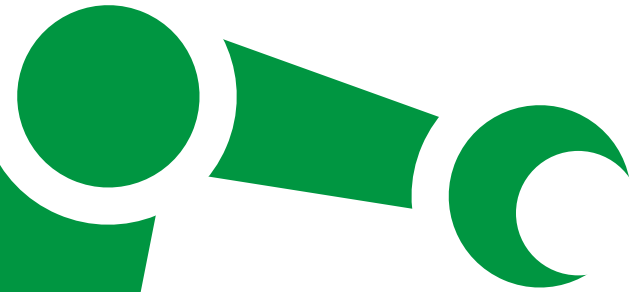


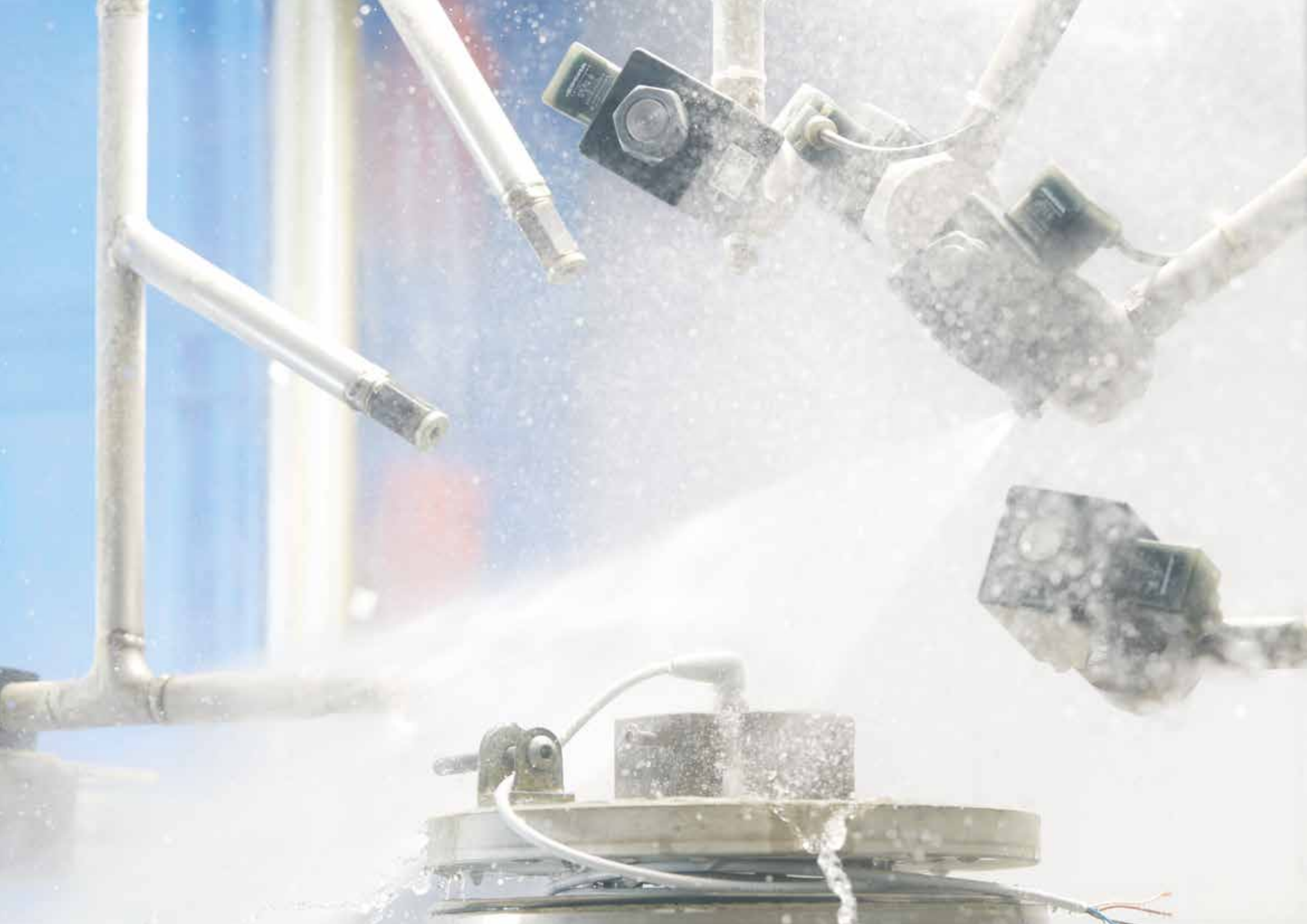
**DRAG CHAIN**



**TORSION**



# ROBOTIC Connectivity for Robot Applications



## ESCHA – specialist in connectivity.

ESCHA develops, manufactures and markets high-grade connectivity- and housing technology. Coming from automation engineering, we master the technology of dust- and waterproof connectivity. We regularly transfer the advantages of this technology to new applications and develop product portfolios for different industries.

Through our global sales network and production sites in Europe, Asia and America we are close to our customers and guarantee consistent standards worldwide.

Our strengths are many years of experience, innovative product development, a modern tool- and equipment shop, highly in-depth manufacturing and many motivated employees.

We carry out IP-tests, climate tests or mechanical stress tests in our in-house test lab. Before leaving the company, we check all our products for 100% electrical function.

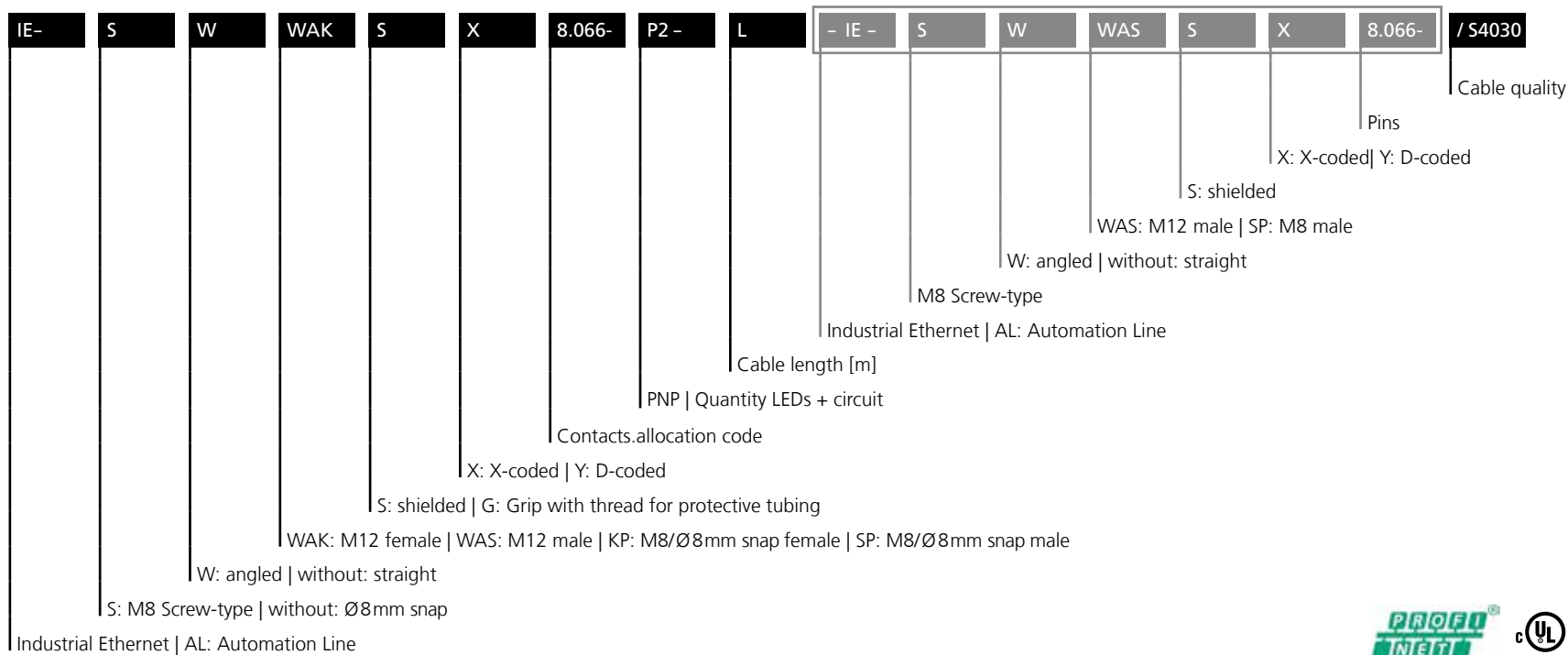
For the growing requirements of high-performance data networks, we develop connectors that take high-frequency transmission properties into account and check this in our own HF lab.

ESCHA is well known to find smart solutions for customer-specific connectivity issues – from the development of individual housing technology up to the production of various highly-complex harnesses.

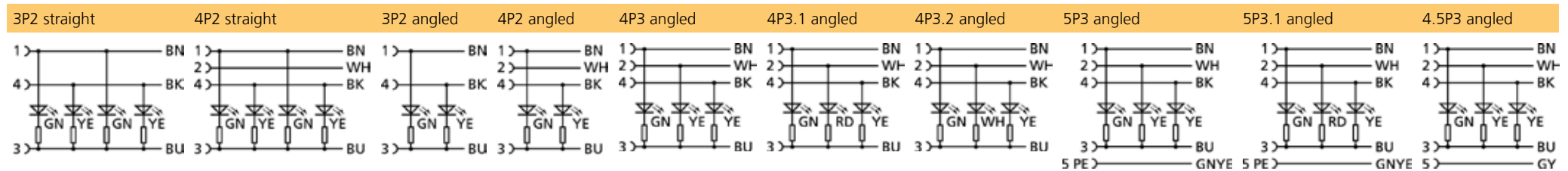
ESCHA is AEO and REX certified and an approved »Know Consignor«. Together with our in-house customs this means fast and flexible delivery 24/7.



Nomenclature of patched connectors



Cable	Material	UL	Color	Transmission features	Feature	Drag-chain capability	Torsion capability	Weldfield immunity
S4030	PUR	✓	GN	Cat7	PROFINET 4x2xAWG24/7 Typ C		>5million cycles (±180°/m)	
S4031	PUR	✓	GN	Cat6	PROFINET 4x2xAWG26/19 Typ C	4 million bending cycles		
S5100	PUR/PE	✓	GN	Cat5e	PROFINET robotic AWG22/19 Typ R	5 million bending cycles	>5million cycles	
S7400	PUR/PP	✓	OG		robotic, for high mechanical stresses	≥10million bending cycles (max. 5m/s <sup>2</sup> )	≥10million cycles (±360°/m)	✓























## Connectivity for Robot Applications

Technical data	M12	M8	RJ45	Ø8mm snap
Insulation resistance	≥10 <sup>8</sup> Ω	≥10 <sup>8</sup> Ω	≥10 <sup>8</sup> Ω	≥10 <sup>8</sup> Ω
Resistance	≤ 5mΩ	≤ 5mΩ	≤ 5mΩ	≤ 5mΩ
Ambient temperature product	-30°C...+90°C	-30°C...+90°C	-40°C...+70°C	-30°C...+90°C
Contact material	Metal, gold-plated	Metal, gold-plated	Metal, gold-plated	Metal, gold-plated
Contact-carrier material	Plastic, TPU	Plastic, TPU	Plastic	Plastic, TPU
Grip body material	Plastic, TPU	Plastic, TPU	Plastic, TPE	Plastic, TPU
Coupling nut material	Metal, nickel-plated	Metal, nickel-plated		
Sealing (female) material	FPM/FKM	FPM/FKM		FPM/FKM
Standards	IEC 61076-2-101/-109	IEC 61076-2-101/-109	IEC 60603-7-5	IEC 61076-2-104
Degree of protection (mounted)	IP65, IP67, IP68	IP65, IP67, IP68	IP20	IP65, IP67, IP68
Mechanical life-cycle	>100 mating cycles	>100 mating cycles	>750 mating cycles	>100 mating cycles
Degree of pollution	3	3/2	1	3/2










Collaborating robots are the new trend in automated production processes, depending especially on reverse-bending- and torsion properties of connection- and junction cables. ESCHA offers you a comprehensive connectivity program for robot applications. You can choose from different types of cables and connectors for a safe transmission of data, signals, and currents in dynamic application areas. The entire Industrial-Ethernet-portfolio from ESCHA was designed according to high-frequency-aspects and provides huge reserves for a fast and reliable data-transmission for the demands of tomorrow.

		Body				Cable			Item description	L = cable length*		
		Pins	U[max]	I[max]	Δh[mm]	Material	Color	UL		2m / 1m	5m / 2m	10m / 5m
	Single-ended cordset female, straight, M12 shielded Cat5e	4, D	60V	4A		PUR	GN	•	IE-WAKSY4.029-L/S5100	8088951	8088952	8089476
	Single-ended cordset female, angled, M12 shielded Cat5e	4, D	60V	4A		PUR	GN	•	IE-WWAKSY4.029-L/S5100	8088954	8089276	8089277
	Single-ended cordset male, straight, M12 shielded Cat5e	4, D	60V	4A		PUR	GN	•	IE-WASSY4.029-L/S5100	8088138	8088139	8088140
	Single-ended cordset male, angled, M12 shielded Cat5e	4, D	60V	4A		PUR	GN	•	IE-WWASSY4.029-L/S5100	8088141	8088142	8088143
	Single-ended cordset male, straight, RJ45 shielded Cat5e	4	60V	1A		PUR	GN	•	IE-RJ45SS4.003-L/S5100	8088144	8088145	8088146
	Receptacle Single-ended cordset female, straight, M12 shielded Cat5e Cable Back wall-mounting	4, D	250V	4A		PUR	GN	•	IE-FKFDSY4.029-L/16/S5100	8088147	8088148	8088149
	Receptacle Single-ended cordset female, angled, M12 shielded Cat5e Cable Back wall-mounting	4, D	60V	4A		PUR	GN		IE-WFKFDSY4.029-L/16/S5100	8088150	8088151	8088152
 	Double-ended cordset female, straight, M12 shielded Cat5e male, straight, M12 shielded Cat5e	4, D 4, D	60V	4A		PUR	GN	•	IE-WAKSY4.029-L-IE-WASSY4.029/S5100	8088168	8088169	8088170
 	Double-ended cordset female, straight, M12 shielded Cat5e male, angled, M12 shielded Cat5e	4, D 4, D	60V	4A		PUR	GN	•	IE-WAKSY4.029-L-IE-WWASSY4.029/S5100	8088171	8088172	8088173

\* Standard cable-lengths for single-ended cordset: 2m, 5m, or 10m. For double-ended cordset: 1m, 2m, or 5m. Wire length for receptacles: 0.5m (0.2m for POWER). Other cable- and wire lengths are available upon request.

		Body				Cable			Item description	L = cable length*		
		Pins	U[max]	I[max]	Δh[mm]	Material	Color	UL		2m / 1m	5m / 2m	10m / 5m
	Double-ended cordset female, angled, M12 male, straight, M12 shielded Cat5e	4, D 4, D	60V	4A		PUR	GN	•	IE-WWAKSY4.029-L-IE-WASSY4.029/S5100	8088174	8088175	8088176
	Double-ended cordset female, angled, M12 male, angled, M12 shielded Cat5e	4, D 4, D	60V	4A		PUR	GN	•	IE-WWAKSY4.029-L-IE-WWASSY4.029/S5100	8088177	8088178	8088179
	Double-ended cordset male, straight, M12 male, straight, M12 shielded Cat5e	4, D 4, D	60V	4A		PUR	GN	•	IE-WASSY4.029-L-IE-WASSY4.029/S5100	8088153	8088154	8088155
	Double-ended cordset male, straight, M12 male, straight, RJ45 shielded Cat5e	4, D 4	60V	1A		PUR	GN	•	IE-WASSY4.029-L-IE-RJ45SS4.003/S5100	8088162	8088163	8088164
	Receptacle Double-ended cordset female, straight, M12 male, straight, RJ45 shielded Cat5e	4, D	50V	1A		PUR	GN	•	IE-FKFSY4.029-L-IE-RJ45SS4.003/S5100	8089267	8088945	8088946
	Double-ended cordset male, angled, M12 male, straight, M12 shielded Cat5e	4, D 4, D	60V	4A		PUR	GN	•	IE-WWASSY4.029-L-IE-WASSY4.029/S5100	8088156	8088157	8088158
	Double-ended cordset male, angled, M12 male, straight, RJ45 shielded Cat5e	4, D 4	60V	1A		PUR	GN	•	IE-WWASSY4.029-L-IE-RJ45SS4.003/S5100	8088165	8088166	8088167

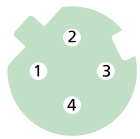
\* Standard cable-lengths for single-ended cordset: 2m, 5m, or 10m. For double-ended cordset: 1m, 2m, or 5m. Wire length for receptacles: 0.5m (0.2m for POWER). Other cable- and wire lengths are available upon request.

		Body				Cable			Item description	L = cable length*		
		Pins	U[max]	I[max]	$\Delta h$ [mm]	Material	Color	UL		2m / 1m	5m / 2m	10m / 5m
	Double-ended cordset male, angled, M12 male, angled, M12 shielded Cat5e	4, D 4, D	60V	4A		PUR	GN	•	IE-WWASSY4.029-L-IE-WWASSY4.029/S5100	8088159	8088160	8088161
	Double-ended cordset male, straight, RJ45 male, straight, RJ45 shielded Cat5e Industrial	4 4	50V	1A		PUR	GN	•	IE-RJ45SS4.003-L-IE-RJ45SS4.003/S5100	8088974	8089268	8088975
	Single-ended cordset male, straight, M12 shielded Cat6A	8, X	50V <sub>AC</sub>   60V <sub>DC</sub>	0.5A		PUR	GN	•	IE-WASSX8.066-L/S4030	8063566	8063567	8063568
				0.5A		PUR	GN	•	IE-WASSX8.066-L/S4031	8063578	8063579	8063580
	Receptacle Single-ended cordset female, straight, M12 shielded Cat6A Cable Back wall-mounting	8, X	50V <sub>AC</sub>   60V <sub>DC</sub>	0.5A		PUR	GN		IE-FKFDSX8.066-L/S4030	8063572	8063573	8063574
				0.5A		PUR	GN		IE-FKFDSX8.066-L/S4031	8063584	8063585	8063586
	Double-ended cordset male, straight, M12 male, straight, M12 shielded Cat6A	8, X 8, X	50V <sub>AC</sub>   60V <sub>DC</sub>	0.5A		PUR	GN	•	IE-WASSX8.066-L-IE-WASSX8.066/S4030	8063563	8063564	8063565
				0.5A		PUR	GN	•	IE-WASSX8.066-L-IE-WASSX8.066/S4031	8063575	8063576	8063577
	Receptacle Double-ended cordset female, straight, M12 male, straight, M12 Cat6A	8, X 8, X	50V <sub>AC</sub>   60V <sub>DC</sub>	0.5A		PUR	GN	•	IE-FKFDSX8.066-L-IE-WASSX8.066/S4030	8063569	8063570	8063571
				0.5A		PUR	GN	•	IE-FKFDSX8.066-L-IE-WASSX8.066/S4031	8063581	8063582	8063583
	Single-ended cordset female, straight, M8 shielded Cat5e	4, D	50V <sub>AC</sub>   60V <sub>DC</sub>	4A		PUR	GN	•	IE-SKPSD4.073-L/S5100	8092564	8092565	8092566
	Single-ended cordset female, angled, M8 shielded Cat5e	4, D	50V <sub>AC</sub>   60V <sub>DC</sub>	4A		PUR	GN	•	IE-SWKPSD4.073-L/S5100	8092567	8092568	8092569
	Single-ended cordset male, straight, M8 shielded Cat5e	4, D	50V <sub>AC</sub>   60V <sub>DC</sub>	4A		PUR	GN	•	IE-SSPSD4.073-L/S5100	8092570	8092571	8092572

\* Standard cable-lengths for single-ended cordset: 2m, 5m, or 10m. For double-ended cordset: 1m, 2m, or 5m. Wire length for receptacles: 0.5m (0.2m for POWER). Other cable- and wire lengths are available upon request.



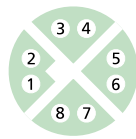
	Body	Cable	L = cable length*						
			Material	Color	UL	Item description	2m / 1m	5m / 2m	10m / 5m
	Single-ended cordset male, angled, M8 shielded Cat5e	Pins: 4, D U[max]: 50V <sub>AC</sub>   60V <sub>DC</sub> I[max]: 4A Δh[mm]:	PUR	GN	•	IE-SWSPSD4.073-L/S5100	8092573	8092574	8092575
	Double-ended cordset female, straight, M8 shielded Cat5e	Pins: 4, D U[max]: 50V <sub>AC</sub>   60V <sub>DC</sub> I[max]: 4A Δh[mm]:	PUR	GN	•	IE-SKPSD4.073-L-IE-SSPSD4.073/S5100	8092582	8092583	8092584
	Double-ended cordset female, angled, M8 shielded Cat5e	Pins: 4, D U[max]: 50V <sub>AC</sub>   60V <sub>DC</sub> I[max]: 4A Δh[mm]:	PUR	GN	•	IE-SWKPSD4.073-L-IE-SWSPSD4.073/S5100	8092585	8092586	8092587
	Double-ended cordset male, straight, M8 shielded Cat5e	Pins: 4, D U[max]: 50V <sub>AC</sub>   60V <sub>DC</sub> I[max]: 4A Δh[mm]:	PUR	GN		IE-SSPSD4.073-L-IE-SSPSD4.073/S5100	8092576	8092577	8092578
	Double-ended cordset male, angled, M8 shielded Cat5e	Pins: 4, D U[max]: 50V <sub>AC</sub>   60V <sub>DC</sub> I[max]: 4A Δh[mm]:	PUR	GN		IE-SWSPSD4.073-L-IE-SWSPSD4.073/S5100	8092579	8092580	8092581



M12 female 4D



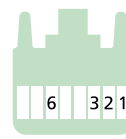
M12 male 4D



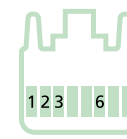
M12 female 8X



M12 male 8X



RJ45 female



RJ45 male












M8 female 4D











M8 male 4D

Type	Pins	Coding	Allocation code	Pin							
				1	2	3	4	5	6	7	8
M12	4	D	4.029	YE	WH	OG	BU				
M12	8	X	8.066	WHOG	OG	WHGN	GN	WHBN	BN	WHBU	BU
RJ45	4		4.003	YE	OG	WH			BU		
M8	4	D	4.073	YE	WH	OG	BU				

\* Standard cable-lengths for single-ended cordset: 2m, 5m, or 10m. For double-ended cordset: 1m, 2m, or 5m. Wire length for receptacles: 0.5m (0.2m for POWER). Other cable- and wire lengths are available upon request.

		Body				Cable			Item description	L = cable length*		
		Pins	U[max]	I[max]	LED	Material	Color	UL		2m / 1m	5m / 2m	10m / 5m
	Single-ended cordset female, straight, M12	3	250V	4A		PUR	OG	•	AL-WAK3-L/S7400	8058862	8058863	8058864
		4	250V	4A		PUR	OG	•	AL-WAK4-L/S7400	8058865	8058866	8058867
		4+PE	60V	4A		PUR	OG	•	AL-WAK5-L/S7400	8058868	8058869	8058870
		5	60V	4A		PUR	OG		AL-WAK4.5-L/S7400	8084858	8085288	8085289
	Single-ended cordset female, straight, M12, with LED	3	30V	4A	3P2	PUR	OG	•	AL-WAK3P2-L/S7400	8058928	8058929	8058930
		4	30V	4A	4P2	PUR	OG	•	AL-WAK4P2-L/S7400	8058931	8058932	8058933
	Single-ended cordset female, straight, M12, grip body with thread	4	250V	4A		PUR	OG		AL-WAKG4-L/S7400	8059089	8059090	8059091
	Single-ended cordset female, angled, M12	3	250V	4A		PUR	OG	•	AL-WWAK3-L/S7400	8058880	8058881	8058882
		4	250V	4A		PUR	OG	•	AL-WWAK4-L/S7400	8058883	8058884	8058885
		4+PE	60V	4A		PUR	OG	•	AL-WWAK5-L/S7400	8058886	8058887	8058888
		5	60V	4A		PUR	OG		AL-WWAK4.5-L/S7400	8084859	8085290	8085291
	Single-ended cordset female, angled, M12, with LED	3	30V	4A	3P2	PUR	OG	•	AL-WWAK3P2-L/S7400	8058934	8058935	8058936
		4	30V	4A	4P2	PUR	OG	•	AL-WWAK4P2-L/S7400	8058937	8058938	8058939
				4A	4P3	PUR	OG	•	AL-WWAK4P3-L/S7400	8058940	8058941	8058942
				4A	4P3.1	PUR	OG	•	AL-WWAK4P3.1-L/S7400	8058943	8058944	8058945
				4A	4P3.2	PUR	OG	•	AL-WWAK4P3.2-L/S7400	8058946	8058947	8058948
		4+PE	30V	4A	5P3	PUR	OG	•	AL-WWAK5P3-L/S7400	8058949	8058950	8058951
				4A	5P3.1	PUR	OG	•	AL-WWAK5P3.1-L/S7400	8058952	8058953	8058954
		5	30V	4A	5P3	PUR	OG		AL-WWAK4.5P3-L/S7400	8084866	8085305	8085306
				4A	5P3.1	PUR	OG		AL-WWAK4.5P3.1-L/S7400	8084867	8085307	8085308
			Single-ended cordset female, angled, M12, grip body with thread	4	250V	4A		PUR	OG		AL-WWAKG4-L/S7400	8059095
	Single-ended cordset male, straight, M12	3	250V	4A		PUR	OG	•	AL-WAS3-L/S7400	8058964	8058965	8058966
		4	250V	4A		PUR	OG	•	AL-WAS4-L/S7400	8058967	8058968	8058969
		4+PE	60V	4A		PUR	OG	•	AL-WAS5-L/S7400	8058970	8058971	8058972
		5	60V	4A		PUR	OG		AL-WAS4.5-L/S7400	8084860	8085292	8085293
	Single-ended cordset male, straight, M12, grip body with thread	4	250V	4A		PUR	OG		AL-WASG4-L/S7400	8059101	8059102	8059103
	Single-ended cordset male, angled, M12	3	250V	4A		PUR	OG	•	AL-WWAS3-L/S7400	8058982	8058983	8058984
		4	250V	4A		PUR	OG	•	AL-WWAS4-L/S7400	8058985	8058986	8058987
		4+PE	60V	4A		PUR	OG	•	AL-WWAS5-L/S7400	8058988	8058989	8058990
		5	60V	4A		PUR	OG		AL-WWAS4.5-L/S7400	8084861	8085294	8085295

\* Standard cable-lengths for single-ended cordset: 2m, 5m, or 10m. For double-ended cordset: 1m, 2m, or 5m. Wire length for receptacles: 0.5m (0.2m for POWER). Other cable- and wire lengths are available upon request.

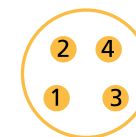
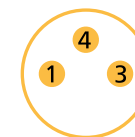
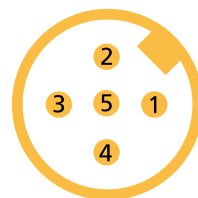
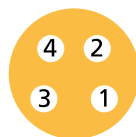
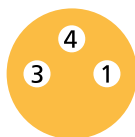
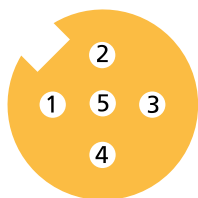
		Body				Cable			Item description	L = cable length*		
		Pins	U[max]	I[max]	LED	Material	Color	UL		2m / 1m	5m / 2m	10m / 5m
	Single-ended cordset male, angled, M12, grip body with thread	4	250V	4A		PUR	OG		AL-WWASG4-L/S7400	8059107	8059108	8059109
	Double-ended cordset female, straight, M12 male, straight, M12	3	250V	4A		PUR	OG	•	AL-WAK3-L-AL-WAS3/S7400	8058921	8058898	8058899
		4	250V	4A		PUR	OG	•	AL-WAK4-L-AL-WAS4/S7400	8057296	8057322	8057324
		4+PE	60V	4A		PUR	OG	•	AL-WAK5-L-AL-WAS5/S7400	8058900	8058901	8058902
		5	60V	4A		PUR	OG		AL-WAK4.5-L-AL-WAS4.5/S7400	8085296	8084862	8085297
	Double-ended cordset female, straight, M12 male, angled, M12	3	250V	4A		PUR	OG	•	AL-WAK3-L-AL-WWAS3/S7400	8058912	8058913	8058914
		4	250V	4A		PUR	OG	•	AL-WAK4-L-AL-WWAS4/S7400	8058915	8058916	8058917
		4+PE	60V	4A		PUR	OG	•	AL-WAK5-L-AL-WWAS5/S7400	8058918	8058919	8058920
		5	60V	4A		PUR	OG		AL-WAK4.5-L-AL-WWAS4.5/S7400	8085298	8084863	8085300
	Double-ended cordset female, straight, M12, with LED male, straight, M12	3	30V	4A	3P2	PUR	OG	•	AL-WAK3P2-L-AL-WAS3/S7400	8059040	8059041	8059042
		4	30V	4A	4P2	PUR	OG	•	AL-WAK4P2-L-AL-WAS4/S7400	8059043	8059044	8059045
	Double-ended cordset female, angled, M12 male, straight, M12	3	250V	4A		PUR	OG	•	AL-WWAK3-L-AL-WAS3/S7400	8059007	8059008	8059009
		4	250V	4A		PUR	OG	•	AL-WWAK4-L-AL-WAS4/S7400	8059010	8059011	8059012
		4+PE	60V	4A		PUR	OG	•	AL-WWAK5-L-AL-WAS5/S7400	8059013	8059014	8059015
		5	60V	4A		PUR	OG		AL-WWAK4.5-L-AL-WAS4.5/S7400	8085301	8084864	8085302
	Double-ended cordset female, angled, M12 male, angled, M12	3	250V	4A		PUR	OG	•	AL-WWAK3-L-AL-WWAS3/S7400	8059025	8059026	8059027
		4	250V	4A		PUR	OG	•	AL-WWAK4-L-AL-WWAS4/S7400	8059028	8059029	8059030
		4+PE	60V	4A		PUR	OG	•	AL-WWAK5-L-AL-WWAS5/S7400	8059031	8059032	8059033
		5	60V	4A		PUR	OG		AL-WWAK4.5-L-AL-WWAS4.5/S7400	8085303	8084865	8085304
	Double-ended cordset female, angled, M12, with LED male, straight, M12	3	30V	4A	3P2	PUR	OG	•	AL-WWAK3P2-L-AL-WAS3/S7400	8059067	8059068	8059069
		4	30V	4A	4P2	PUR	OG	•	AL-WWAK4P2-L-AL-WAS4/S7400	8059070	8059071	8059072
				4A	4P3	PUR	OG	•	AL-WWAK4P3-L-AL-WAS4/S7400	8058054	8057297	8057321
				4A	4P3.1	PUR	OG	•	AL-WWAK4P3.1-L-AL-WAS4/S7400	8059073	8059074	8059075
				4A	4P3.2	PUR	OG	•	AL-WWAK4P3.2-L-AL-WAS4/S7400	8059076	8059077	8059078
		4+PE	30V	4A	5P3	PUR	OG	•	AL-WWAK5P3-L-AL-WAS5/S7400	8059079	8059080	8059081
				4A	5P3.1	PUR	OG	•	AL-WWAK5P3.1-L-AL-WAS5/S7400	8059082	8059083	8059084
		5	30V	4A	4.5P3	PUR	OG		AL-WWAK4.5P3-L-AL-WAS4.5/S7400	8085309	8084868	8085310
4A	4.5P3.1			PUR	OG		AL-WWAK4.5P3.1-L-AL-WAS4.5/S7400	8085311	8084869	8085312		
	Single-ended cordset female, straight, M8	3	60V	4A		PUR	OG	•	AL-SKP3-L/S7400	8059113	8059114	8059115
		4	60V	4A		PUR	OG		AL-SKP4-L/S7400	8066417	8067456	8067457

\* Standard cable-lengths for single-ended cordset: 2m, 5m, or 10m. For double-ended cordset: 1m, 2m, or 5m. Wire length for receptacles: 0.5m (0.2m for POWER). Other cable- and wire lengths are available upon request.

		Body				Cable			Item description	L = cable length*		
		Pins	U[max]	I[max]	LED	Material	Color	UL		2m / 1m	5m / 2m	10m / 5m
	Single-ended cordset female, angled, M8	3	60V	4A		PUR	OG	•	AL-SWKP3-L/S7400	8059119	8059120	8059121
		4	60V	4A		PUR	OG		AL-SWKP4-L/S7400	8067467	8067468	8067469
	Single-ended cordset female, angled, M8, with LED	3	30V	4A	3P2	PUR	OG	•	AL-SWKP3P2-L/S7400	8059125	8059126	8059127
		4	30V	4A	4P2	PUR	OG		AL-SWKP4P2-L/S7400	8067532	8067533	8067534
	Single-ended cordset male, straight, M8	3	60V	4A		PUR	OG	•	AL-SSP3-L/S7400	8059155	8059156	8059157
		4	60V	4A		PUR	OG		AL-SSP4-L/S7400	8067458	8067460	8067461
	Single-ended cordset male, angled, M8	3	60V	4A		PUR	OG	•	AL-SWSP3-L/S7400	8059161	8059162	8059163
		4	60V	4A		PUR	OG		AL-SWSP4-L/S7400	8067462	8067463	8067464
	Double-ended cordset female, straight, M8	3	60V	4A		PUR	OG	•	AL-SKP3-L-AL-SSP3/S7400	8059179	8059180	8059181
	Double-ended cordset male, straight, M8	4	60V	4A		PUR	OG	•	AL-SKP4-L-AL-SSP4/S7400	8067535	8067537	8067549
	Double-ended cordset female, straight, M8	3	60V	4A		PUR	OG	•	AL-SKP3-L-AL-SWSP3/S7400	8059185	8059186	8059188
	Double-ended cordset male, angled, M8	4	60V	4A		PUR	OG		AL-SKP4-L-AL-SWSP4/S7400	8067559	8067560	8067633
	Double-ended cordset female, angled, M8	3	60V	4A		PUR	OG	•	AL-SWKP3-L-AL-SSP3/S7400	8059192	8059193	8059194
	Double-ended cordset male, straight, M8	4	60V	4A		PUR	OG		AL-SWKP4-L-AL-SSP4/S7400	8067634	8067641	8067648
	Double-ended cordset female, angled, M8	3	60V	4A		PUR	OG	•	AL-SWKP3-L-AL-SWSP3/S7400	8059198	8059199	8059200
	Double-ended cordset male, angled, M8	4	60V	4A		PUR	OG		AL-SWKP4-L-AL-SWSP4/S7400	8067554	8067555	8067556
	Double-ended cordset female, angled, M8, with LED	3	30V	4A	3P2	PUR	OG	•	AL-SWKP3P2-L-AL-SSP3/S7400	8059204	8059205	8059206
	Double-ended cordset male, straight, M8	4	30V	4A	4P2	PUR	OG		AL-SWKP4P2-L-AL-SSP4/S7400	8067649	8067703	8067704
	Single-ended cordset female, straight, Ø8mm snap	3	60V	4A		PUR	OG		AL-KP3-L/S7400	8059131	8059132	8059133
		4	60V	4A		PUR	OG		AL-KP4-L/S7400	8067709	8067708	8067710
	Single-ended cordset female, straight, Ø8mm snap, with locking mechanism	3	60V	4A		PUR	OG		AL-ZKP3-L/S7400	8059143	8059144	8059145
		4	60V	4A		PUR	OG		AL-ZKP4-L/S7400	8067747	8067749	8067750
	Single-ended cordset female, angled, Ø8mm snap	3	60V	4A		PUR	OG		AL-WKP3-L/S7400	8059137	8059138	8059139
		4	60V	4A		PUR	OG		AL-WKP4-L/S7400	8067716	8067745	8067746
	Single-ended cordset female, angled, Ø8mm snap, with locking mechanism	3	60V	4A		PUR	OG		AL-ZWKP3-L/S7400	8059149	8059150	8059151
		4	60V	4A		PUR	OG		AL-ZWKP4-L/S7400	8067751	8067752	8067753
	Single-ended cordset male, straight, Ø8mm snap	3	60V	4A		PUR	OG		AL-SP3-L/S7400	8059167	8059168	8059169
		4	60V	4A		PUR	OG		AL-SP4-L/S7400	8067705	8067706	8067707

\* Standard cable-lengths for single-ended cordset: 2m, 5m, or 10m. For double-ended cordset: 1m, 2m, or 5m. Wire length for receptacles: 0.5m (0.2m for POWER). Other cable- and wire lengths are available upon request.

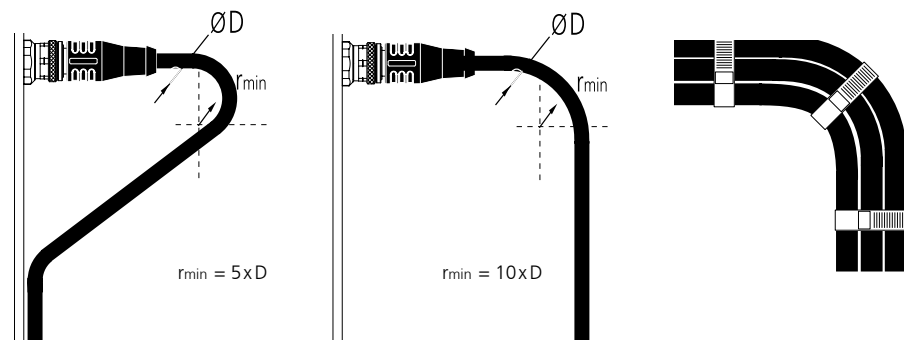
	Body				Cable			Item description	L = cable length*		
	Pins	U[max]	I[max]	LED	Material	Color	UL		2m / 1m	5m / 2m	10m / 5m
	3	60V	4A		PUR	OG		AL-WSP3-L/S7400	8059173	8059174	8059175
	4	60V	4A		PUR	OG		AL-WSP4-L/S7400	8067711	8067712	8067713
	3	60V	4A		PUR	OG		AL-KP3-L-AL-SP3/S7400	8070025	8075725	8062204
	4	60V	4A		PUR	OG	•	AL-KP4-L-AL-SP4/S7400	8075790	8075791	8075792
	3	60V	4A		PUR	OG	•	AL-WKP3-L-AL-SP3/S7400	8075784	8075785	8075786
	4	60V	4A		PUR	OG	•	AL-WKP4-L-AL-SP4/S7400	8075799	8075800	8075801



Pins	Coding	Pin							
		1	2	3	4	5	6	7	8
3	A	BN		BU	BK				
4	A	BN	WH	BU	BK				
4+PE	A	BN	WH	BU	BK	GNYE			
5	A	BN	WH	BU	BK	GY			

\* Standard cable-lengths for single-ended cordset: 2m, 5m, or 10m. For double-ended cordset: 1m, 2m, or 5m. Wire length for receptacles: 0.5m (0.2m for POWER). Other cable- and wire lengths are available upon request.

		Cat7   S4030®	Cat6   S4031®	Cat5e   S5100®	S7400®robotic
Materials	Jacket	PUR	PUR	PUR	PUR
	Insulation	Foam-Skin Polyolefin	Foam-Skin Polyolefin	PE	PP
	Color outer-jacket (similar)	RAL6018	RAL6018	RAL6018	RAL2003
Applications	Machinery-, equipment manufacturing	★★	★★	★★★★	★★★★
	Automotive industry	★★★★	★★★★	★★★★	★★★★
	Robotics	★★★	★★★	★★★★	★★★★
	Food and beverage industry	★	★	★	★
	Packaging and filling systems	★	★	★	★
	Building installations	★★	★★	★★★★	★★
	Wind power plants	★★★★	★★★★	★★★★	★★★★
Resistance	Flame retardant	★★★★	★★★★	★★★★	★★★★
	Oil resistance	★★★★	★★★★	★★★★	★★★★
	Weldfield immunity	★	★	★	★★★★
	Drag-chain capability	★	★★★★	★★★★	★★★★
	Torsion capability	★★★★	★	★★★★	★★★★
	Acids- and alkali resistance				★
	Seawater-resistant	★★	★★	★★	★★
	Ozone- and UV-resistance	★★	★★	★★	★★★★
	Hydrolysis strength	★★	★★	★★	★★
	Microbes resistance	★★	★★	★★	★★
Features	Rated voltage	125V	100V	600V (UL rating)	≤300V
	Bending strength (repeated)	15xØ	7,5xØ	10xØ	10xØ
	Bending strength (single)	8xØ	4xØ	5xØ	5xØ
	Temperature range (repeated)	-30°C...+70°C	-30°C...+70°C	-20°C...+80°C	-30°C...+90°C
	Temperature range (single)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+90°C
	Shielding	✓	✓	✓	
Certifications	Halogen-free	✓	✓	✓	✓
	ROHS (Guideline 2011/65/EU)	✓	✓	✓	✓
	UL and/or CSA	✓	✓	✓	✓
	GOST	✓	✓	✓	✓
	ESCHA product family	IE	IE	IE	AL



### 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. 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.

Data lines are high-performance products. Avoid any mechanical influences like squeezing, edgy snapping and tractive forces during mounting and operating to ensure a permanent and safe data transmission. Be careful while mounting at sub-zero temperatures, as plastics boast different features at low temperatures and the end product might be damaged. 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 double-ended cordsets, 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.

## 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 market.

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.

### Guideline 2011/65/EU (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.

### Guideline SJ/T 11364-2014 (China RoHS Standard)

For ESCHA items, compliance with the guidelines is established with EUP-Label (Environmentally friendly Use Period). Permissible residues of hazardous substances in the product according to RoHS guidelines are chemically ligated in such a way that they do not escape in a period of 50 years (number in EUP-Label) under normal environmental conditions.

### CE-Designation

The CE-Designation indicates the conformity of a product with harmonized EU standard and therein defined requirements.

### EAC-marking

With the EAC-marking, the manufacturer, distributor or authorized representative declares that the product complies with the current safety requirements as laid down in the Technical Regulations of the Eurasian Economic Union. EAC is an abbreviation for Eurasian Conformity. The EAC mark was introduced in August 2013. The EAC mark is similar in content to the European CE mark.





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