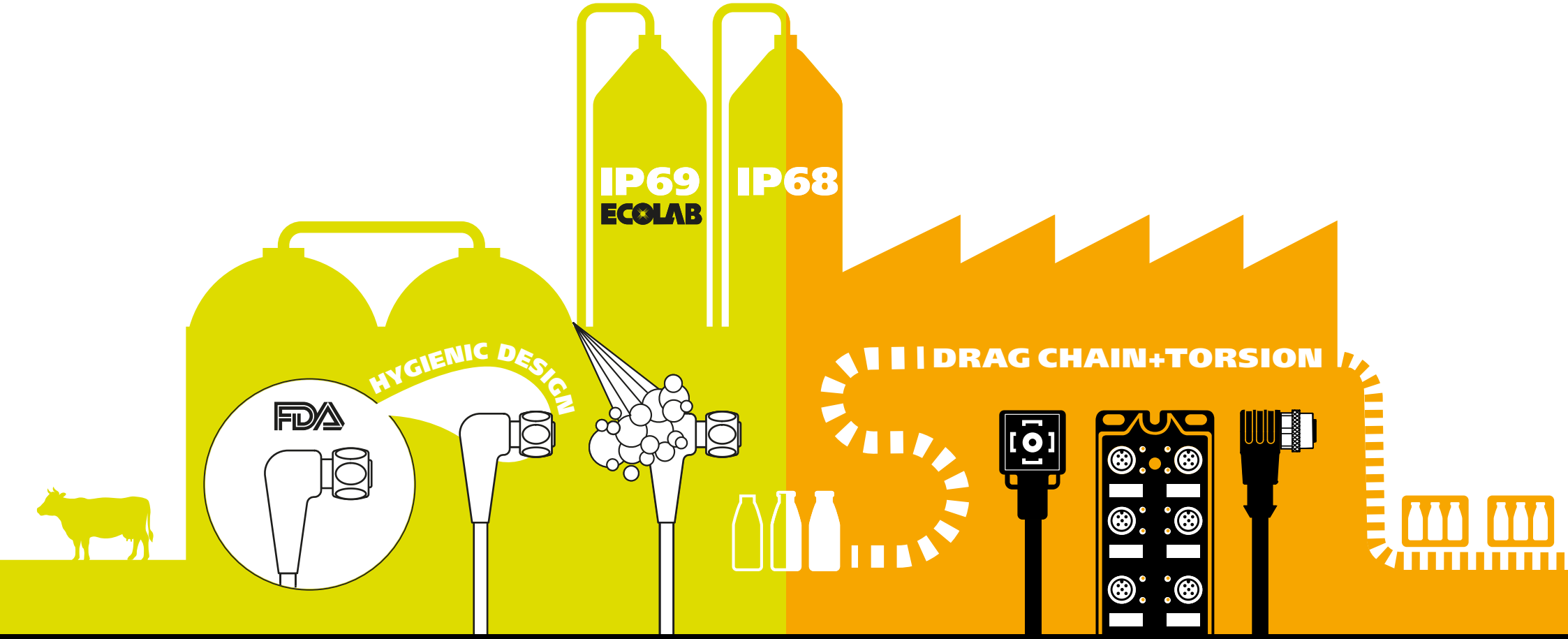
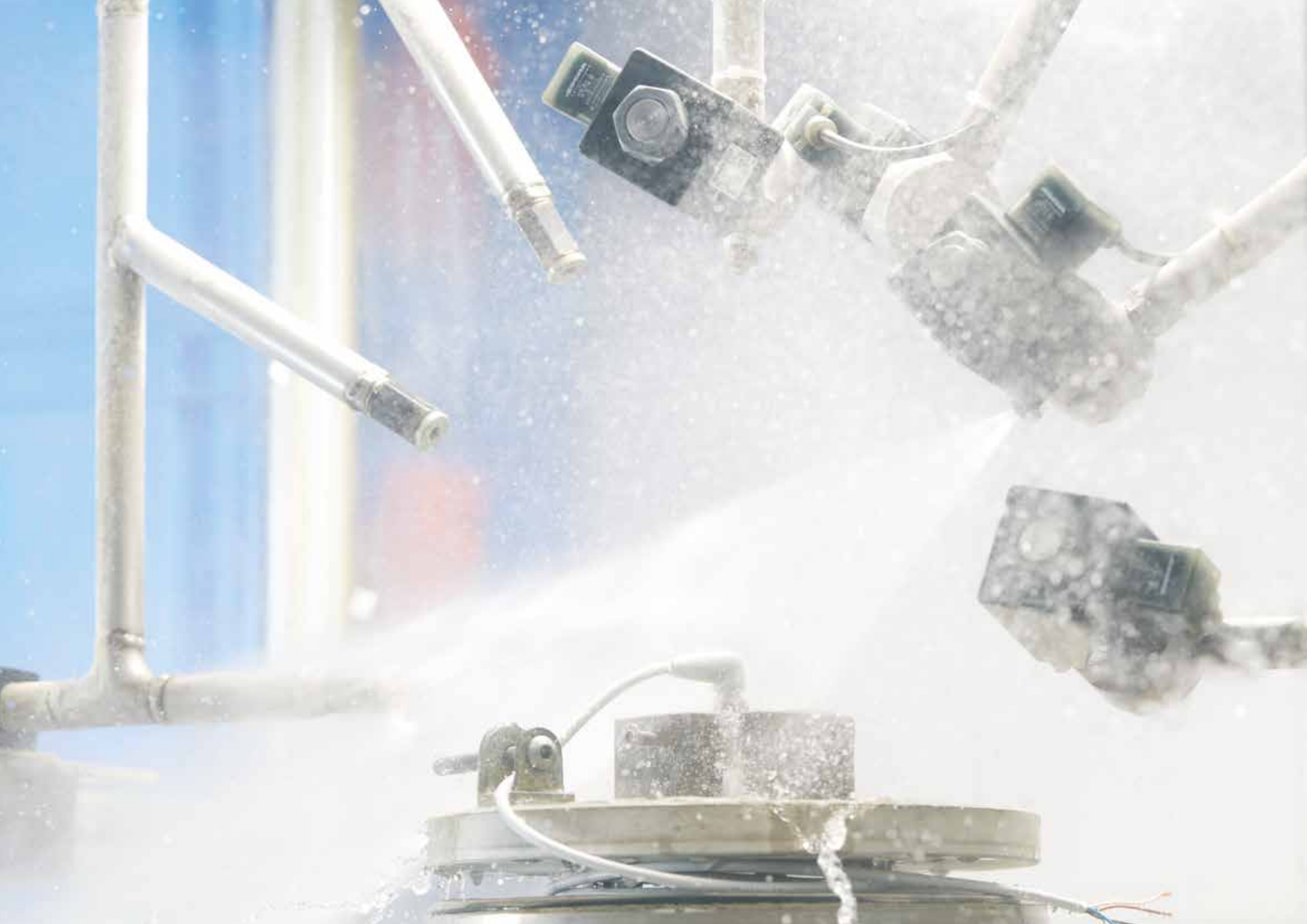
ESCHA



Food & Beverage Connectors for the food industry

escha.net



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

FB –	S	W	WAK	H	K	3 –	P2 –	L	– FB –	S	W	WAS	H	3	/S3930

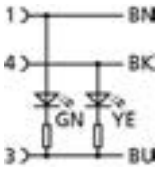
Double-ended cordset

- /S3930: Cable quality
- 3: Pins
- H: Hygienic Design
- WAS: M12 male | SP: M8 male
- W: angled | without: straight
- S: M8 Screw-type
- FB: Food & Beverage
- L: Cable length [m]
- P2: PNP | Quantity LEDs + circuit
- 3: Pins
- K: with plastic locking nut
- H: Hygienic Design
- WAK: M12 female | WAS: M12x1 male | KP: M8 female | SP: M8 male
- W: angled | without: straight
- S: M8x1 Screw-type
- FB: Food & Beverage

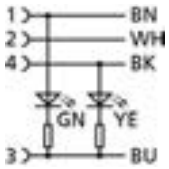
*not for P00 and P01

Cable	Material	UL	Color	Feature
P00	PVC/PVC		GY	
P01	PVC/PVC	✓	GY	
S3930	TPE/TPE		GY	FDA-approved materials, good microbes- and chemical resistant

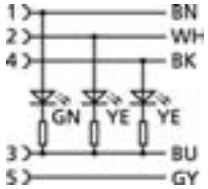
3P2 angled

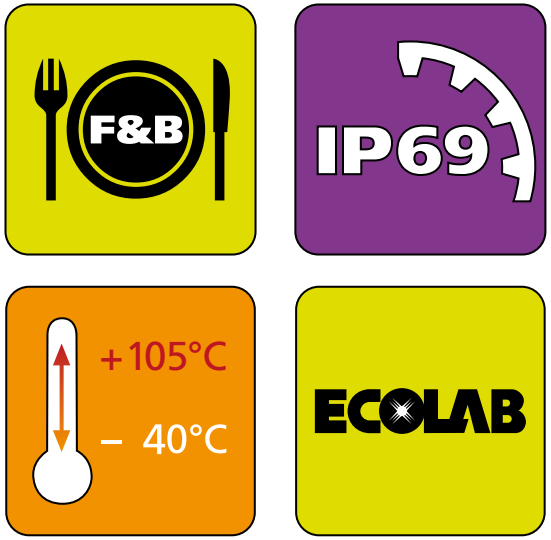


4P2 angled



4.5P3 angled









Food & Beverage

Technical data	M12	M8	Receptacles	Field-wireable
Insulation resistance	≥10^8Ω	≥10^8Ω	≥10^8Ω	≥10^8Ω
Resistance	≤ 5mΩ	≤ 5mΩ	≤ 5mΩ	≤ 5mΩ
Ambient temperature product	-40°C...+105°C	-40°C...+105°C	-40°C...+105°C	-40°C...+85°C
Contact material	Metal, gold-plated	Metal, gold-plated	Metal, gold-plated	Metal, gold-plated
Contact-carrier material	Plastic, PP	Plastic, PP	Plastic, PP	Plastic, PA
Grip body material	Plastic, PP	Plastic, PP		Zinc die-cast, nickel-plated
Coupling nut material	Stainless steel, V4A | Plastic	Stainless steel, V4A	Stainless steel, V4A	Stainless steel, V4A
Sealing (female) material	EPDM	EPDM	FPM/FKM	
Material of external sealing			EPDM	
Receptacle housing material			V4A	
Standards	IEC 61076-2-101	IEC 61076-2-104	IEC 61076-2-101	IEC 61076-2-101
Degree of protection (mounted)	IP65, IP67, IP68, IP69	IP65, IP67, IP68, IP69	IP65, IP67, IP68, IP69	IP67
Mechanical life-cycle	>100 mating cycles	>100 mating cycles	>100 mating cycles	>100 mating cycles
Degree of pollution	3	3/2	3	3
Cable outlet				4...6 mm
Connecting cross-section				max. 0,75 mm²

Our Food&Beverage connectors in 'Hygienic Design' refer to EHEDG directives. FDA-compliant materials guarantee a high resistance to sour and alkaline cleaning- and disinfectant agents. All M8- and M12-components are dust- and water-proof as well as protected against water with high pressure and steam-jet cleaning (IP65, IP67, IP68 and IP69). With PVC and TPE we offer the right cable qualities for your application.

Furthermore and as a cost-effective alternative to stainless-steel, we offer M12 plastic locking nuts which are temperature- and media resistant. These plastic locking nuts are extremely robust, resistant to Ecolab-detergents and can be tightened by hand as well as with a torque wrench.

		Body				Cable				L = cable length*		
	Pins	U[max]	I[max]	LED	Material	Color	UL	Item description	2m / 1m	5m / 2m	10m / 5m
 Single-ended cordset female, straight, M12	3	250V	4A		PVC	GY		FB-WAKH3-L/P00	8063805	8063806	8063807
			4A		PVC	GY		FB-WAKH3-L/P01	8063748	8063749	8063752
			4A		TPE	GY		FB-WAKH3-L/S3930	8050462	8058555	8058556
	4	250V	4A		PVC	GY		FB-WAKH4-L/P00	8063811	8063812	8063813
			4A		PVC	GY		FB-WAKH4-L/P01	8063724	8063725	8063728
			4A		TPE	GY		FB-WAKH4-L/S3930	8050464	8058557	8058558
	5	60V	4A		PVC	GY		FB-WAKH4.5-L/P00	8063817	8063818	8063819
			4A		PVC	GY		FB-WAKH4.5-L/P01	8063739	8063740	8063741
			4A		TPE	GY		FB-WAKH4.5-L/S3930	8063882	8063883	8063884
 Single-ended cordset female, angled, M12	3	250V	4A		PVC	GY		FB-WWAKH3-L/P00	8063834	8063835	8063836
			4A		PVC	GY		FB-WWAKH3-L/P01	8063703	8063704	8063705
			4A		TPE	GY		FB-WWAKH3-L/S3930	8050463	8058559	8058560
	4	250V	4A		PVC	GY		FB-WWAKH4-L/P00	8063799	8063800	8063801
			4A		PVC	GY		FB-WWAKH4-L/P01	8063672	8063673	8063674
			4A		TPE	GY		FB-WWAKH4-L/S3930	8050465	8058561	8058562
	5	60V	4A		PVC	GY		FB-WWAKH4.5-L/P00	8063823	8063824	8063825
			4A		PVC	GY		FB-WWAKH4.5-L/P01	8063687	8063688	8063689
			4A		TPE	GY		FB-WWAKH4.5-L/S3930	8063885	8063886	8063887
 Single-ended cordset female, angled, M12, with LED	3	30V	3A	3P2	PVC	GY		FB-WWAKH3P2-L/P00	8063826	8063827	8063828
			3A	3P2	PVC	GY		FB-WWAKH3P2-L/P01	8063692	8063693	8063694
			3A	3P2	TPE	GY		FB-WWAKH3P2-L/S3930	8058611	8058612	8058613
	4	30V	3A	4P2	PVC	GY		FB-WWAKH4P2-L/P00	8063787	8063788	8063789
			3A	4P2	PVC	GY		FB-WWAKH4P2-L/P01	8063666	8063667	8063668
			3A	4P2	TPE	GY		FB-WWAKH4P2-L/S3930	8058614	8058615	8058616
	5	30V	3A	5P3	PVC	GY		FB-WWAKH4.5P3-L/P00	8063808	8063809	8063810
			3A	5P3	PVC	GY		FB-WWAKH4.5P3-L/P01	8063678	8063679	8063680
			3A	5P3	TPE	GY		FB-WWAKH4.5P3-L/S3930	8063802	8063803	8063804
 Single-ended cordset male, straight, M12	3	250V	4A		PVC	GY		FB-WASH3-L/P00	8063843	8063844	8063845
			4A		PVC	GY		FB-WASH3-L/P01	8063715	8063716	8063717
			4A		TPE	GY		FB-WASH3-L/S3930	8050468	8058563	8058564
	4	250V	4A		PVC	GY		FB-WASH4-L/P00	8063837	8063838	8063839
			4A		PVC	GY		FB-WASH4-L/P01	8063706	8063707	8063708
			4A		TPE	GY		FB-WASH4-L/S3930	8050470	8058565	8058566
	5	60V	4A		PVC	GY		FB-WASH4.5-L/P00	8063840	8063841	8063842
			4A		PVC	GY		FB-WASH4.5-L/P01	8063709	8063710	8063711
			4A		TPE	GY		FB-WASH4.5-L/S3930	8063888	8063889	8063890

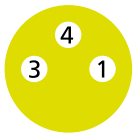
		Body				Cable				L = cable length*		
		Pins	U[max]	I[max]	LED	Material	Color	UL	Item description	2m / 1m	5m / 2m	10m / 5m
	Single-ended cordset male, angled, M12	3	250V	4A		PVC	GY		FB-WWASH3-L/P00	8063781	8063782	8063783
				4A		PVC	GY		FB-WWASH3-L/P01	8063663	8063664	8063665
				4A		TPE	GY		FB-WWASH3-L/S3930	8050469	8058567	8058568
		4	250V	4A		PVC	GY		FB-WWASH4-L/P00	8063775	8063776	8063777
				4A		PVC	GY		FB-WWASH4-L/P01	8063655	8063656	8063657
				4A		TPE	GY		FB-WWASH4-L/S3930	8050471	8058569	8058570
		5	60V	4A		PVC	GY		FB-WWASH4.5-L/P00	8063675	8063676	8063677
				4A		PVC	GY		FB-WWASH4.5-L/P01	8063660	8063661	8063662
				4A		TPE	GY		FB-WWASH4.5-L/S3930	8063891	8063892	8063893
	Double-ended cordset female, straight, M12 male, straight, M12	3	250V	4A		PVC	GY		FB-WAKH3-L-FB-WASH3/P00	8063852	8063853	8063854
				4A		PVC	GY		FB-WAKH3-L-FB-WASH3/P01	8063742	8063744	8063747
				4A		TPE	GY		FB-WAKH3-L-FB-WASH3/S3930	8058587	8058588	8058589
		4	250V	4A		PVC	GY		FB-WAKH4-L-FB-WASH4/P00	8063846	8063847	8063848
				4A		PVC	GY		FB-WAKH4-L-FB-WASH4/P01	8063721	8063722	8063723
				4A		TPE	GY		FB-WAKH4-L-FB-WASH4/S3930	8058590	8058591	8058592
		5	60V	4A		PVC	GY		FB-WAKH4.5-L-FB-WASH4.5/P00	8063849	8063850	8063851
				4A		PVC	GY		FB-WAKH4.5-L-FB-WASH4.5/P01	8063733	8063734	8063735
				4A		TPE	GY		FB-WAKH4.5-L-FB-WASH4.5/S3930	8063681	8063682	8063683
	Double-ended cordset female, angled, M12 male, angled, M12	3	250V	4A		PVC	GY		FB-WWAKH3-L-FB-WWASH3/P00	8063831	8063832	8063833
				4A		PVC	GY		FB-WWAKH3-L-FB-WWASH3/P01	8063697	8063698	8063699
				4A		TPE	GY		FB-WWAKH3-L-FB-WWASH3/S3930	8058593	8058594	8058595
		4	250V	4A		PVC	GY		FB-WWAKH4-L-FB-WWASH4/P00	8063793	8063794	8063795
				4A		PVC	GY		FB-WWAKH4-L-FB-WWASH4/P01	8063669	8063670	8063671
				4A		TPE	GY		FB-WWAKH4-L-FB-WWASH4/S3930	8058596	8058597	8058598
		5	60V	4A		PVC	GY		FB-WWAKH4.5-L-FB-WWASH4.5/P00	8063820	8063821	8063822
				4A		PVC	GY		FB-WWAKH4.5-L-FB-WWASH4.5/P01	8063684	8063685	8063686
				4A		TPE	GY		FB-WWAKH4.5-L-FB-WWASH4.5/S3930	8063814	8063815	8063816
	Receptacle female, straight, M12 Soldering contact Front wall-mounting	4	250V	4A					FB-FKE4-L/PG9	8068276		
		5	60V	4A					FB-FKE4.5-L/PG9	8068277		
	Receptacle female, straight, M12 Wire contact Front wall-mounting	4	250V	4A					FB-FKE4-0,5/PG9	8068278		
		5	60V	4A					FB-FKE4.5-0,5/PG9	8068279		
	Receptacle male, straight, M12 Soldering contact Front wall-mounting	4	250V	4A					FB-FSE4-L/PG9	8068272		
		5	60V	4A					FB-FSE4.5-L/PG9	8068273		

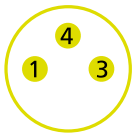
		Body				Cable				L = cable length*		
		Pins	U[max]	I[max]	LED	Material	Color	UL	Item description	2m / 1m	5m / 2m	10m / 5m
	Receptacle male, straight, M12 Wire contact Front wall-mounting	4	250V	4A					FB-FSE4-0,5/PG9	8068274		
		5	60V	4A					FB-FSE4.5-0,5/PG9	8068275		
	Field-wireable connector female, straight, M12 Screw-/clamp contact	5	60V	4A					WAKCE5K	8063393		
	Field-wireable connector female, angled, M12 Screw-/clamp contact	5	60V	4A					WWAKCE5K	8063395		
	Field-wireable connector male, straight, M12 Screw-/clamp contact	5	60V	4A					WASCE5K	8063394		
	Field-wireable connector male, angled, M12 Screw-/clamp contact	5	60V	4A					WWASCE5K	8063396		
	Single-ended cordset female, straight, M8	3	60V	4A		PVC	GY		FB-SKPH3-L/P00	8063690	8063653	8063691
				4A		PVC	GY		FB-SKPH3-L/P01	8063700	8063701	8063702
				4A		TPE	GY		FB-SKPH3-L/S3930	8050454	8058571	8058572
		4	60V	4A		PVC	GY		FB-SKPH4-L/P00	8063652	8063695	8063696
				4A		PVC	GY		FB-SKPH4-L/P01	8063712	8063713	8063714
				4A		TPE	GY		FB-SKPH4-L/S3930	8050455	8058573	8058574
	Single-ended cordset female, angled, M8	3	60V	4A		PVC	GY		FB-SWKPH3-L/P00	8063718	8063719	8063720
				4A		PVC	GY		FB-SWKPH3-L/P01	8063730	8063731	8063732
				4A		TPE	GY		FB-SWKPH3-L/S3930	8050456	8058575	8058576
		4	60V	4A		PVC	GY		FB-SWKPH4-L/P00	8063726	8063727	8063729
				4A		PVC	GY		FB-SWKPH4-L/P01	8063736	8063737	8063738
				4A		TPE	GY		FB-SWKPH4-L/S3930	8050457	8058577	8058578
	Single-ended cordset female, angled, M8, with LED	3	30V	4A	3P2	PVC	GY		FB-SWKPH3P2-L/P00	8063743	8063745	8063746
				4A	3P2	PVC	GY		FB-SWKPH3P2-L/P01	8063761	8063763	8063765
				4A	3P2	TPE	GY		FB-SWKPH3P2-L/S3930	8058619	8058620	8058621
		4	30V	4A	4P2	PVC	GY		FB-SWKPH4P2-L/P00	8063750	8063751	8063753
				4A	4P2	PVC	GY		FB-SWKPH4P2-L/P01	8063760	8063762	8063764
				4A	4P2	TPE	GY		FB-SWKPH4P2-L/S3930	8058622	8058623	8058624

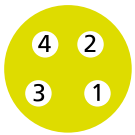
		Body				Cable				L = cable length*		
		Pins	U[max]	I[max]	LED	Material	Color	UL	Item description	2m / 1m	5m / 2m	10m / 5m
	Single-ended cordset male, straight, M8	3	60V	4A		PVC	GY		FB-SSPH3-L/P00	8063769	8063770	8063771
				4A		PVC	GY		FB-SSPH3-L/P01	8063778	8063779	8063780
				4A		TPE	GY		FB-SSPH3-L/S3930	8050458	8058579	8058580
		4	60V	4A		PVC	GY		FB-SSPH4-L/P00	8063772	8063773	8063774
				4A		PVC	GY		FB-SSPH4-L/P01	8063784	8063785	8063786
				4A		TPE	GY		FB-SSPH4-L/S3930	8050459	8058581	8058582
	Single-ended cordset male, angled, M8	3	60V	4A		PVC	GY		FB-SWSPH3-L/P00	8063790	8063791	8063792
				4A		PVC	GY		FB-SWSPH3-L/P01	8063757	8063758	8063759
				4A		TPE	GY		FB-SWSPH3-L/S3930	8050460	8058583	8058584
		4	60V	4A		PVC	GY		FB-SWSPH4-L/P00	8063796	8063797	8063798
				4A		PVC	GY		FB-SWSPH4-L/P01	8063754	8063755	8063756
				4A		TPE	GY		FB-SWSPH4-L/S3930	8050461	8058585	8058586
	Double-ended cordset female, straight, M8 male, straight, M8	3	60V	4A		PVC	GY		FB-SKPH3-L-FB-SSPH3/P00	8063875	8063876	8063877
				4A		PVC	GY		FB-SKPH3-L-FB-SSPH3/P01	8063864	8063865	8063866
				4A		TPE	GY		FB-SKPH3-L-FB-SSPH3/S3930	8058599	8058600	8058601
		4	60V	4A		PVC	GY		FB-SKPH4-L-FB-SSPH4/P00	8063861	8063862	8063863
				4A		PVC	GY		FB-SKPH4-L-FB-SSPH4/P01	8063867	8063868	8063869
				4A		TPE	GY		FB-SKPH4-L-FB-SSPH4/S3930	8058602	8058603	8058604
	Double-ended cordset female, angled, M8 male, angled, M8	3	60V	4A		PVC	GY		FB-SWKPH3-L-FB-SWSPH3/P00	8063858	8063859	8063860
				4A		PVC	GY		FB-SWKPH3-L-FB-SWSPH3/P01	8063871	8063872	8063873
				4A		TPE	GY		FB-SWKPH3-L-FB-SWSPH3/S3930	8058605	8058606	8058607
		4	60V	4A		PVC	GY		FB-SWKPH4-L-FB-SWSPH4/P00	8063855	8063856	8063857
				4A		PVC	GY		FB-SWKPH4-L-FB-SWSPH4/P01	8063766	8063767	8063768
				4A		TPE	GY		FB-SWKPH4-L-FB-SWSPH4/S3930	8058608	8058609	8058610

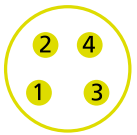
* Unsere Standardleitungslängen sind 2m, 5m oder 10m für Anschlussleitungen und 1m, 2m oder 5m für Verbindungsleitungen. Die Litzenlänge bei Flanschen beträgt 0,5m (POWER 0,2m). Alle anderen Leitungs- und Litzenlängen liefern wir Ihnen gern auf Anfrage.

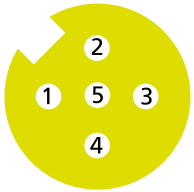
		Body					Cable			
		Pins	U[max]	I[max]	LED	Plastic locking nut | color	Material	Color	UL	Item description
	Single-ended cordset female, straight, M12	4	250V	4 A		GY	TPE	GY		FB-WAKHK4-L/S930
	Single-ended cordset female, angled, M12	4	250V	4 A		GY	TPE	GY		FB-WWAKHK4-L/S3930
	Single-ended cordset male, straight, M12	4	250V	4 A		GY	TPE	GY		FB-WASHK4-L/S3930
	Single-ended cordset male, angled, M12	4	250V	4 A		GY	TPE	GY		FB-WWASHK4-L/S3930
	Double-ended cordset female, straight, M12 male, straight, M12	4	250V	4 A		GY	TPE	GY		FB-WAKHK4-L-FB-WASHK4/S3930
	Double-ended cordset female, angled, M12 male, straight, M12	4	250V	4 A		GY	TPE	GY		FB-WWAKHK4-L-FB-WASHK4/S3930

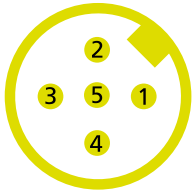






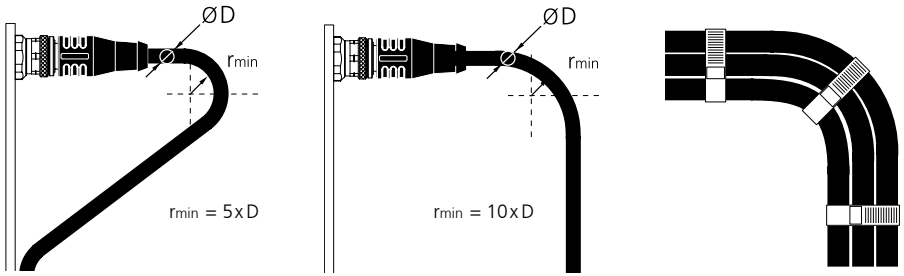






	Contact				
Pins	1	2	3	4	5
3	BN		BU	BK	
4	BN	WH	BU	BK	
5	BN	WH	BU	BK	GY

		P00	P01®	S3930
Materials	Jacket	PVC	PVC	TPE, halogen-free
	Insulation	PVC	PVC	TPE, halogen-free
	Color outer-jacket (similar)	RAL 7040	RAL 7040	RAL 7035
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 strength	★★	★★	★★★★
Features	Rated voltage	≤300V	≤300V	≤250V$_{AC}$
	Bending strength (repeated)	10xØ	10xØ	10xØ
	Bending strength (single)	5xØ	5xØ	5xØ
	Temperature range (repeated)	0°C...+80°C	0°C...+80°C	-25°C...+105°C
	Temperature range (single)	-25°C...+80°C	-25°C...+80°C	-40°C...+105°C
	Shielding	optional	optional	no
Certifications	ROHS	✓	✓	✓
	UL and/or CSA		✓	
	GOST	✓	✓	✓
	ECOLAB	✓	✓	✓



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 (rmin) 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.



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