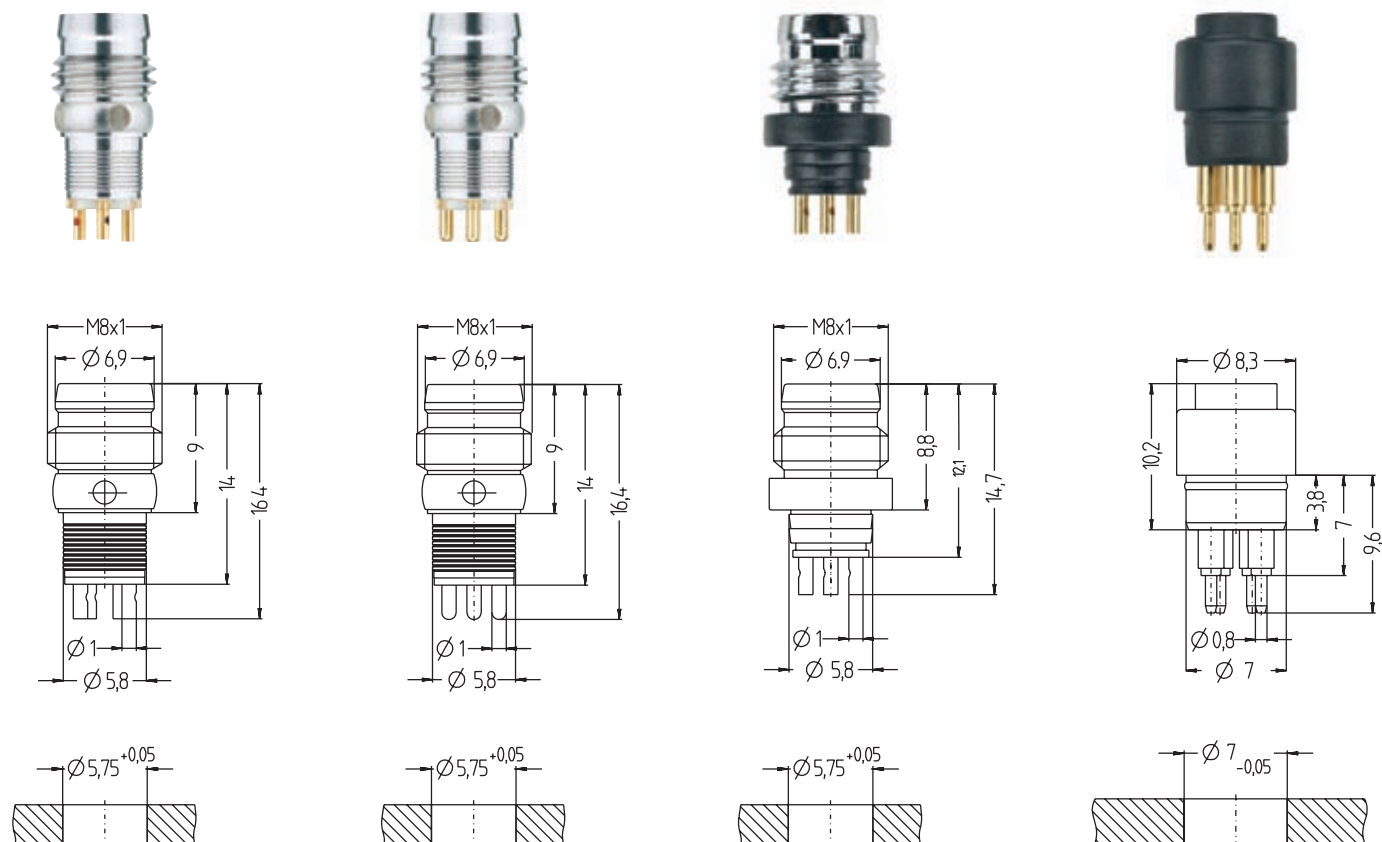
M8x1 Flanges		
Technical data	Poles	Value
Rated voltage [U _{max}]	3	60V
	4, 5	30V
Current load [I _{max}]	3, 4	4A
	5	3A
Insulation resistance		≥10 ⁸ Ω
Standards		IEC 61076-2-104
Materials	Contact carrier	PA, BK
	Sealing (<i>female</i>)	NBR
	Contacts	CuZn, gold-plated
	Locking mechanism	CuZn, nickel-plated
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	



ESP_soldering-contact		ESP_print-contact		ESHP_soldering-contact		ESHP_print-contact	
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.

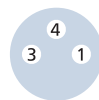


ESGP_soldering-contact ESGP_print-contact SESP_soldering-contact EKP_print-contact

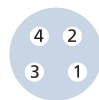
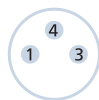
M8x1 Build-in connector

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

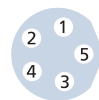
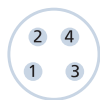
Pinning					
3 poles <i>female</i>	3 poles <i>male</i>	4 poles <i>female</i>	4 poles <i>male</i>	5 poles <i>female</i>	5 poles <i>male</i>



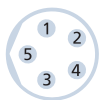
1BN | 3BU | 4BK



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

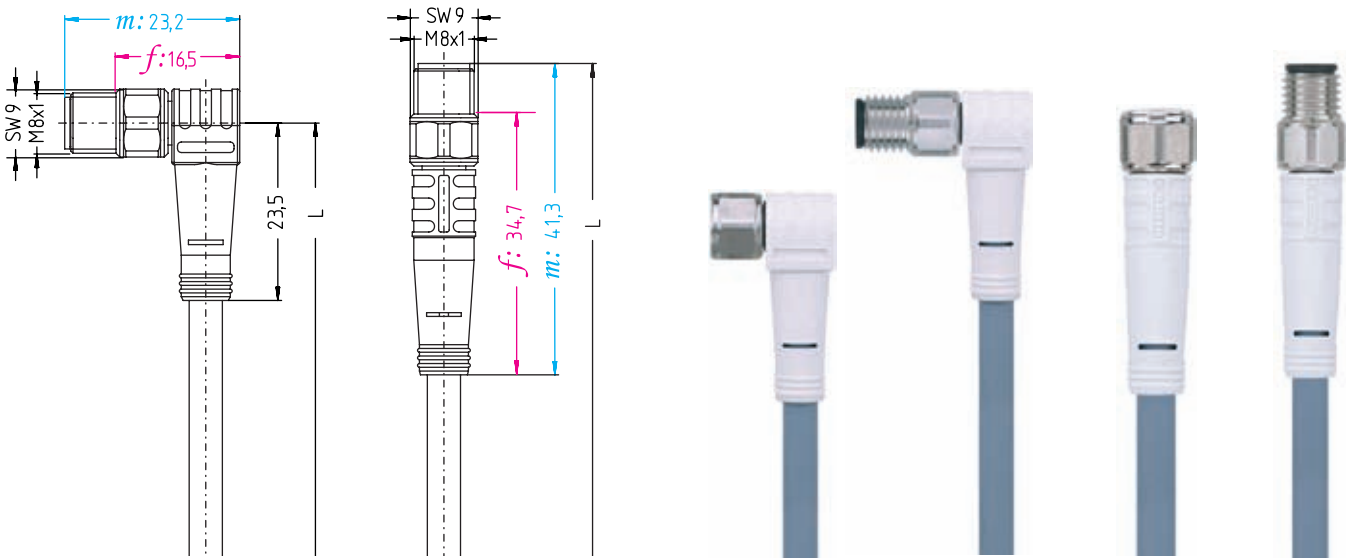
Food & Beverage

Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m	
						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	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



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

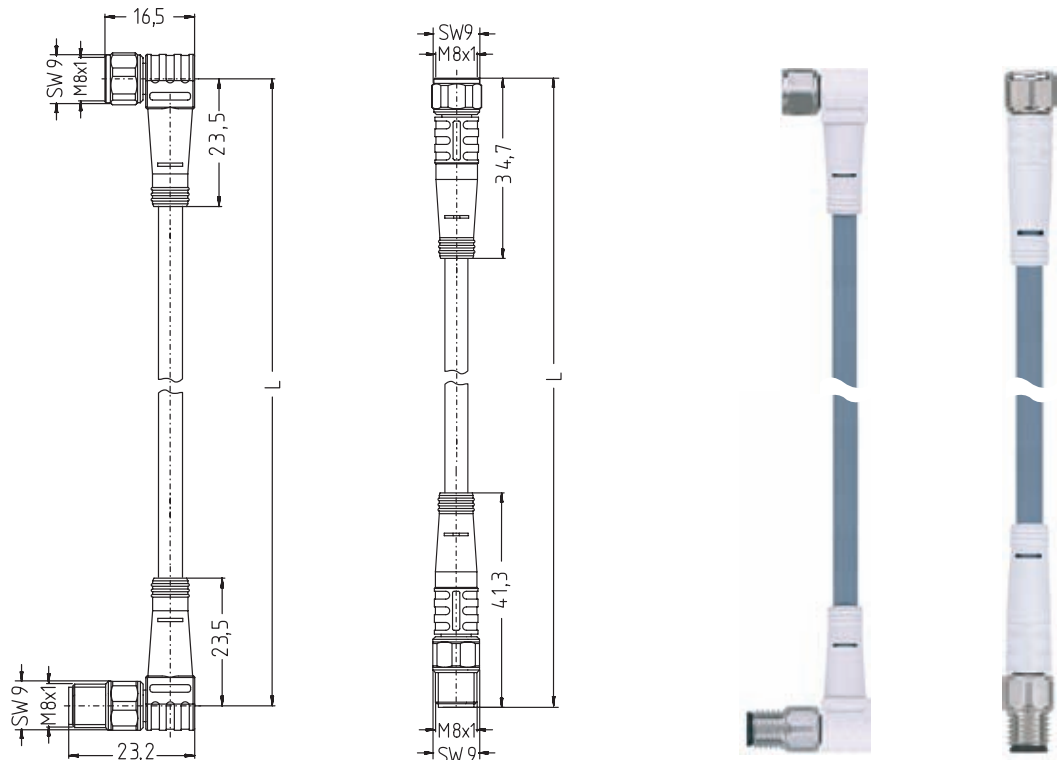


Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m10m
FB_M8x1	<i>f</i> ↑__ <i>m</i> ↑	PP S2300	3	FB-SKP3-m-FB-SSP3/S2300	8051993	80396968039697
			4	FB-SKP4-m-FB-SSP4/S2300	8051994	80396998039700
	<i>f</i> ↗__ <i>m</i> ↗	PP S2300	3	FB-SWKP3-m-FB-SWSP3/S2300	8051995	80397028039703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

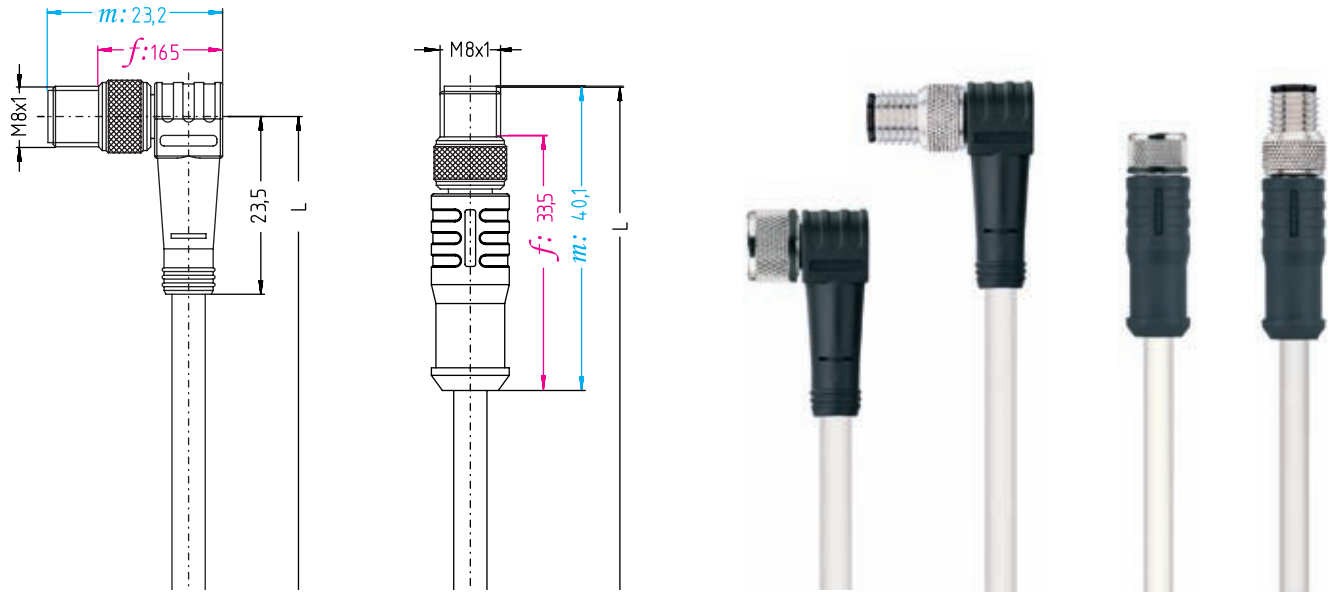


Product line	Version	Cable-quality	Poles	Type-designation	Cable length m		
					2m	5m	10m
HT_M8x1	f ↑	PTFE S2430	3	HT-SKP3-m/S2430	8036605	8036097	8039482
			4	HT-SKP4-m/S2430	8039483	8036098	8037215
	f ↗	PTFE S2430	3	HT-SWKP3-m/S2430	8039484	8036099	8039485
			4	HT-SWKP4-m/S2430	8039486	8036100	8037216
	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

1BN | 2WH | 3BU | 4BK

4

2

3

1

1BN | 2WH | 3BU | 4BK

2

4

1

3

1BN | 2WH | 3BU | 4BK

HT -	S	W	KP	3	m -	HT -	S	W	SP	3 /	S2430
											Cable quality
										Poles	
										Rundsteckverb. M8x1 SP: <i>male</i>	
										W: angled ↗ without: straight ↑	
										Screwable	
										High temperature-proof	
										Cable length [m]	
										Poles	
										Round connector M8x1 KP: K <i>female</i>	
										W: angled ↗ without: straight ↑	
										Screwable	
										High temperature-proof	

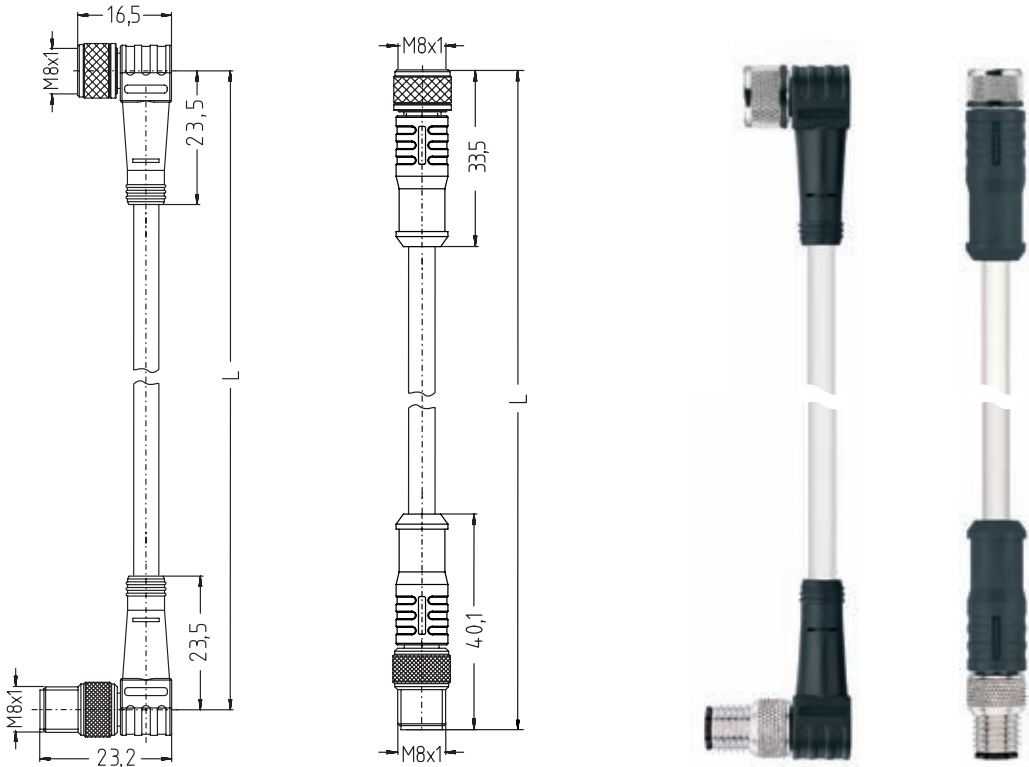


Product line	Version	Cable-quality	Poles	Type-designation	2m	Cable length m 5m10m
HT_M8x1	<i>f</i> ↑ <u> </u> <i>m</i> ↑	PTFE S2430	3	HT-SKP3-m-HT-SSP3/S2430	8043355	80399728039973
			4	HT-SKP4-m-HT-SSP4/S2430	8051990	80399758039976
HT_M8x1	<i>f</i> ↗ <u> </u> <i>m</i> ↗	PTFE S2430	3	HT-SWKP3-m-HT-SWSP3/S2430	8051991	80399788039979
			4	HT-SWKP4-m-HT-SWSP4/S2430	8051992	80399818039982

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.



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

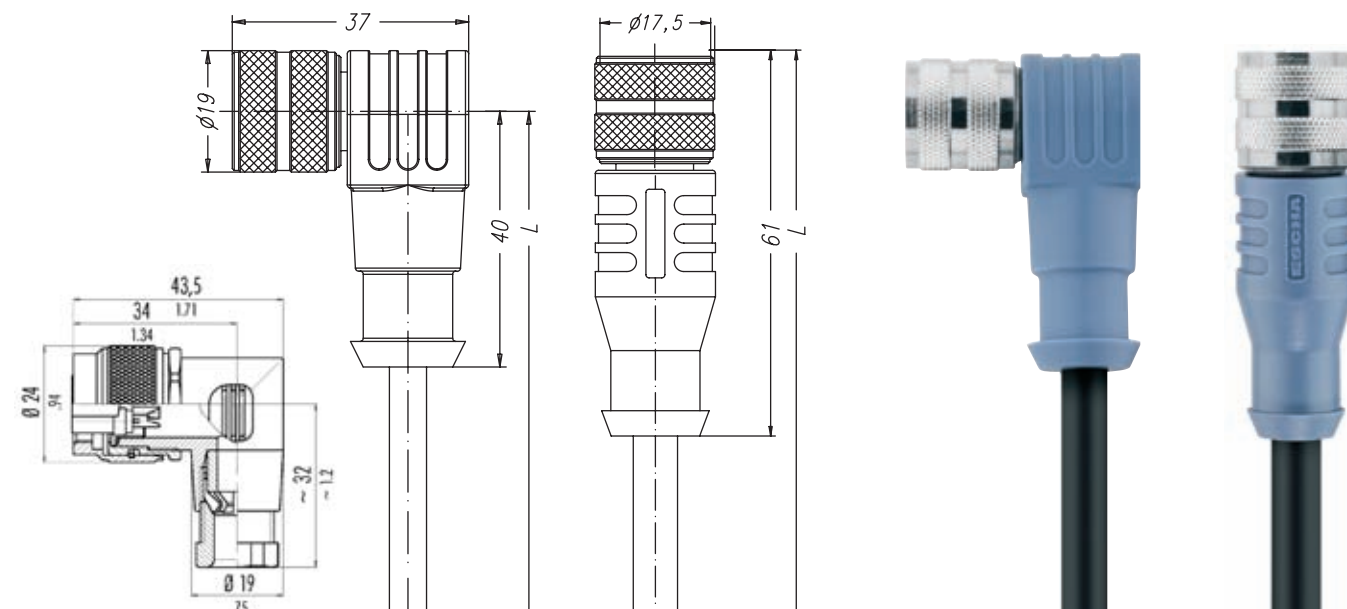
Pinning	3 poles <i>female</i>	3 poles <i>male</i>	4 poles <i>female</i>	4 poles <i>male</i>
	1BN 3BU 4BK		1BN 2WH 3BU 4BK	

W	MK	C	A	U	14	L	.001 -	3 /	S1117
									Cable quality
									Cable length [m]
									Allocation-code
									Soldering-contacts 
									Poles
									Molded
									Round connector M16x0.75
									Field-wireable 
									<i>female</i>
									W: angled  without: straight 



Product line	Version	Poles. allocation	Cable quality	Type-designation		2m	Cable length m 5m10m
M16x0.75	$f \mid \uparrow$	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
		19.001		MKAU19.001-m/S1118		8029814	80298758029876
	$f \mid \rightarrow$	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	
	14.003		WMKAU14.003-m/S1118		8026801	80272338027234	
	19.001		WMKAU19.001-m/S1118		8022167	80272378027238	
$f \mid \rightarrow \mid \text{Hand}$	14	Soldering-c.	WMKCA14L	8017607			

Other versions and cable-lengths are available upon request.



M 16x0.75 *female*

Technical data	Molded		Field-wireable 	
	Poles	Value	Poles	Value
Rated voltage [U _{max}]	14, 19	32V	14	60V
Current load [I _{max}]	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		0.5mm² A, L, M, U		0.25...0.5 mm²
		0.25mm² others		
External diameter of the cable				6...8mm

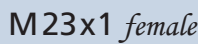
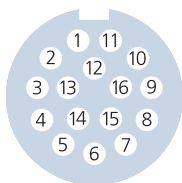
Pinning | female

Figure 1 displays three circular diagrams representing the distribution of 14 letters (G, E, R, P, O, C, N, M, U, J) across three groups: 14.001, 14.003, and 19.001. Each diagram shows a central circle with letters and an outer ring with letters. Below each diagram is a list of letter pairs.

- 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



Other versions and cable-lengths are available upon request.

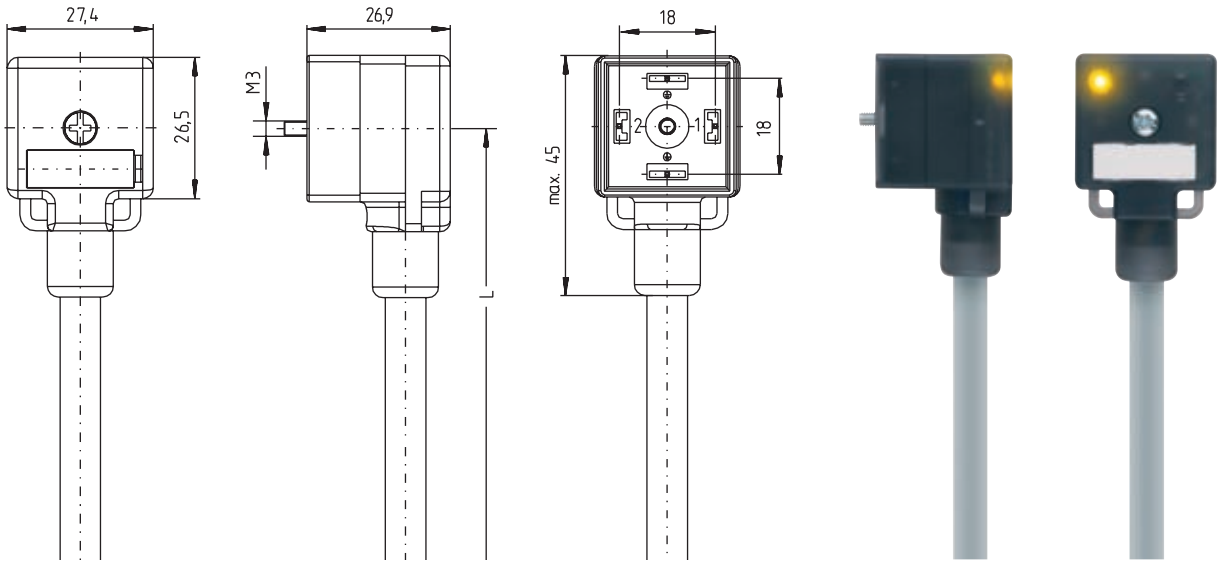
12 poles

.001 1:WH | 2:GN | 3:YE | 4:GY | 5, 6, 7, 8, 9: free
10:BU | 11:BN | 12:GN/YE

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°)						

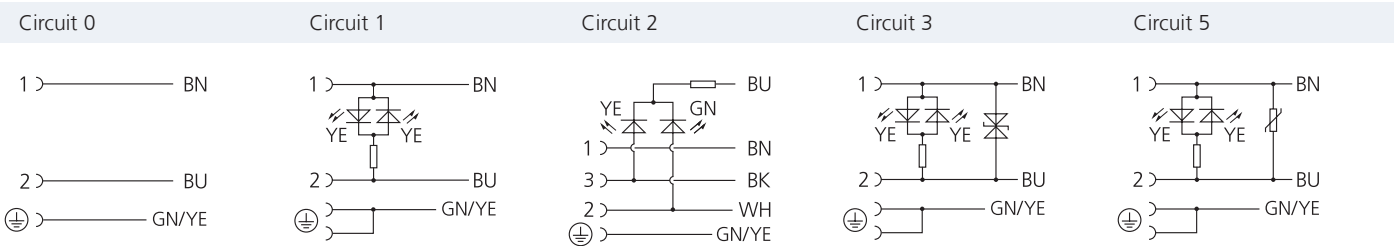
Type	Voltage	Circuit	Contacts	Cable quality	Type-designation	2m	Cable length m	
							5m	10m
A	24VAC/DC	1	2+PE jumpered	PUR S370 [®]	VA22-24.1-m/S370	8050501	8047803	8048240
		3	2+PE jumpered		VA22-24.3-m/S370	8050293	8047804	8048527
		2	3+PE Litze		VA41-24.2-m/S370	8050500	8047805	8049933
	230VAC/DC	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	

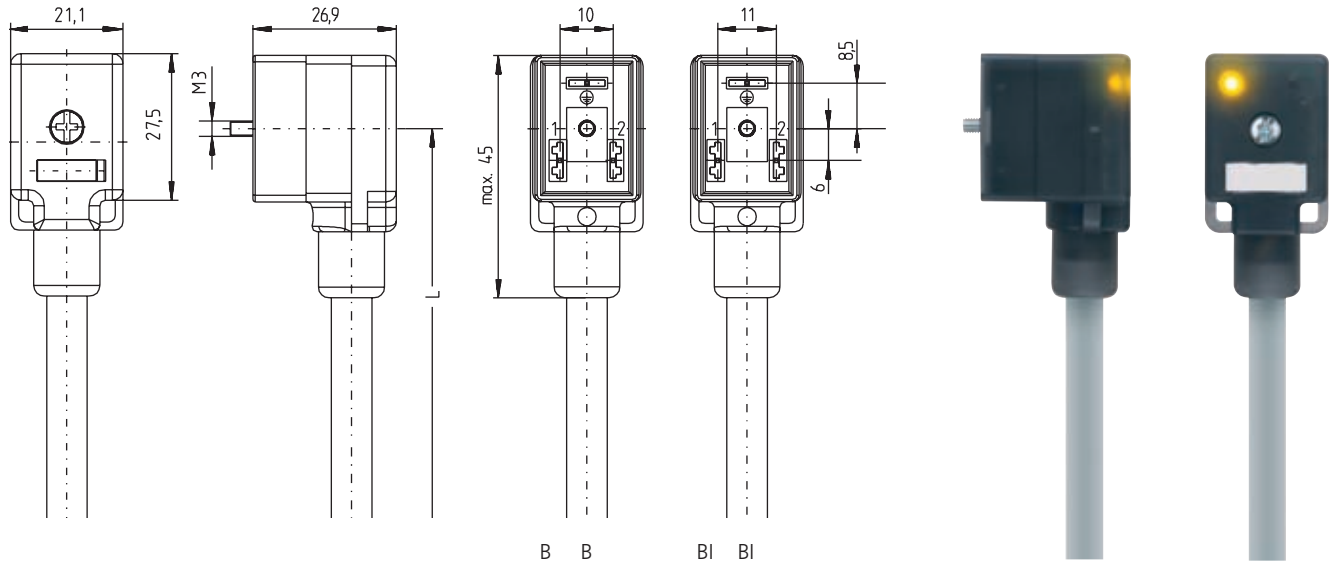


V	B	21-	24.	0-	m /	S370
						Cable quality
						Cable length [m]
						Protective circuit (0 1 3 5)
						Disposal of working voltage: 24Vdc 24VAC/DC 230VAC/DC
						21: 2 contacts+PE 22: 2 contacts+PE jumpered 31: 3 contacts+PE 41: 3 contacts+PE + Wire-connection (pressure switch)
						Type B/BI

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
		1	2+PE		VB21-24.1-m/P00	8050829	8049311	8050830
		3	2+PE		VB21-24.3-m/P00	8048844	8048845	8050832
	24VAC/DC	0	2+PE	PVC P01 [®]	VB21-230.0-m/P00	8048842	8048843	8050834
		1	2+PE		VB21-230.5-m/P00	8050835	8049312	8050836
		3	2+PE		VB21-24.1-m/P01	8050877	8047825	8050878
	230VAC/DC	0	2+PE		VB21-24.3-m/P01	8050879	8047826	8050880
		1	2+PE		VB21-230.0-m/P01	8050881	8047827	8050882
		3	2+PE		VB21-230.5-m/P01	8050883	8047828	8050884
BI	24VAC/DC	1	2+PE	PUR S370 [®]	VBI21-24.1-m/S370	8050764	8047811	8050539
		3	2+PE		VBI21-24.3-m/S370	8049884	8047812	8050765
		5	2+PE		VBI21-230.5-m/S370	8050766	8047813	8049931
	230VAC/DC	0	2+PE	PVC P00	VBI21-230.0-m/S370	8050767	8047814	8050768
		1	2+PE		VBI21-24.1-m/P00	8050838	8049313	8050538
		3	2+PE		VBI21-24.3-m/P00	8050855	8048820	8050856
	24VAC/DC	0	2+PE	PVC P01 [®]	VBI21-230.0-m/P00	8050857	8049314	8050858
		1	2+PE		VBI21-230.5-m/P00	8050859	8048821	8050860
		3	2+PE		VBI21-24.1-m/P01	8050899	8047829	8050900
	230VAC/DC	0	2+PE		VBI21-24.3-m/P01	8050901	8047830	8050902
		1	2+PE		VBI21-230.0-m/P01	8050904	8047831	8050905
		3	2+PE		VBI21-230.5-m/P01	8050906	8047832	8050907

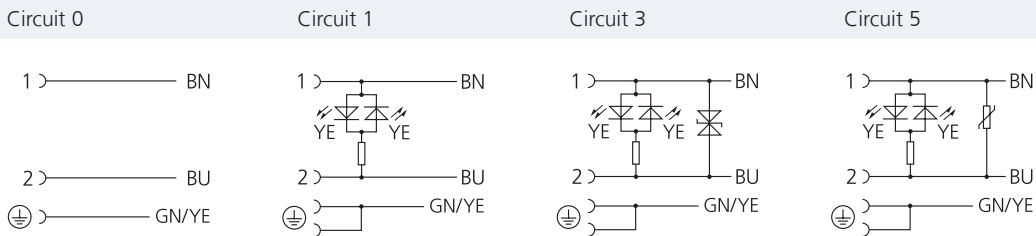
Other versions and cable-lengths are available upon request.



Valve connector type B | BI

Technical data

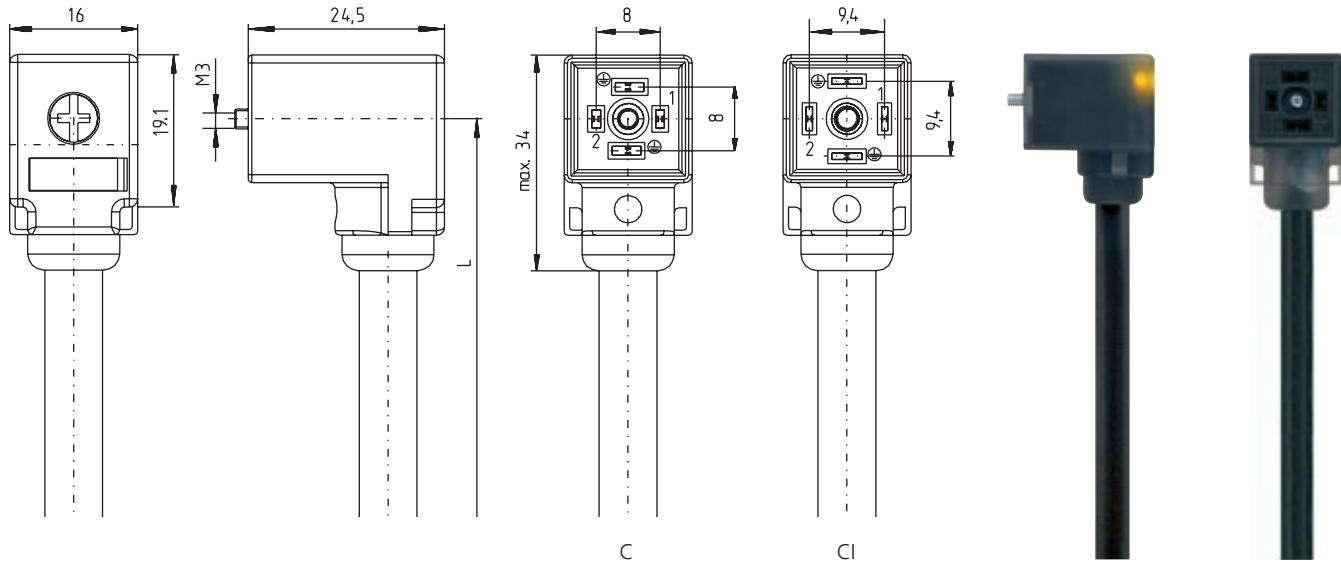
Current load [Imax]	4A
Standards	DIN EN 175301-803
Materials	Grip Contact carrier Sealing Contacts Fastening screw
	TPU, BK PA, BK TPU CuSn, silver-plated CuZn, nickel-plated
Ambient temperature	-30°C...+90°C
Degree of pollution	3
Protection class (installed)	IP67, IP69K
Mechanical life cycle	>100 mating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



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 41: 3 contacts+PE + Wire-connection (pressure switch)
						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		VC21-230.0-m/S370	8050772	8047817	8050773
	24VAC/DC	1	2+PE jumpered	PVC P00	VC22-24.1-m/P00	8050842	8049315	8050843
		4	2+PE jumpered		VC22-24.4-m/P00	8050844	8049316	8050845
	230VAC/DC	0	2+PE		VC21-230.0-m/P00	8050846	8049317	8050848
CI	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		VC21-230.0-m/P01	8050914	8047835	8050916
	24VAC/DC	1	2+PE jumpered	PVC P00	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		VC121-230.0-m/P00	8050853	8049320	8050854
	24VAC/DC	1	2+PE jumpered	PVC P01 [®]	VC122-24.1-m/P01	8050917	8047836	8050918
		4	2+PE jumpered		VC122-24.4-m/P01	8050919	8047837	8050920
	230VAC/DC	0	2+PE		VC121-230.0-m/P01	8050921	8047838	8050922

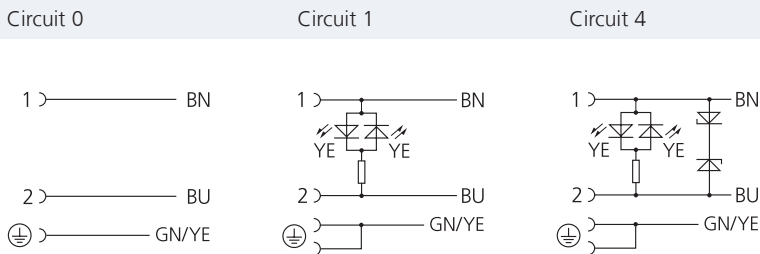
Other versions and cable-lengths are available upon request.



Valve connector type C | CI

Technical data

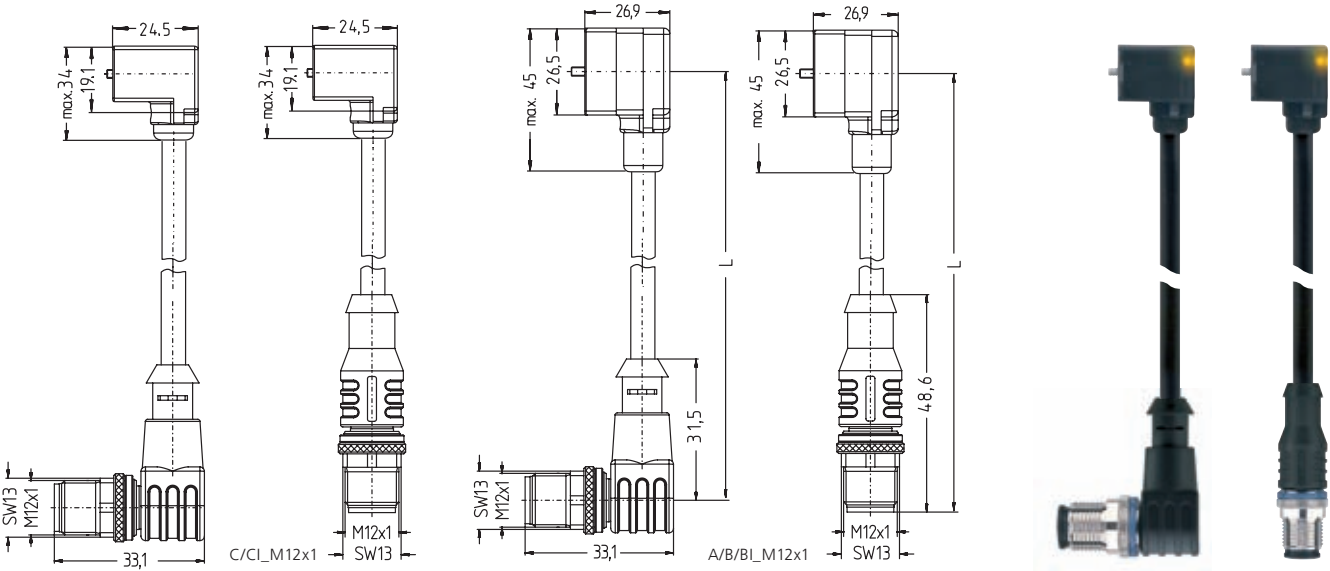
Current load [Imax]	4A
Standards	DIN EN 175301-803
Materials	Grip Contact carrier Sealing Contacts Fastening screw
	TPU, BK PA, BK TPU CuSn, silver-plated CuZn, nickel-plated
Ambient temperature	-30°C...+90°C
Degree of pollution	3
Protection class (installed)	IP67, IP69K
Mechanical life cycle	>100 mating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



V	A	21-	24.	0-	m -	AL -	W	WAS	5.002/	S370
										Cable quality
										Contacts.Allocation-code
										Round connector M12x1 WAS: <i>male</i>
										W: angled ↗ without: straight ↑
										Automation Line
										Cable length [m]
										Protective circuit (2 3 4)
										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)
										Type A B BI C CI
Valve connector										

Side A	Side B			Cable-quality		Type-designation		Cable length m		
								2m	5m	10m
U _B contacts protective cir.										
A	24V _{AC/DC} 2+PE jumpered 3	AL_M12x1	<i>m</i> ↑	PUR S370 [®]	VA22-24.3-m-AL-WAS5.002/S370	8052049	8050782	8050783		
			<i>m</i> ↗			VA22-24.3-m-AL-WWAS5.002/S370	8052050	8050780	8050186	
	24V _{AC/DC} 3+PE wire 2	AL_M12x1	<i>m</i> ↑		VA41-24.2-m-AL-WAS5/S370	8052051	8050785	8050786		
			<i>m</i> ↗			VA41-24.2-m-AL-WWAS5/S370	8052052	8050788	8050188	
	24V _{AC/DC} 2+PE jumpered 3	AL_M12x1	<i>m</i> ↑	PVC P00	VA22-24.3-m-AL-WAS5.002/P00	8052209	8052225	8052226		
			<i>m</i> ↗			VA22-24.3-m-AL-WWAS5.002/P00	8052227	8052228	8052229	
	24V _{AC/DC} 3+PE wire 2	AL_M12x1	<i>m</i> ↑		VA41-24.2-m-AL-WAS5/P00	8052230	8052231	8052232		
			<i>m</i> ↗			VA41-24.2-m-AL-WWAS5/P00	8052233	8052234	8052235	
	24V _{AC/DC} 2+PE jumpered 3	AL_M12x1	<i>m</i> ↑	PVC P01 [®]	VA22-24.3-m-AL-WAS5.002/P01	8052260	8052261	8052262		
			<i>m</i> ↗			VA22-24.3-m-AL-WWAS5.002/P01	8052263	8052264	8052265	
	24V _{AC/DC} 3+PE wire 2	AL_M12x1	<i>m</i> ↑		VA41-24.2-m-AL-WAS5/P01	8052266	8052267	8052268		
			<i>m</i> ↗			VA41-24.2-m-AL-WWAS5/P01	8052269	8052270	8052271	
B	24V _{AC/DC} 2+PE 3	AL_M12x1	<i>m</i> ↑	PUR S370 [®]	VB21-24.3-m-AL-WAS5.002/S370	8052053	8050790	8050791		
			<i>m</i> ↗			VB21-24.3-m-AL-WWAS5.002/S370	8052054	8050797	8050189	
			<i>m</i> ↑	PVC P00	VB21-24.3-m-AL-WAS5.002/P00	8052236	8052237	8052238		
			<i>m</i> ↗			VB21-24.3-m-AL-WWAS5.002/P00	8052239	8052240	8052241	
			<i>m</i> ↑	PVC P01 [®]	VB21-24.3-m-AL-WAS5.002/P01	8052272	8052273	8052274		
			<i>m</i> ↗			VB21-24.3-m-AL-WWAS5.002/P01	8052275	8052276	8052277	
BI	24V _{AC/DC} 2+PE 3	AL_M12x1	<i>m</i> ↑	PUR S370 [®]	VBI21-24.3-m-AL-WAS5.002/S370	8049278	8050800	8050801		
			<i>m</i> ↗			VBI21-24.3-m-AL-WWAS5.002/S370	8049279	8050804	8050805	
			<i>m</i> ↑	PVC P00	VBI21-24.3-m-AL-WAS5.002/P00	8052242	8052243	8052244		
			<i>m</i> ↗			VBI21-24.3-m-AL-WWAS5.002/P00	8052245	8052246	8052247	
			<i>m</i> ↑	PVC P01 [®]	VBI21-24.3-m-AL-WAS5.002/P01	8052278	8052279	8052280		
			<i>m</i> ↗			VBI21-24.3-m-AL-WWAS5.002/P01	8052281	8052282	8052283	
C	24V _{AC/DC} 2+PE jumpered 4	AL_M12x1	<i>m</i> ↑	PUR S370 [®]	VC22-24.4-m-AL-WAS5.002/S370	8052055	8050807	8050190		
			<i>m</i> ↗			VC22-24.4-m-AL-WWAS5.002/S370	8052056	8050813	8050191	
			<i>m</i> ↑	PVC P00	VC22-24.4-m-AL-WAS5.002/P00	8052248	8052249	8052250		
			<i>m</i> ↗			VC22-24.4-m-AL-WWAS5.002/P00	8052251	8052252	8052253	
			<i>m</i> ↑	PVC P01 [®]	VC22-24.4-m-AL-WAS5.002/P01	8052284	8052285	8052286		
			<i>m</i> ↗			VC22-24.4-m-AL-WWAS5.002/P01	8052287	8052288	8052289	
CI	24V _{AC/DC} 2+PE jumpered 4	AL_M12x1	<i>m</i> ↑	PUR S370 [®]	VCI22-24.4-m-AL-WAS5.002/S370	8052057	8050810	8050192		
			<i>m</i> ↗			VCI22-24.4-m-AL-WWAS5.002/S370	8052058	8050816	8050193	
			<i>m</i> ↑	PVC P00	VCI22-24.4-m-AL-WAS5.002/P00	8052254	8052255	8052256		
			<i>m</i> ↗			VCI22-24.4-m-AL-WWAS5.002/P00	8052257	8052258	8052259	
			<i>m</i> ↑	PVC P01 [®]	VCI22-24.4-m-AL-WAS5.002/P01	8052290	8052291	8052292		
			<i>m</i> ↗			VCI22-24.4-m-AL-WWAS5.002/P01	8052293	8052294	8052296	

Other versions and cable-lengths are available upon request.



Valve connector | M12x1 junction cable

Technical data	Valve connector	Round connector M12x1
Current load [I _{max}]	4A	4A
Insulation resistance	≥ 10 ⁸ Ω	≥ 10 ⁸ Ω
Standards	DIN EN 175301-803	IEC 61076-2-101
Materials	Grip: TPU, BK Contact carrier: PA, BK Sealing: TPU Contacts: CuSn, silver-plated Fastening screw: CuZn, nickel-plated	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	-30°C...+90°C
Degree of pollution	3	3
Protection class (installed)	IP 67, IP 69K	IP 67, IP 69K
Mechanical life cycle	>100 mating cycles	>100 mating cycles

Pinning Valve connector			Pinning M12x1 <i>male</i>	
A	B/BI	C/CI	5	5.002
			1BN 2WH 3BU 4BK 5GNYE	3BU 4BN 5GNYE

Circuit		
2	3	4

MB –

SSP

4 –

2

SKP

3

P3/

S00

Different locking nut to marking an output

PNP | Quantity LEDs + circuit

Poles

M8x1 screwable | female

2-way junction

Poles

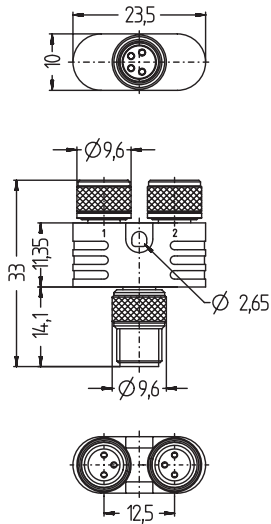
M8x1 screwable | male

Junction type MB



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/S38	8052222
MB_M8x1 LED	<i>m</i> 4	<i>f</i> 3	<i>f</i> 3	MB-SSP4-2SKP3P3/S38	8052223

Other versions are available upon request.



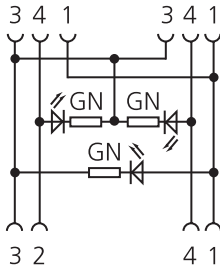
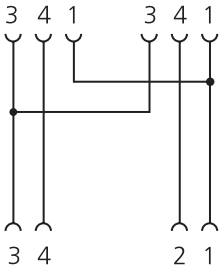
2-way junction | Type MB_M8x1

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	4/3 poles LED



MB – FSM 5 – 2 FKM 5 P3/ S00

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*

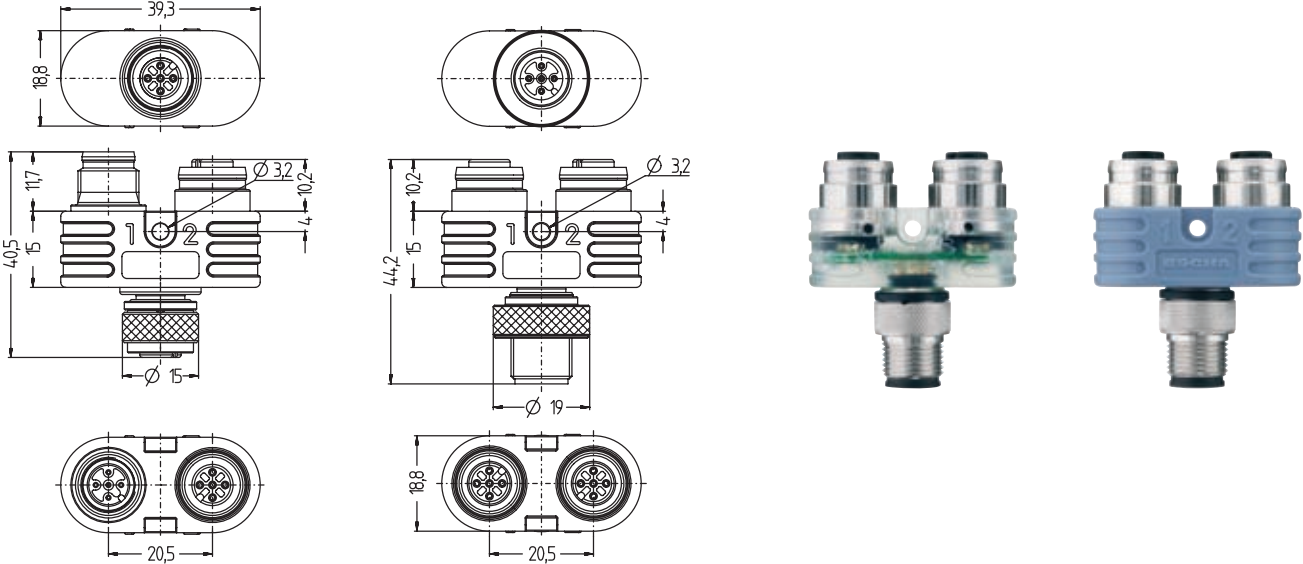
Junctions type MB



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.



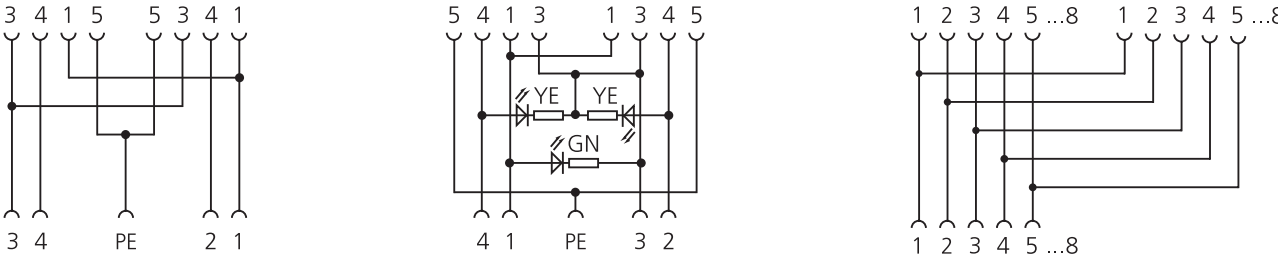
2-way junction | Type MB_M12x1

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



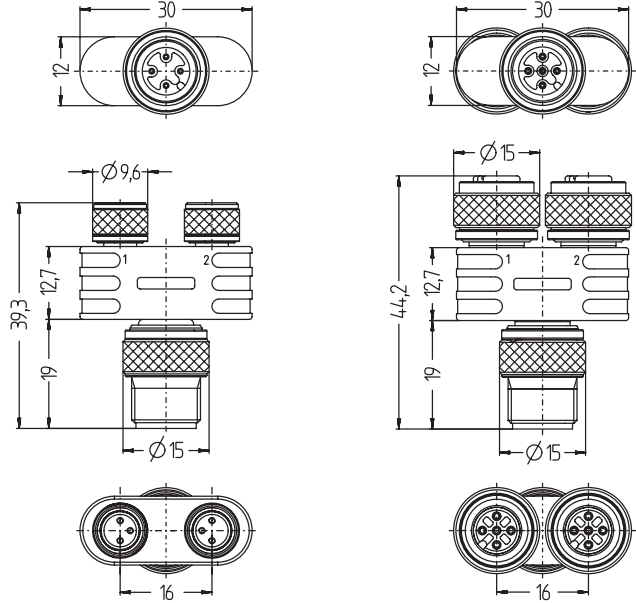
Wiring	4 poles+PE/4 poles LED	4poles+PE/4 poles+PE 8/8 poles
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FSM	5 -	2	FKM	5.4	S55
M12x1 FSM: <i>male</i>	Poles	2-way junction	M12x1 FKM: <i>female</i>	Poles + wiring	2-way junction
			M8x1 SKP: <i>female</i>		

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/S38	8052224

Other versions are available upon request.



2-way junction | Type S55

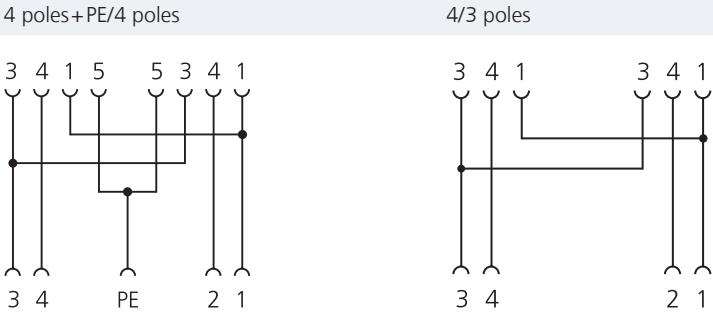
Technical data

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

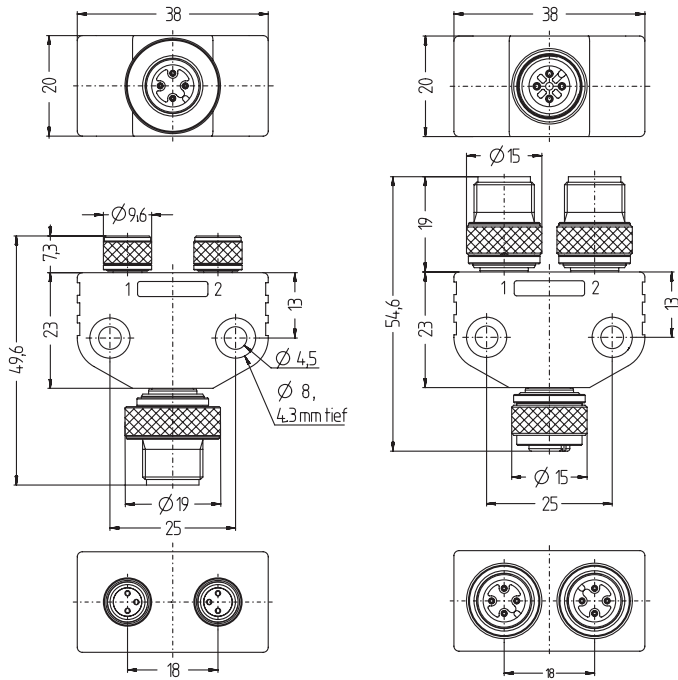


FSM	4-	2	FKM	3	P3/	S89
						2-way junction type S89
					PNP Quantity LEDs + wiring	
				Poles		
			M12x1	FSM: <i>male</i>		
				FKM: <i>female</i>		
			M8x1	SKP: <i>female</i>		
			2-way junction			
	Poles					
M12x1	FSM: <i>male</i>					
	FKM: <i>female</i>					



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
	M12x1 <i>m</i> 4	M8x1 <i>f</i> 3	M8x1 <i>f</i> 3	FSM4-2SKP3/S89	8013058
S89 LED	M12x1 <i>m</i> 4	M12x1 <i>f</i> 3	M12x1 <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		

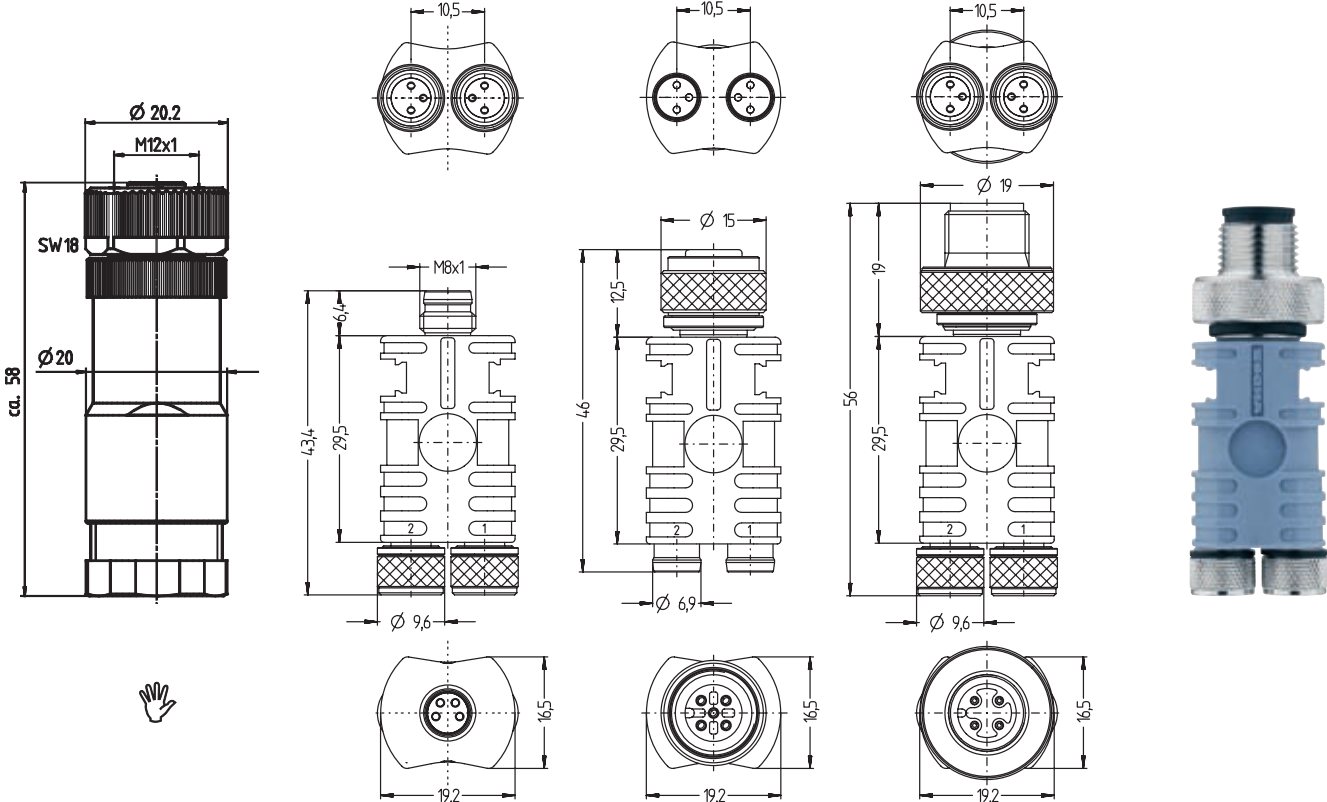
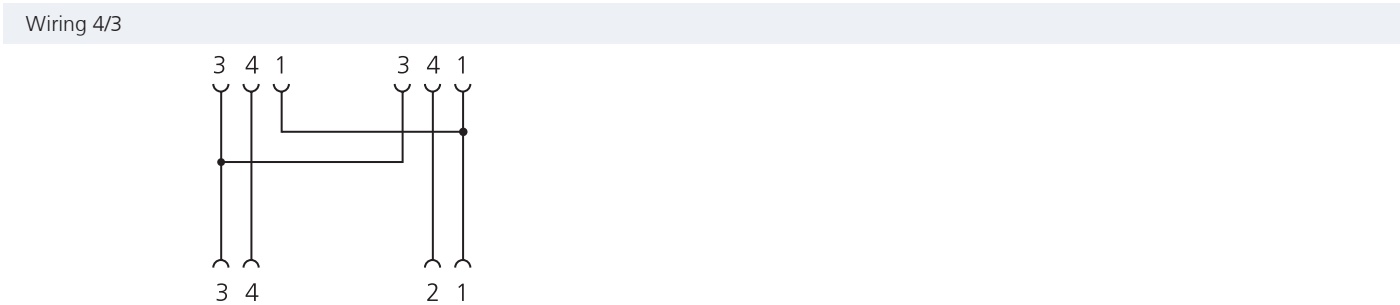


Wiring	4 poles+PE/4 poles	4/3 poles LED
4/3 poles		

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.

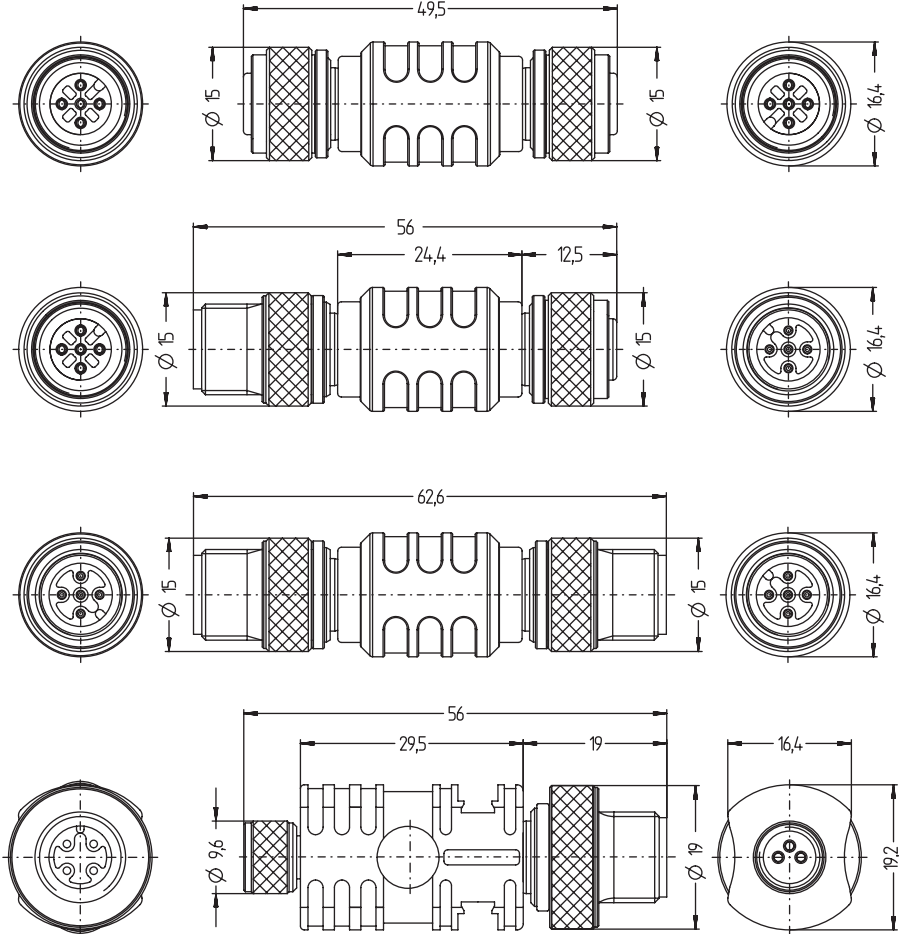


Y-splitter						
Technical data		Molded		Field-wireable 		
		Poles	Value	Poles	Value	
Rated voltage [U _{max}]		M12x1 M8x1	60V	4	125V	
		Ø8 snap M8x1	30V	5	125V	
Current load [I _{max}]		all	4A	4, 5	4A	
Insulation resistance			≥10 ⁸ Ω		≥10 ⁸ Ω	
Standards			IEC 61076-2-101/-104		IEC 61076-2-101	
Materials		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	

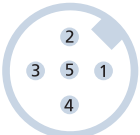
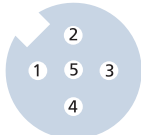


WAK	4.5 –	WAK	4.5
			Poles
		M12x1	WAK: <i>female</i>
			WAS: <i>male</i>
		M8x1	SKP: <i>female</i>
			Poles
M12x1	WAK: <i>female</i>		
	WAS: <i>male</i>		
	FSM: <i>male</i>		

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 [U _{max}]		M12x1 M8x1	60V		
		Ø8 snap M8x1	30V		
Current load [I _{max}]		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)			IP67		
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

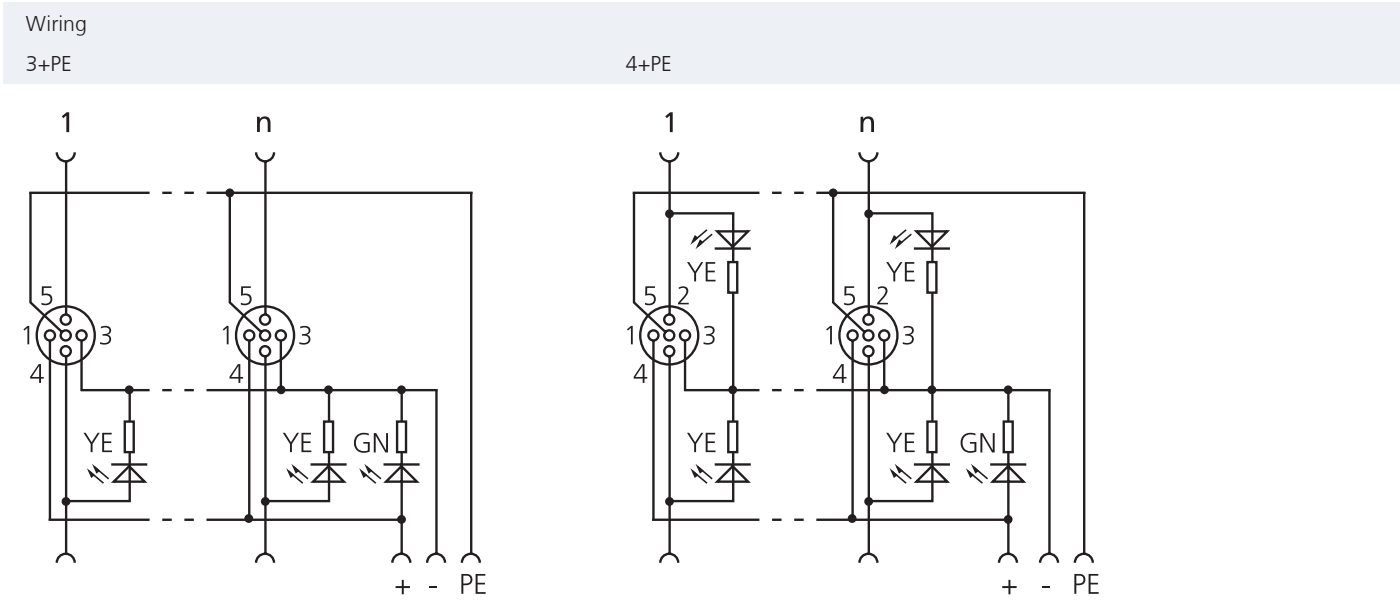


8	I/O	M12-	5.4	P2	T	m/	S370
							Cable quality
							Cable length [m]
							Connection M23x1 T: top, F: front, C: Cable
							PNP Quantity LEDs + circuit
							Contacts.allocation code
							I/O port M12x1
							I/O-junction box
							Quantity of I/O-ports



Product line	Quant. I/O	Poles I/O Coding	LED-display U _b 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 151

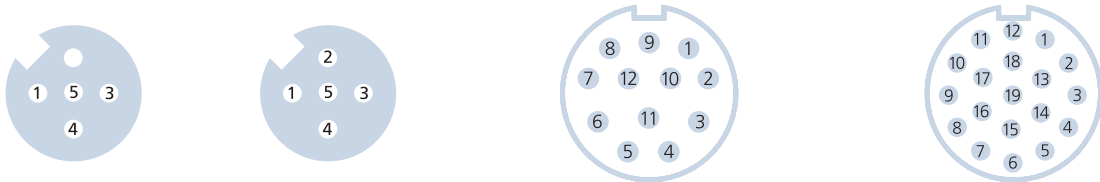
I/O-junction boxes M12x1

Technical data

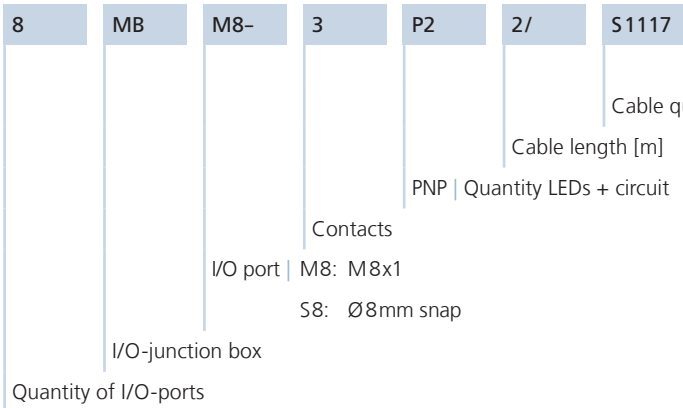
Rated voltage [U _{max}]	10... 30V		
Current load [I _{max}]	2A per signal contact 9A total current		
Switching function	PNP		
Insulation resistance	≥10 ⁸ Ω		
Standards	IEC 61076-2-101		
Materials	Housing		
	M12x1 M23x1	Thread insert Flange housing	
		Contact carrier	
		Contacts	
		Sealing	
Ambient temperature	-30°C...+90°C		
Degree of pollution	3		
Protection class	IP67 (in threaded condition)		
Mechanical life cycle	>100 mating cycles		
Accessories	safty-stopper (2 pieces 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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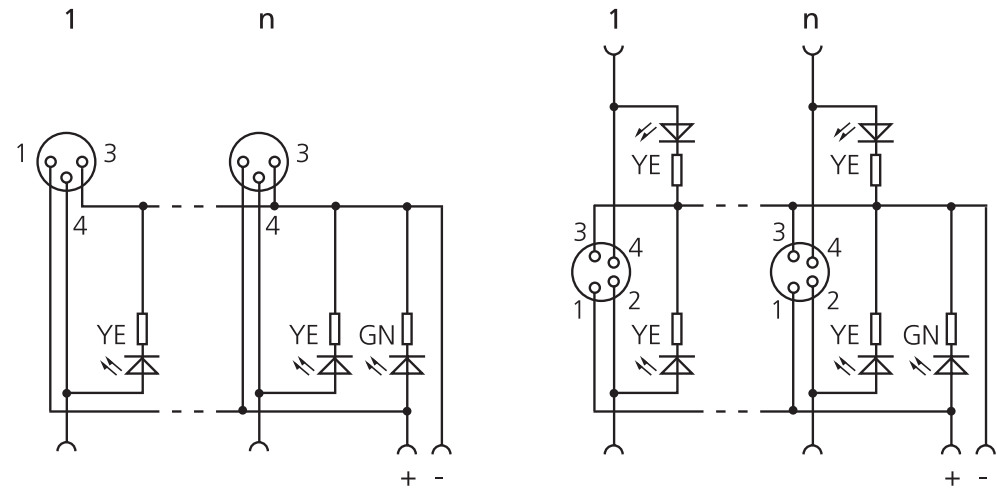
I/O_M12x1	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	all	all	all
M12_contacts	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	1	3	5
M23_12 poles	-	1	-	2	-	3	-	4	-	5	-	6	-	7	-	8	11	9+10	12
M23_19-poles	7	15	4	5	8	16	14	3	9	17	13	2	10	11	18	1	19	6	12
Wire-colours	GY/PK	WH	RD/BU	GN	WH/GN	YE	BN/GN	GY	WH/YE	PK	YE/BN	RD	WH/GY	BK	GY/BN	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
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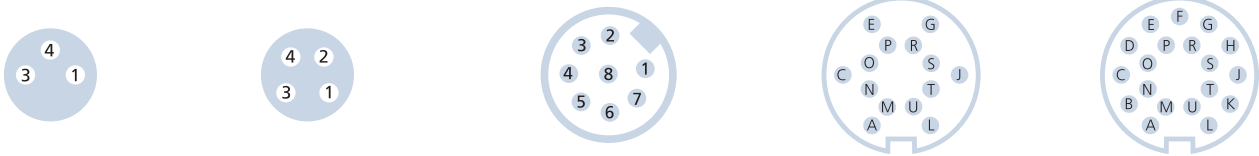
Dimensional drawings see page150

I/O-junction boxes M8x1

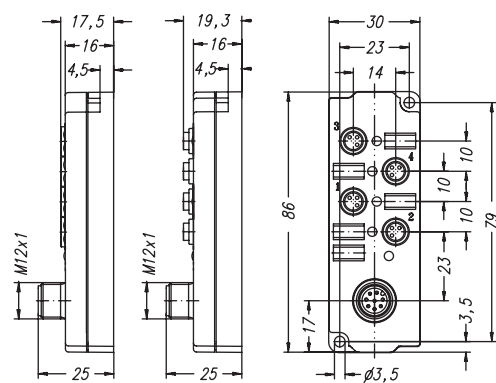
Technical data

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	safty-stopper (2pieces included in scope of supply) (page 152)		
	For labels see accessories on page154.		
	M12x1 M16x0,75 connecting cable		

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

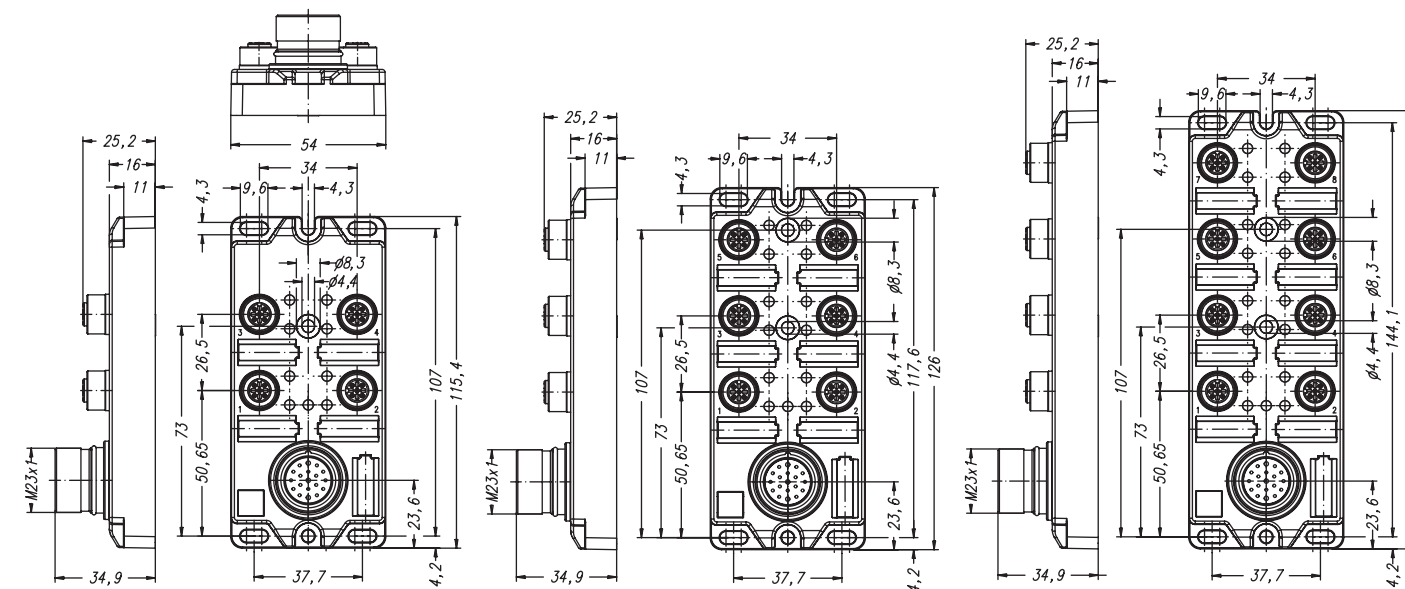
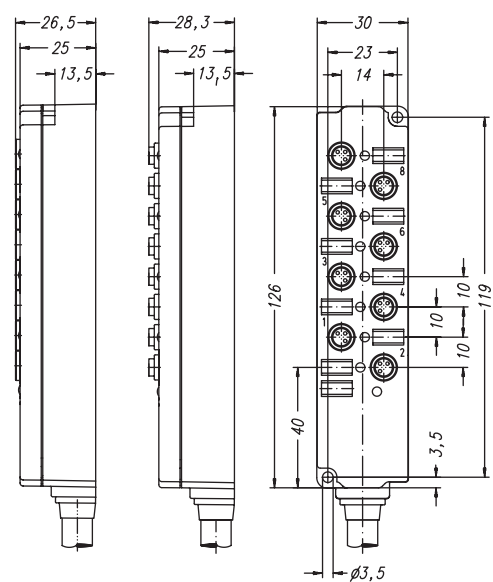
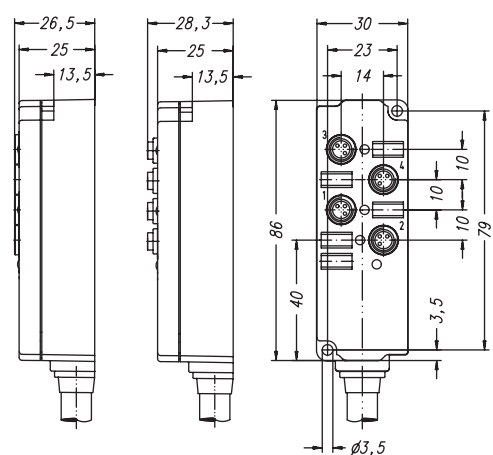
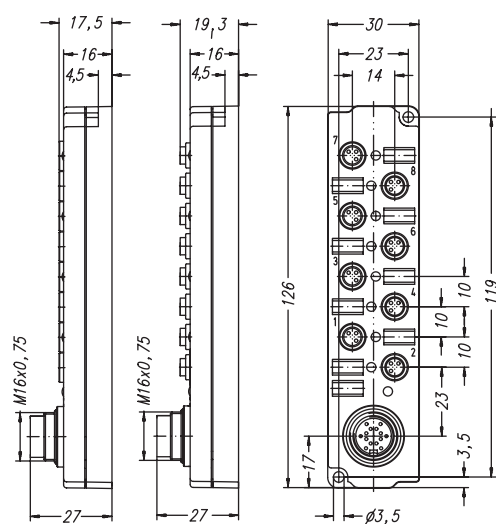
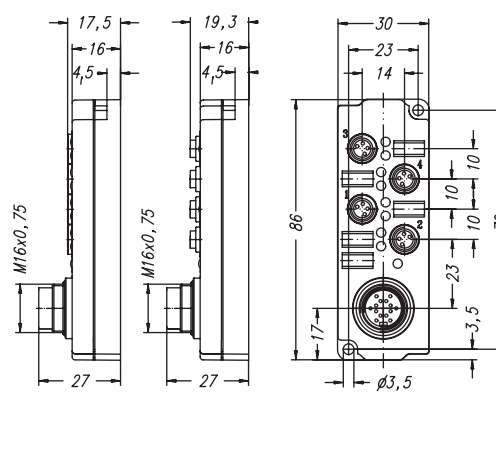


I/O_M8x1/Ø8 snap	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	all	all
M8x1/Ø8 snap_contacts	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	1	3
M12_8 poles	1	-	2	-	3	-	4	-	-	-	-	-	-	-	-	-	5	7
M16_14 poles	P	-	J	-	T	-	S	-	G	-	R	-	E	-	O	-	A/M	L/U
M16_19-poles	R	E	C	G	N	P	O	J	F	B	D	K	H	A	S	L	M	U
Wire-colours	WH	GY/PK	GN	RD/BU	YE	WH/GN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

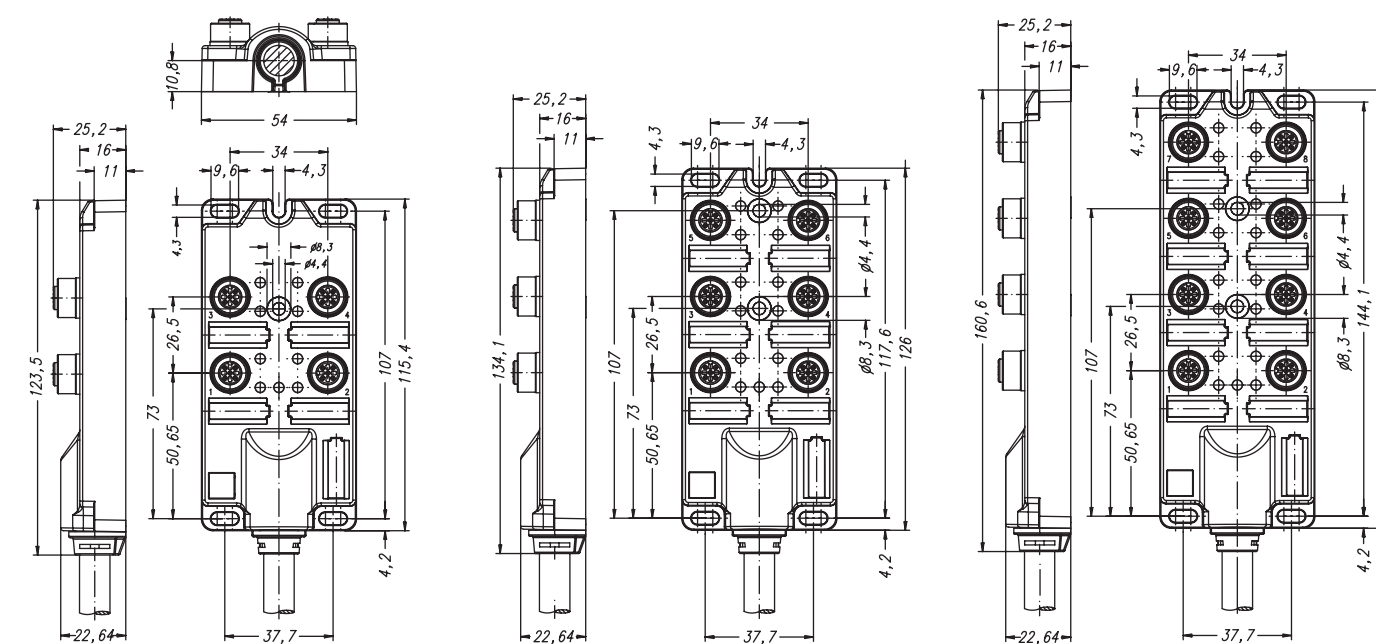
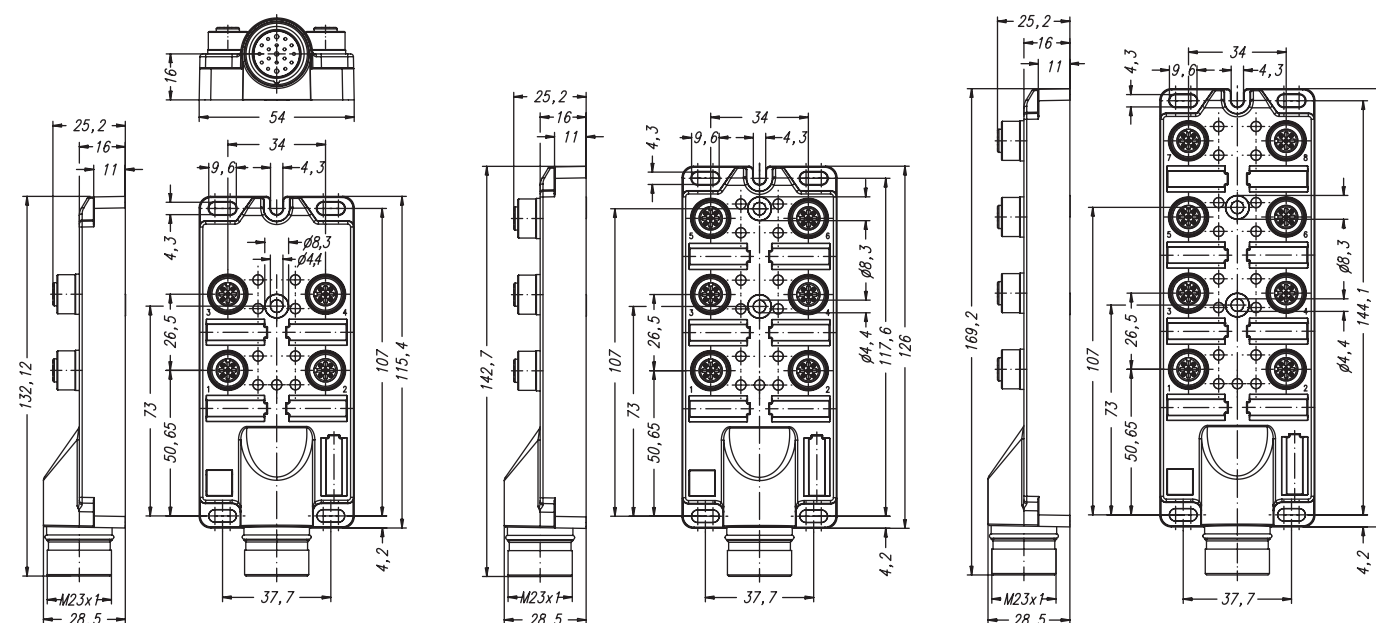


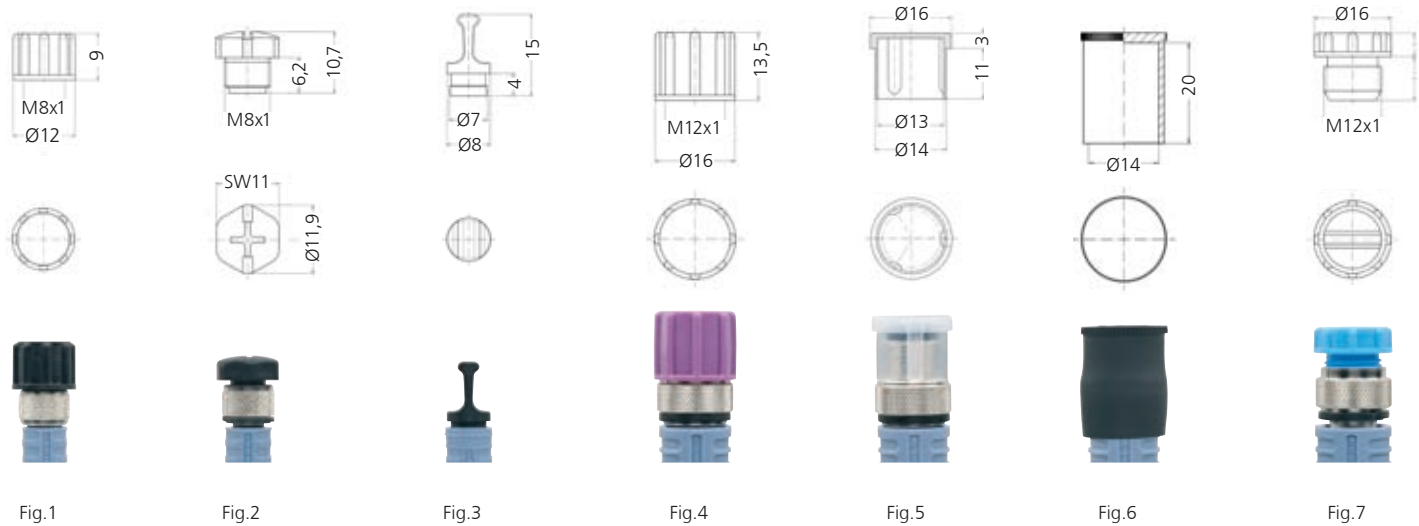
I/O-junction boxes M8x1

▲▼ M8x1 ▲▼ Ø8mm snap

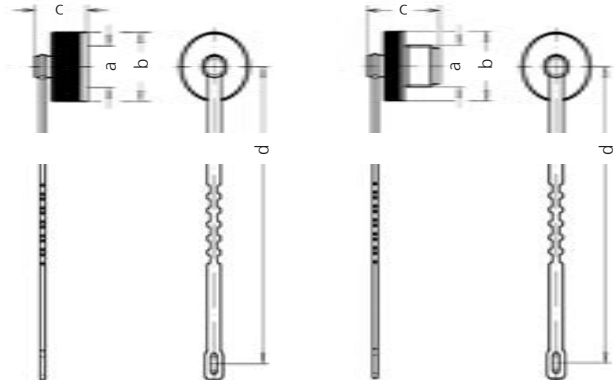


I/O-junction boxes M 12x1



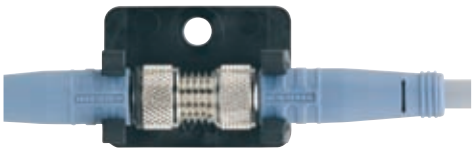


Product line	for	Protection class	colour (according to RAL)	Fig.	Order-No.
Safty-stopper	M8x1 <i>f</i>	IP67	BK RAL9005	2	8015075
	Ø8 snap <i>f</i>	IP67	BK RAL9005	3	8036742
	M12x1 <i>f</i>	IP67	BK RAL9005	7	8000004
		IP67	VT RAL4001	7	8041992
		IP67	BU RAL5012	7	8041993
Safty-cap	M8x1 <i>m</i>	IP67	BK 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	M8x1 <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	M8x1 <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

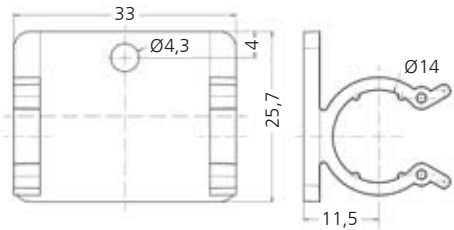
Mounting-clip for M8x1 Round connector



POM BK

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

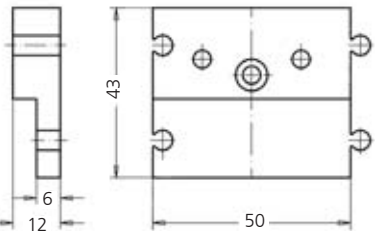
Mounting-clip for M12x1 Round connector



POM BK

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

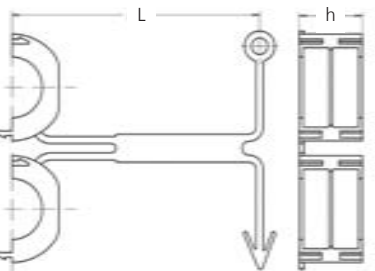
Mounting-set for S89 2-way junction



PA BK

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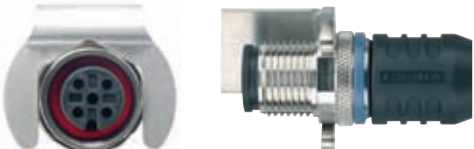
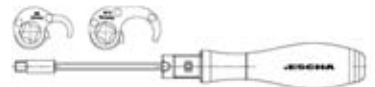
Safty-clip M8x1 | M12x1 Against accidental disconnection under pressure



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	Adjustment range [Nm]	Set	Order-No.
M8x1 M12x1 (knurl)	0.5 - 1.7	Body + insert M8x1 + insert M12x1	8031651
M8x1 M12x1 (hexagon)	0.4 - 1.0	Body + insert M8x1 + insert M12x1	8052082

Labels
for passive junctions
and valve connectors



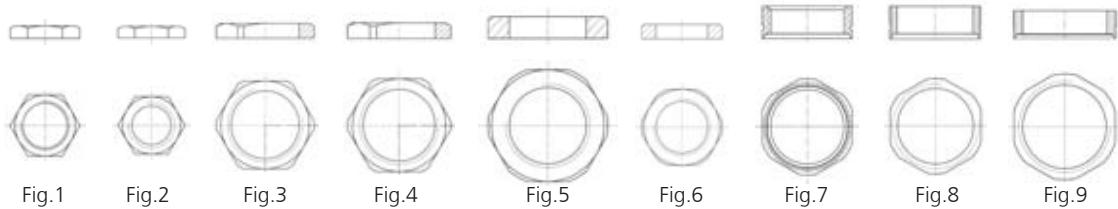
Label for	Type	a [mm]	b [mm]	c [mm]	d [mm]	Order-No.
I/O-junction box	M8x1	5.0	10.0	1.0	2.5	8011349
	M12x1	9.0	20.0	0.8	2.6	8015002
Valve connector	A	7.0	20.0	1.0	–	8047110
	B/BI,C/CI	4.0	11.0	1.0	–	8047109

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

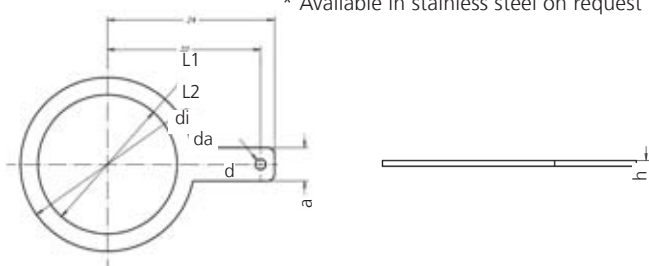
Spare nuts
for flanges
CuZn nickel-plated



Thread	Fig.	for Flange	Materials	SW	h [mm]	Order-No.
M8x0,5	1	M8x1 PFK5, 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 F5F	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.

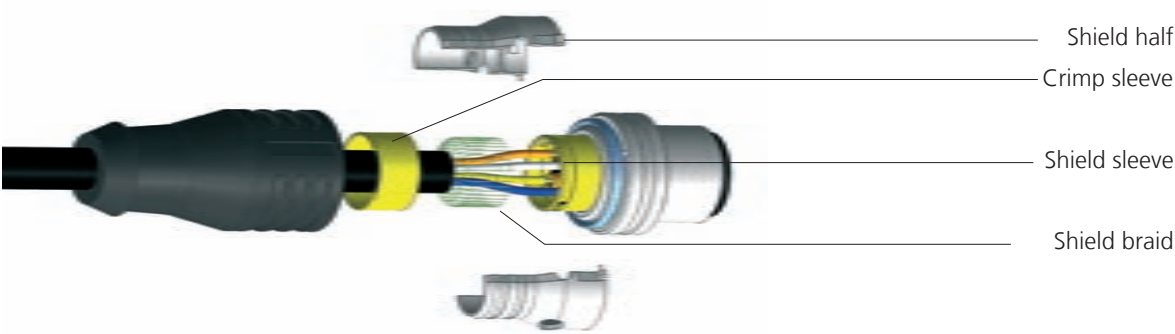
Degrees of Protection | IP: International Protection

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

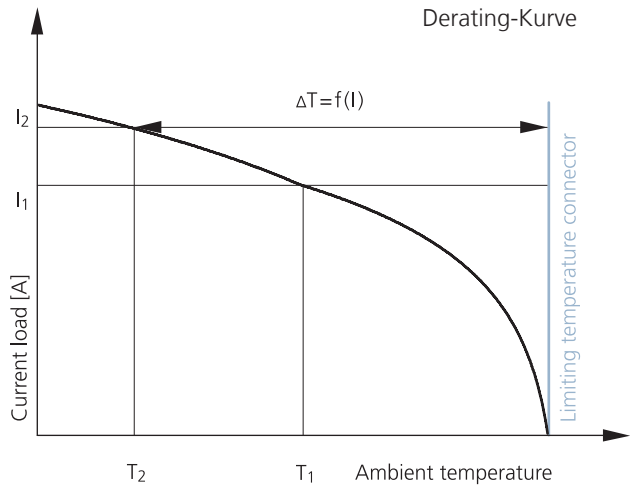
Specifies the maximum electrical voltage during standard operation. Operating properties of round connectors are related to rated voltage.

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.

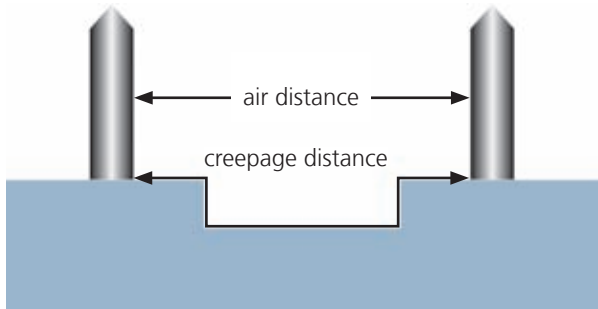
Current load

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
	19x0.10	0.51	0.15
24	1 x0.51	0.51	0.21
	17 x0.20	0.61	0.22
	19x0.13	0.64	0.25
22	1 x0.64	0.64	0.33
	7 x0.25	0.76	0.34
	19 x0.16	0.81	0.38
20	1 x0.81	0.81	0.52
	7 x0.32	0.97	0.56
	19 x0.20	1.02	0.60
18	1 x1.02	1.02	0.82
	19 x0.25	1.27	0.93
16	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

Standard cable qualities

Cable quality	Features	Application
PUR S370® black	PVC-, silicon-, and halogen-free control-cable, weld-field immune,oil-, fire-, chemicals-, hydrolysis-, microbes resistant drag-chain application: $r > 10 \times d$, $v = 200 \text{ m/min}$ (at $a_{\text{max}} = 5 \text{ m/s}^2$), Temperature resistance $-40^\circ\text{C} \dots +90^\circ\text{C}$	use in the area of robotics, machine tool and metal-cutting production
PVC P00, P01® grey	good resistance against acids and lye, limited oil- and chemicals resistance, restricted abrasion, for average mechanical stresses	for packing machines as well as assembly- and production Product lines, F&B
PP S2300 light blue	flexible, flame retardant, good microbes- and chemicals resistance, torque up to 50 N/mm^2 , drag chain, movable machine parts tested strength against highly effective detergents	Food&Beverage, packaging-, bottling plants, indus- trial machinery- and plant version
PTFE S2430 white	high temperature resistance ($300^\circ\text{C}/3000\text{h}$), cold bending resistance down to -65°C , excellent oil-, acids-, chemicals-, ozone- and weather resistant, flame retardant, no corrosive fire gases, low smoke	industrial machinery- and plant Version, chemical industry, auto- motive industry
PUR S2171® green	shielded, flexible, PVC-, silicon- and halogen-free Cat5e Ethernet cable, oil resistant, flame retardant, drag chain application up to 3 million bending cycles, $r > 200 \text{ mm}$, $v = 4 \text{ m/s}$ (at $a_{\text{max}} = 4 \text{ m/s}^2$)	industrial Ethernet-applications in industrial machinery- and plant version
PUR S3500® green	shielded, flexible, PVC-, silicon- und halogen-free Cat7 Ethernet cable, oil resistant, flame retardant	Building-installation, Vision-systems, industrial Ethernet-applications with high data-volume
PUR S3700® green	shielded, flexible, PVC-, silicon- und halogen-free Cat5e Ethernet cable, oil resistant, flame retardant	industrial Ethernet-applications in industrial machinery- and plant version
PUR S1800® violet	shielded, flexible, flame retardant, halogen-free Profibus cable for high requirements of the industrial machine- and plant construction,transmission values according to RSA485 (cable type A) of PNO, suitable for energy flow on movable machine parts	use in the area of industrial machinery- and plant Version ac- cording to specifications of PNO
PUR S2800® dark grey	flexible, flame retardant, halogen-free bus cable including CANopen DeviceNet, excellent EMC-properties, bending cycles $> 1 \text{ million}$, suitable for energy flow on movable machine parts	use in the area of industrial ma- chinery- and plant Version accor- ding to specifications of CANBus/ DeviceNet- especially movable machine parts and drag chain ap- plications

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.

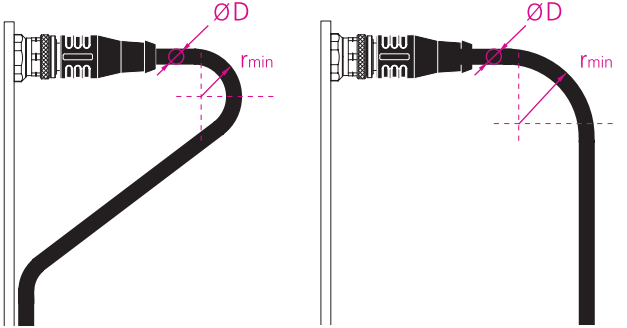
The use of a torque application tool is recommended for tightening and loosening of Round Connectors (accessories page153).

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.

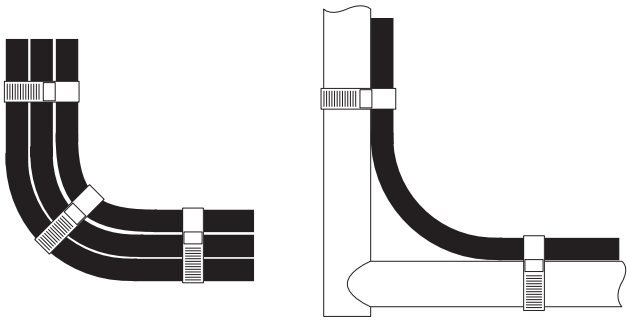
When using cable ties for cable bundling or permanent wiring, the ties must not cut into or deform the cable to avoid short circuits, cable interruptions or a reduction of the dielectric strength.

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.

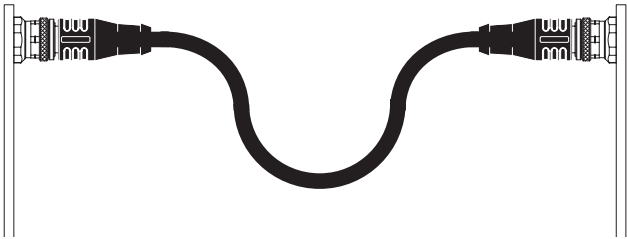


$r_{\text{min}} = 5 \times D$

$r_{\text{min}} = 10 \times D$



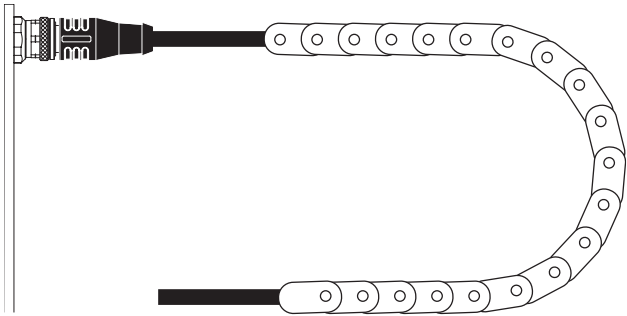
Bundling of several cables Fixing of cables



Cable loops



Cable with spiral lines



Draig chain application

Representatives abroad

 AUMECON S.A.
Acassuso 4768
1605 Munro/Buenas Aires
Argentina
Phone: +54 11 47561251
Fax: +54 11 47626331
aumeco@aumecon.com.ar
www.aumecon.com.ar

 TURCK GmbH
Graumannsgasse 7/A5-1
1150 Wien
Austria
Phone: +43 1 4861587
Fax: +43 1 486158723
austria@turck.com
www.turck.at

 Multiprox N. V.
Lion d'Orweg 12
9300 Aalst
Belgium
Phone: +32 53 766566
Fax: +32 53 783977
mail@multiprox.be
www.multiprox.be

 Sensor do Brasil
Rua Jordao Schiavetto, 436
13184-080 Hortolandia/SP
Brazil
Phone: +55 19 3897 9400
Fax: +55 19 3897 9414
sensor@sensordobrasil.com.br
www.sensordobrasil.com.br

 Turck (Tianjin) Sensor Co., Ltd.
18, 4th XingHuaZhi Road
XiQing Economic Development Zone
Tianjin 300381
China
Phone: +86 22 83988 188
Fax: +86 22 83988 111
china@turck.com
www.turck.com.cn

 TURCK S.R.O.
Hradecká 1151
50003 Hradec Králové
Czech Republic
Phone: +420 49 5518766
Fax: +420 49 5518767
turck-cz@turck.com
www.turck.cz

 Hans Følsgaard A/S
Theilgaards Torv 1
4600 Køge
Denmark
Phone: +45 43 208600
Fax: +45 43 968855
hf@hf.net
www.hf.net

 SARLIN Oy Ab
Kaivokselaantie 3-5
01610 Vantaa
Finland
Phone: +358 10550 4000
Fax: +358 10550 4201
info@sarlin.com
www.sarlin.com

 TURCK Banner S.A.S.
3, Rue de Courtalin
Magny-le-Hongre
77703 Marne-La-Vallee Cedex 4
France
Phone: +33 1 60436070
Fax: +33 1 60431018
info@turckbanner.fr
www.turckbanner.fr

 TURCK Banner Ltd.
Blenheim House | Hurricane Way
Wickford, Essex SS11 8YT
Great Britain
Phone: +44 1268 578888
Fax: +44 1268 763648
enquiries@turckbanner.co.uk
www.turckbanner.co.uk

 TURCK Hungary Kft.
Neumann János u. 1/E
1117 Budapest, Infopark
Hungary
Phone: +36 6 4770740
Fax: +36 6 4770741
turck@turck.hu
www.turck.hu

 TURCK India Automation Pvt Ltd.
A 603/604, 6th Floor,
ICC Trade Towers
Senapati Bapat Road
Pune-411016 | Maharashtra
India
Phone: +91 20 256300-39
Fax: +91 20 256300-40
sales.india@turck.com
www.turck.co.in

 Robkon Industrial
Control & Automation Ltd.
12-A Elimelech St.
Ramat-Gan 52 424 | Israel
Tel: +972 3 6732821
Fax: +972 3 6738420
robkonfr@inter.net.il

 TURCK Banner S.r.l.
Via San Domenico 5
20010 Bareggio (MI)
Italy
Phone: +39 02 90364291
Fax: +39 02 90364838
info@turckbanner.it
www.turckbanner.it

 TURCK B.V.
Postbus 297 | Ruiterlaan 7
8000 AG Zwolle | Netherlands
Phone: +31 38 4227750
Fax: +31 38 4227451
info@turck.nl
www.turck.nl

 HF DANYKO AS
Bark Silas Vei 8
4876 Grimstad
Norway
Phone: +47 37 090 940
Fax: +47 37 090 941
danyko@hf.net
www.danyko.no

 TURCK sp.zo.o
ul. Wroclawska 115
PL 45-836 Opole | Poland
Phone: +48 77 4434800
Fax: +48 77 4434801
poland@turck.com
www.turck.pl

 BRESIMAR Automacao, S.A.
Quinta do Simao | EN109 - Esgueira
Apartado 3080
3801-101 Aveiro
Portugal
Phone: +351 234 303 320
Fax: +351 234 303 328/9
bresimar@bresimar.pt
www.bresimar.pt

 TURCK Automation Romania SRL
Str. Siriului nr. 6-8, Sector 1
014354 Bukarest
Romania
Phone: +40 21 230 0279
Fax: +40 21 231 4087
romania@turck.com
www.turck.ro

 TURCK Rus OOO
Altufyevskoe shosse, 1/7
127106 Moscow | Russia
Phone: +7 495 234 2661
Fax: +7 495 234 2665
russia@turck.com
www.turck.com

 TURCK Singapore Pte. Ltd.
25 International Business Park
03-22/23 German Centre
Singapore 609916
Phone: +65 6562 8717
Fax: +65 6562 8719
singapore@turck.com
www.turck.com.sg

 MARPEX s.r.o.
Sportovcov 672
01841 Dubnica nad Váhom
Slovakia
Phone: +421 42 4426986-87
Fax: +421 42 44400 10-11
marpex@marpex.sk
www.marpex.sk

 RET Automation Controls
PO 8378
Edenglen, 1613
South Africa
Phone: +27 11 4532468
Fax: +27 11 4532406
info@retauto.co.za
www.retauto.co.za

 TURCK Korea Co., Ltd.
Room No. 412, RIT center
Gyeonggi Technopark 1271-11
Sa1-dong, Sangnok-gu, Ansan-city
Gyeonggi-Do
South Korea
Phone: +82 31 500-4555
Fax: +82 31 500-4558
turck-korea@turck.com
www.sensor.co.kr

 ELION S.A.
Farell, 5
08014 Barcelona | Spain
Phone: +34 9 32982000
Fax: +34 9 34311800
elion@elion.es
www.elion.es

 TURCK Sweden Office
EA Rosengrens gata 32
421 31 Västra Frölunda | Sweden
Phone: +46 10 447 1600
Fax: +46 10 447 1620
sweden@turck.com
www.turck.se

 Dietrich & Blum AG
Hertistr. 31
8304 Wallisellen | Switzerland
Phone: +41 848 300700
Fax: +41 848 300701
dbnet@dietrichundblum.ch
www.dietrichundblum.ch

Bachofen AG
Ackerstr. 42
8610 Uster | Switzerland
Phone: +41 44 9441111
Fax: +41 44 9441004
info@bachofen.ch
www.bachofen.ch

 TURCK Otomasyon Tic. Ltd. Sti.
Inönü Mah. Kayisdagi Cad.
Yesil Konak Evleri No: 178, A Blok D:4
34755 Atasehir/Istanbul | Turkey
Phone: +90 216 5722177
Fax: +90 216 5722123
www.turck.com

Gökhan Elektrik
Malzemeleri Sanayi ve Ticaret LTD SIT.
Perpa Elektrokent is Merkezi A Blok K.8
No.692-694
34385 Okmeydani/Istanbul | Turkey
Phone: +90 2122213236
Fax: +90 2122213240
gokhan@gokhanelektrik.com.tr
www.gokhanelektrik.com.tr

 TURCK Inc.
3000 Campus Drive
Plymouth, MN 55441 | USA
Phone: +1 763 5537300
Fax: +1 763 5530708
mailbag@turck.com
www.turck.com

License productions

 TURCK (Tianjin) Sensor Co., Ltd.
18, 4th XingHuaZhi Road
XiQing Economic Development Zone
Tianjin 300381 | China

 TURCK Mexico S. de R.L. de C.V.
Carretera Saltillo-Zacatecas km 4.5 s/n
Parque Industrial La Angostura
25070 Saltillo, Coahuila | Mexico

 TURCK Inc.
5000 Fernbrook Lane North
Plymouth, MN 55446 | USA

Representatives | Germany

 C+R Automations-GmbH
Weinzierleiner Str. 9
90513 Zirndorf
Phone: +49 911 604367
Fax: +49 911 6002409
info@crautomation.de
www.crautomation.de

Eickmann
Elektronik GmbH & Co. KG
Handwerkerstr. 19
58638 Iserlohn
Phone: +49 2371 435999-0
Fax: +49 2371 435999-20
info@eickmann-elektronik.de
www.eickmann-elektronik.de

Endres + Seidl GmbH
Marie-Curie-Str. 2
35510 Butzbach
Phone: +49 6033 960901
Fax: +49 6033 960919
info@endres-seidl.de
www.endres-seidl.de

Fritsche
Industrievertretungen GmbH
Großhorst 15
30916 Isernhagen
Phone: +49 5136 8893-0
Fax: +49 5136 8893-20
info@fritschegmbh.de
www.fritschegmbh.de

Hopf
Vertriebsgesellschaft mbH
Katharina-Paulus-Str. 8
65824 Schwalbach
Phone: +49 6196 4930
Fax: +49 6196 493288
info@hopf-onProduct line.de
www.hopf-onProduct line.de

Peres GmbH
Köhlstr. 14
50827 Köln
Phone: +49 221 956403-0
Fax: +49 221 594048
info@peres.de
www.peres.de

Sangel
Systemtechnik GmbH
Schillerstr. 44
33609 Bielefeld
Phone: +49 521 91175-0
Fax: +49 521 91175-77
info@sangel.com
www.sangel.com

Werner Sauter GmbH
Eichwiesenring 4b
70567 Stuttgart
Phone: +49 711 132630
Fax: +49 711 7156541
info@werner-sauter.de

Hermann Seidel GmbH
Rahlstedter Str. 16
22149 Hamburg
Phone: +49 40 675085-0
Fax: +49 40 675085-85
info@seidel-gmbh.de
www.seidel-gmbh.de

Hans Turck GmbH + Co. KG
Witzlebenstr. 7
45472 Mülheim/Ruhr
Phone: +49 208 49520
Fax: +49 208 495264
turckmh@mail.turck.globe.de
www.turck.de

Rolf Weigel GmbH & Co. KG
Steinerne Furt 65a
86167 Augsburg
Phone: +49 821 740240
Fax: +49 821 706996
info@rolf-weigel.de
www.rolf-weigel.de

Headquarters

 ESCHA Bauelemente GmbH
Elberfelder Str.32
58553 Halver | Germany
Phone: +49 2353 708-800
Fax: +49 2353 708-410
info@escha.de
www.escha.de

