

Food & Beverage connectivity in Hygienic Design is tailor-made for applications in the food- and beverage industry meeting all important requirements of this challenging sector.

## F&B hygienic

Round connectors M12x1, M8x1  
in Hygienic Design

following EHEDG design  
requirements

FDA-conform materials

ECOLAB tested

stainless-steel locking nut with  
vibration resistance

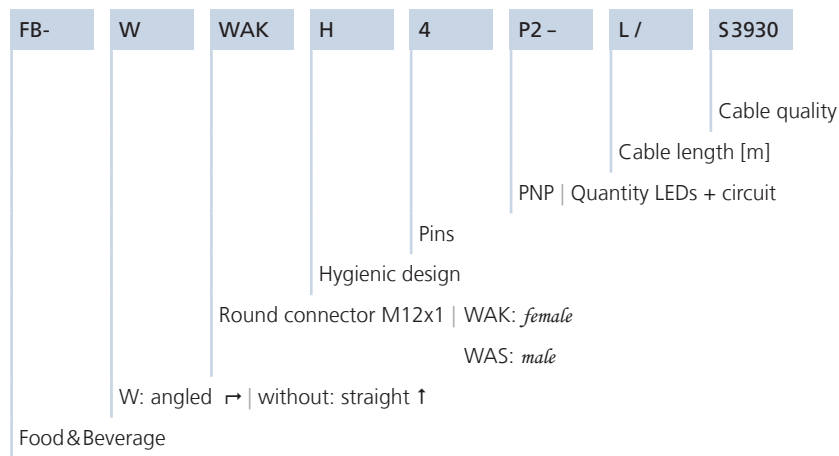
LED-versions

two cable qualities available:  
PVC or TPE (PVC-free)

IP67, IP69K

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Elberfelder Str. 32 | 58553 Halver  
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Fax +49 2353 708 - 8410  
Germany



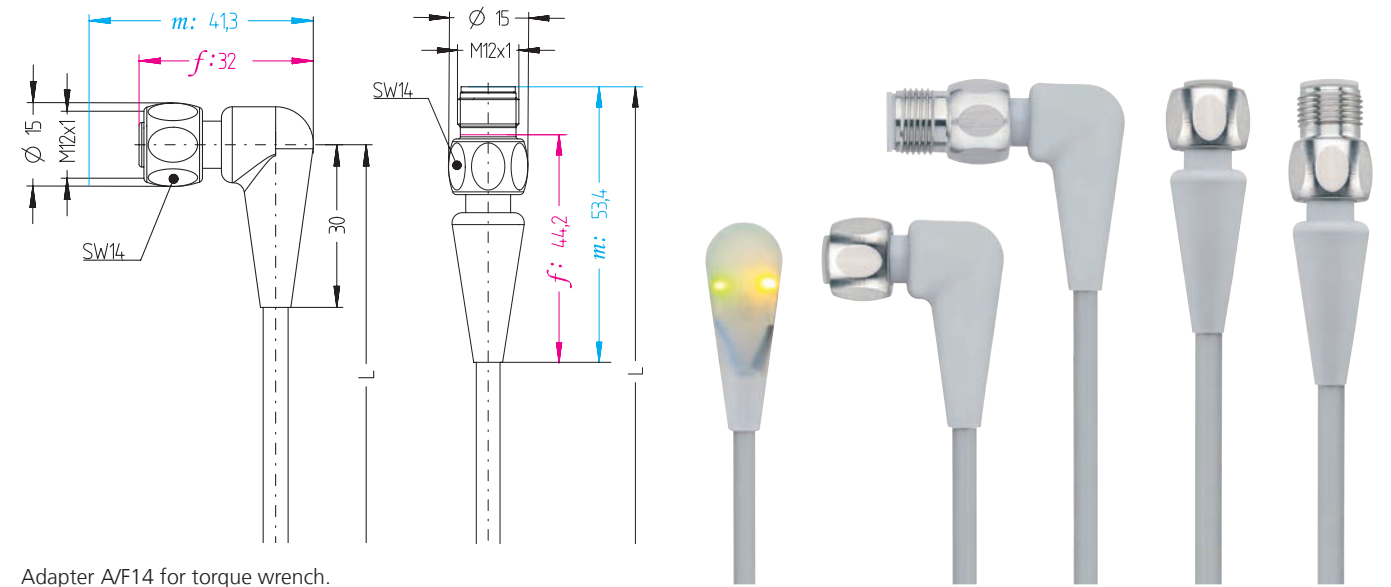


Product line	Version	Cable quality	Pins	Type-designation	Cable length L				
					2m	5m	10m		
FB_M12x1	f   ↑	TPE   S3930	3	FB-WAKH3-L /S3930	8050462	8058555	8058556		
			4	FB-WAKH4-L /S3930	8050464	8058557	8058558		
			5	FB-WAKH4.5-L /S3930	8063882	8063883	8063884		
			f   ↗	TPE   S3930	3	FB-WWAKH3-L /S3930	8050463	8058559	8058560
			4	FB-WWAKH4-L /S3930	8050465	8058561	8058562		
f   ↗   LED2	TPE   S3930	3	FB-WWAKH3P2-L /S3930	8058611	8058612	8058613			
		4	FB-WWAKH4P2-L /S3930	8058614	8058615	8058616			
		5	FB-WWAKH4.5P3-L /S3930	8063802	8063803	8063804			
m   ↑	TPE   S3930	3	FB-WASH3-L /S3930	8050468	8058563	8058564			
		4	FB-WASH4-L /S3930	8050470	8058565	8058566			
		5	FB-WASH4.5-L /S3930	8063888	8063889	8063890			
m   ↗	TPE   S3930	3	FB-WWASH3-L /S3930	8050469	8058567	8058568			
		4	FB-WWASH4-L /S3930	8050471	8058569	8058570			
		5	FB-WWASH4.5-L /S3930	8063891	8063892	8063893			

Other versions and cable-lengths are available upon request.

**Cable quality TPE | S3930**

Flexible PVC-free polypropylene cable (light grey, similar RAL7035) 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. Well adapted for use in food industry, packaging-, bottling plants as well as industrial machinery- and plant construction.

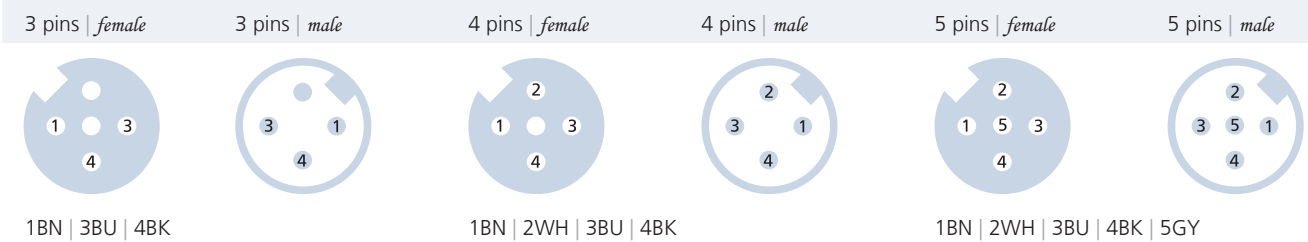


Adapter AVF14 for torque wrench.

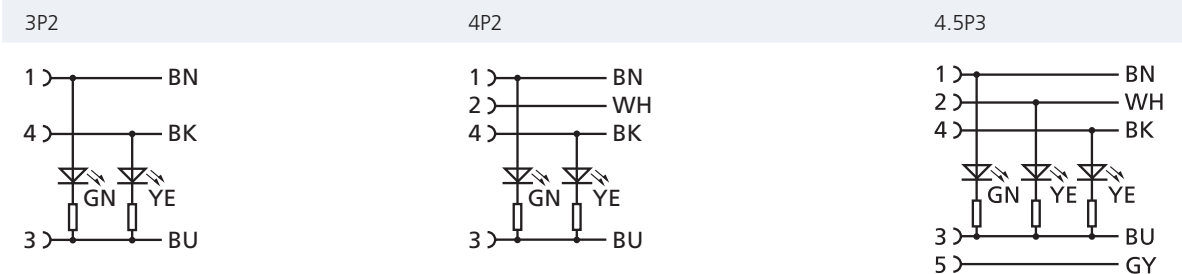
**Food & Beverage hygienic PVC\_free\_ M12x1**

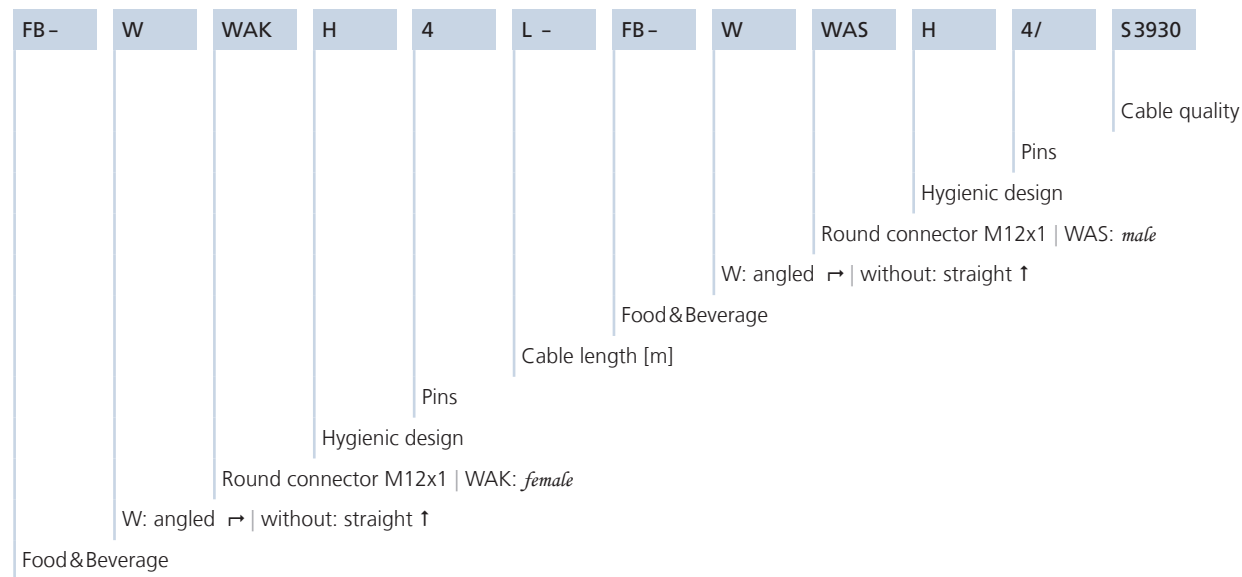
Technical data	Pins	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
Current load [Imax]	LED-Version	24V <sub>DC</sub>
	3, 4, 5	4A
Insulation resistance		≥ 10 <sup>8</sup> Ω
Standards		IEC 61076-2-101
Materials	Grip	PP, GY   LED-version: transparent
	Contact carrier	PP, GY
	Sealing ( <i>female</i> )	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	V4A
Ambient temperature		-40°C...+105°C
Degree of pollution		3
Protection class (installed)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

**Coding A**



**LED-versions**



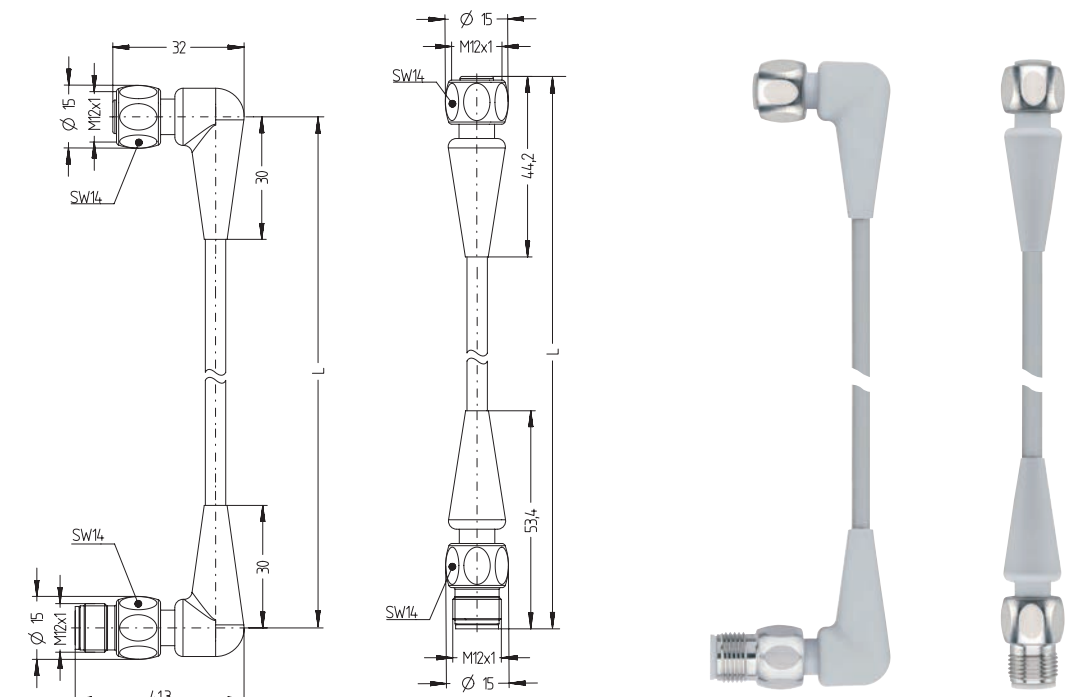


Product line	Version	Cable quality	Pins	Type-designation	Cable length L		
					1m	2m	5m
FB_M12x1	f   ↑ _ m   ↑	TPE   S3930	3	FB-WAKH3-L-FB-WASH3/S3930	8058587	8058588	8058589
			4	FB-WAKH4-L-FB-WASH4/S3930	8058590	8058591	8058592
			5	FB-WAKH4.5-L-FB-WASH4.5/S3930	8063681	8063682	8063683
	f   ↗ _ m   ↗	TPE   S3930	3	FB-WWAKH3-L-FB-WWASH3/S3930	8058593	8058594	8058595
			4	FB-WWAKH4-L-FB-WWASH4/S3930	8058596	8058597	8058598
			5	FB-WWAKH4.5-L-FB-WWASH4.5/S3930	8063814	8063815	8063816

Other versions and cable-lengths are available upon request.

**Cable quality TPE | S3930**

Flexible PVC-free polypropylene cable (light grey, similar RAL7035) 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. Well adapted for use in food industry, packaging-, bottling plants as well as industrial machinery- and plant construction.

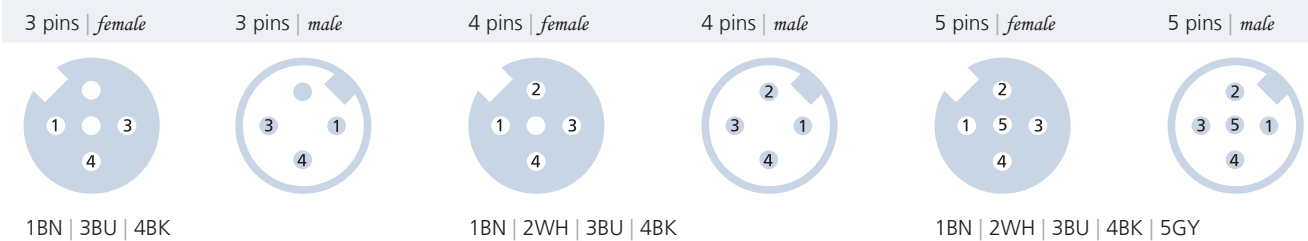


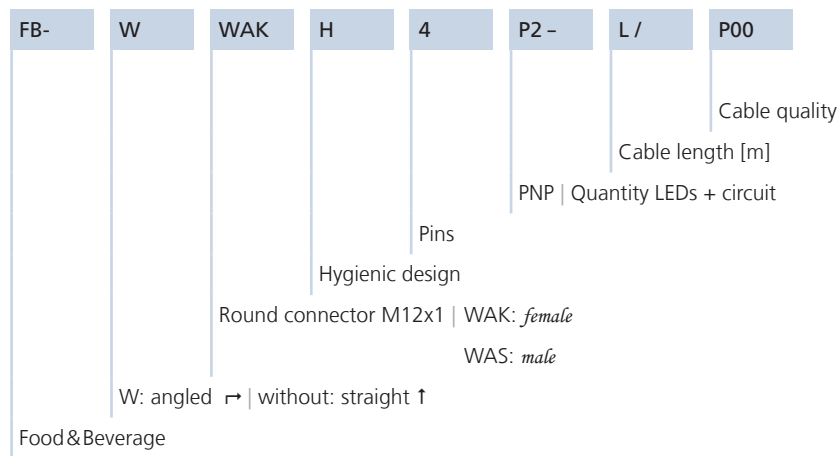
Adapter A/F14 for torque wrench see accessories on page 226.

**Food & Beverage hygienic PVC\_free\_ M12x1 cord sets double ended**

Technical data	Pins	Value
Rated voltage [U <sub>max</sub> ]	3, 4	250V
	5	60V
Current load [I <sub>max</sub> ]	3, 4, 5	4A
Insulation resistance		≥10 <sup>8</sup> Ω
Standards		IEC 61076-2-101
Materials	Grip	PP, GY
	Contact carrier	PP, GY
	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 (installed)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

**Coding A**



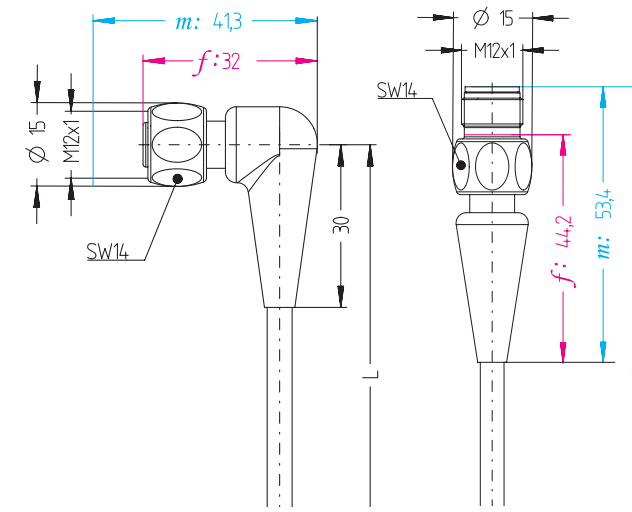


Product line	Version	Cable quality	Pins	Type-designation	Cable length L		
					2m	5m	10m
FB_M12x1	f   ↑	PVC   P00	3	FB-WAKH3-L /P00	8063805	8063806	8063807
			4	FB-WAKH4-L /P00	8063811	8063812	8063813
			5	FB-WAKH4.5-L /P00	8063817	8063818	8063819
			3	FB-WAKH3-L /P01	8063748	8063749	8063752
			4	FB-WAKH4-L /P01	8063724	8063725	8063728
	f   ↗	PVC   P00	3	FB-WWAKH3-L /P00	8063834	8063835	8063836
			4	FB-WWAKH4-L /P00	8063799	8063800	8063801
			5	FB-WWAKH4.5-L /P00	8063823	8063824	8063825
			3	FB-WWAKH3-L /P01	8063703	8063704	8063705
			4	FB-WWAKH4-L /P01	8063672	8063673	8063674
	f   ↗   LED2	PVC   P00	3	FB-WWAKH3P2-L /P00	8063826	8063827	8063828
			4	FB-WWAKH4P2-L /P00	8063787	8063788	8063789
			5	FB-WWAKH4.5P3-L /P00	8063808	8063809	8063810
			3	FB-WWAKH3P2-L /P01	8063692	8063693	8063694
			4	FB-WWAKH4P2-L /P01	8063666	8063667	8063668
m   ↑	PVC   P00	3	FB-WASH3-L /P00	8063843	8063844	8063845	
		4	FB-WASH4-L /P00	8063837	8063838	8063839	
		5	FB-WASH4.5-L /P00	8063840	8063841	8063842	
		3	FB-WASH3-L /P01	8063715	8063716	8063717	
		4	FB-WASH4-L /P01	8063706	8063707	8063708	
m   ↗	PVC   P00	3	FB-WWASH3-L /P00	8063781	8063782	8063783	
		4	FB-WWASH4-L /P00	8063775	8063776	8063777	
		5	FB-WWASH4.5-L /P00	8063675	8063676	8063677	
		3	FB-WWASH3-L /P01	8063663	8063664	8063665	
		4	FB-WWASH4-L /P01	8063655	8063656	8063657	
	PVC   P01	3	FB-WWASH3-L /P01	8063663	8063664	8063665	
		4	FB-WWASH4-L /P01	8063655	8063656	8063657	
			5	FB-WWASH4.5-L /P01	8063660	8063661	8063662

Other versions and cable-lengths are available upon request.

**Cable quality PVC**

Good resistance against acids and lye, limited oil- and chemicals resistance, and restricted abrasion. High flexibility with unstressed movement (conditional drag-chain application possible). e.g. packaging machines as well as assembly- and production lines. Predestined for applications in food- and beverage industry. P01-cables meet the UL and CSA (UL1729/2464; cULus) requirements.



Adapter AVF14 for torque wrench.



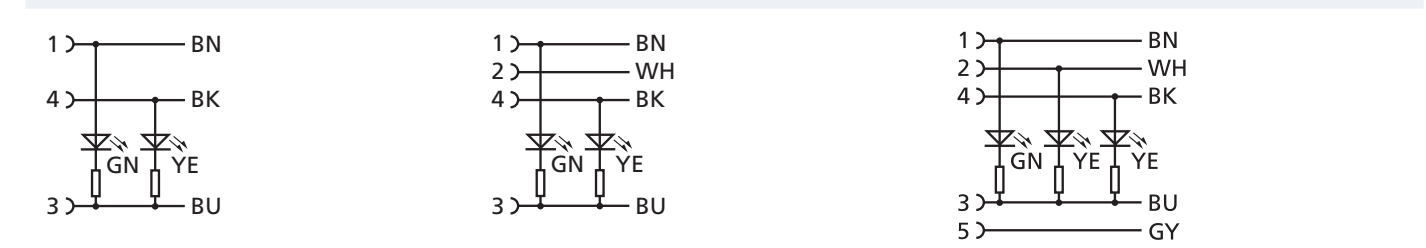
**Food & Beverage hygienic PVC\_ M12x1**

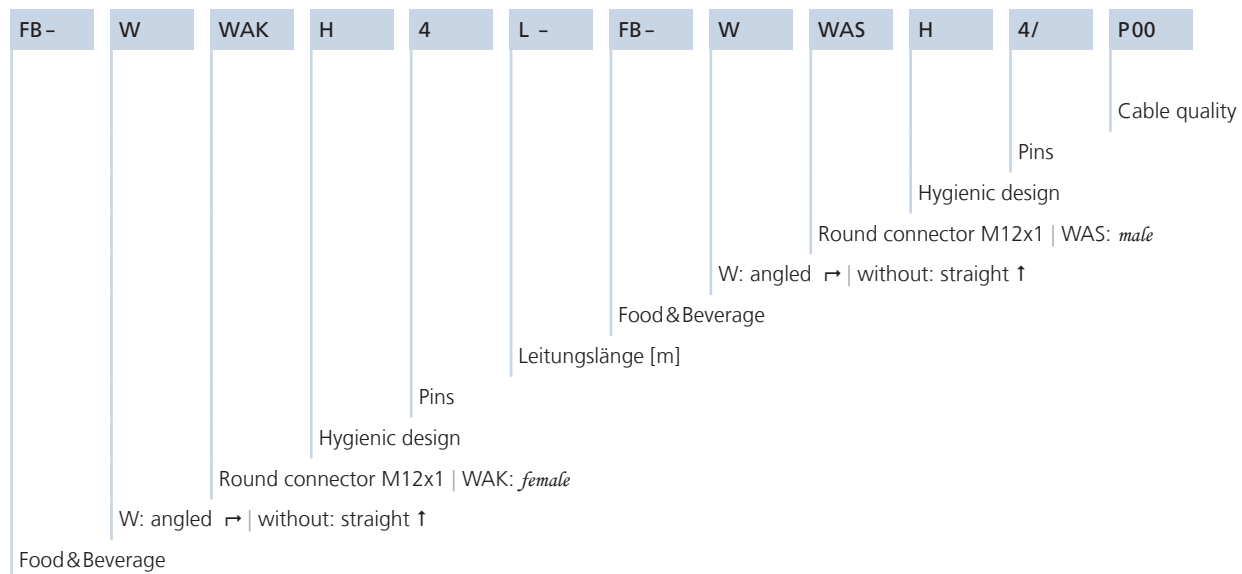
Technical data	Pins	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
	LED-Version	24Vdc
Current load [Imax]	3, 4, 5	4A
Insulation resistance		≥ 10 <sup>8</sup> Ω
Standards		IEC 61076-2-101
Materials	Grip	PP, GY   LED-version: transparent
	Contact carrier	PP, GY
	Sealing (female)	FPM/FKM
	Contacts	CuZn, gold-plated
	Locking mechanism	V4A
Ambient temperature		-40°C...+105°C
Degree of pollution		3
Protection class (installed)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

**Coding A**



**LED-versions**



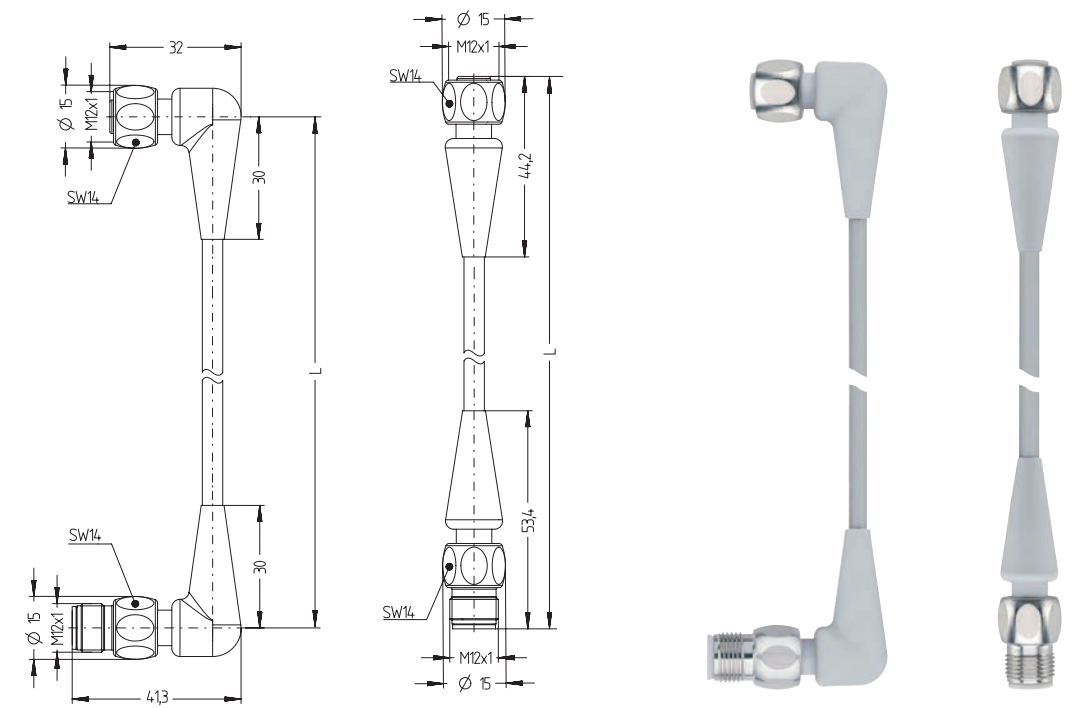


Product line	Version	Cable quality	Pins	Type-designation	Cable length L		
					1m	2m	5m
FB_M12x1	f   ↑ _ m   ↑	PVC   P00	3	FB-WAKH3-L-FB-WASH3/P00	8063852	8063853	8063854
			4	FB-WAKH4-L-FB-WASH4/P00	8063846	8063847	8063848
			5	FB-WAKH4.5-L-FB-WASH4.5/P00	8063849	8063850	8063851
			3	FB-WAKH3-L-FB-WASH3/P01	8063742	8063744	8063747
			4	FB-WAKH4-L-FB-WASH4/P01	8063721	8063722	8063723
	f   ↗ _ m   ↗	PVC   P00	3	FB-WWAKH3-L-FB-WWASH3/P00	8063831	8063832	8063833
			4	FB-WWAKH4-L-FB-WWASH4/P00	8063793	8063794	8063795
			5	FB-WWAKH4.5-L-FB-WWASH4.5/P00	8063820	8063821	8063822
			3	FB-WWAKH3-L-FB-WWASH3/P01	8063697	8063698	8063699
			4	FB-WWAKH4-L-FB-WWASH4/P01	8063669	8063670	8063671
	f   ↗ _ m   ↗	PVC   P01®	3	FB-WWAKH3-L-FB-WWASH3/P01	8063697	8063698	8063699
			4	FB-WWAKH4-L-FB-WWASH4/P01	8063669	8063670	8063671
			5	FB-WWAKH4.5-L-FB-WWASH4.5/P01	8063684	8063685	8063686

Other versions and cable-lengths are available upon request.

**Cable quality PVC**

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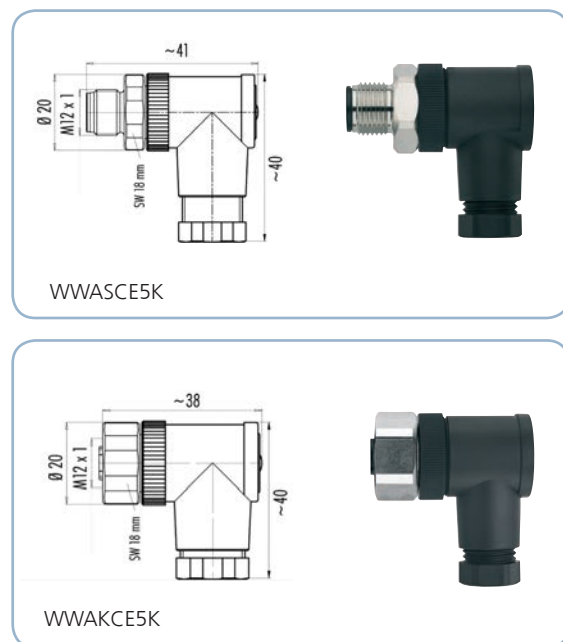
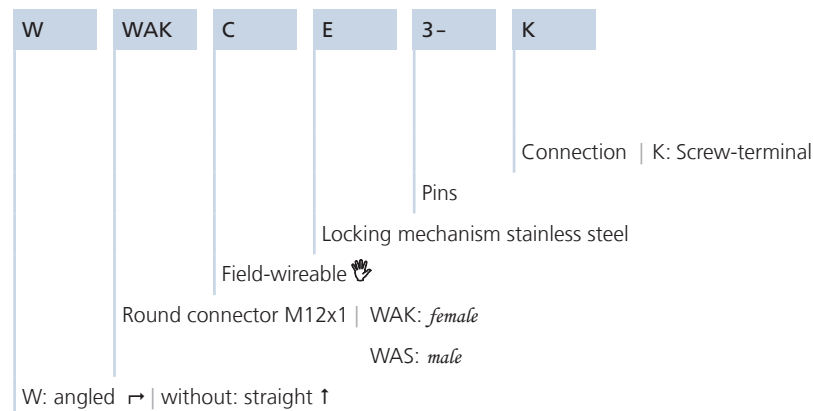


Adapter A/F14 for torque wrench.

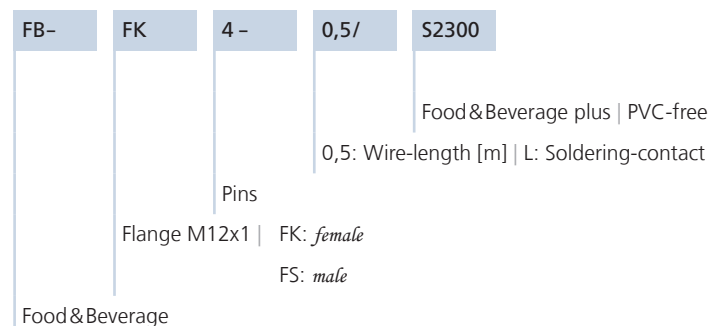
**Food & Beverage hygienic PVC\_ M12x1 cord sets double ended**

Technical data	Pins	Value
Rated voltage [Umax]	3, 4	250V
	5	60V
Current load [Imax]	3, 4, 5	4A
Insulation resistance		≥10 <sup>8</sup> Ω
Standards		IEC 61076-2-101
Materials	Grip	PP, GY   LED-version: PP, transparent
	Contact carrier	PP, GY
	Sealing (female)	FPM/FKM
	Contacts	CuZn, gold-plated
Locking mechanism		V4A
Ambient temperature		-40°C...+105°C
Degree of pollution		3
Protection class (installed)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

Coding A					
3 pins   female	3 pins   male	4 pins   female	4 pins   male	5 pins   female	5 pins   male
1BN   3BU   4BK		1BN   2WH   3BU   4BK		1BN   2WH   3BU   4BK   5GY	

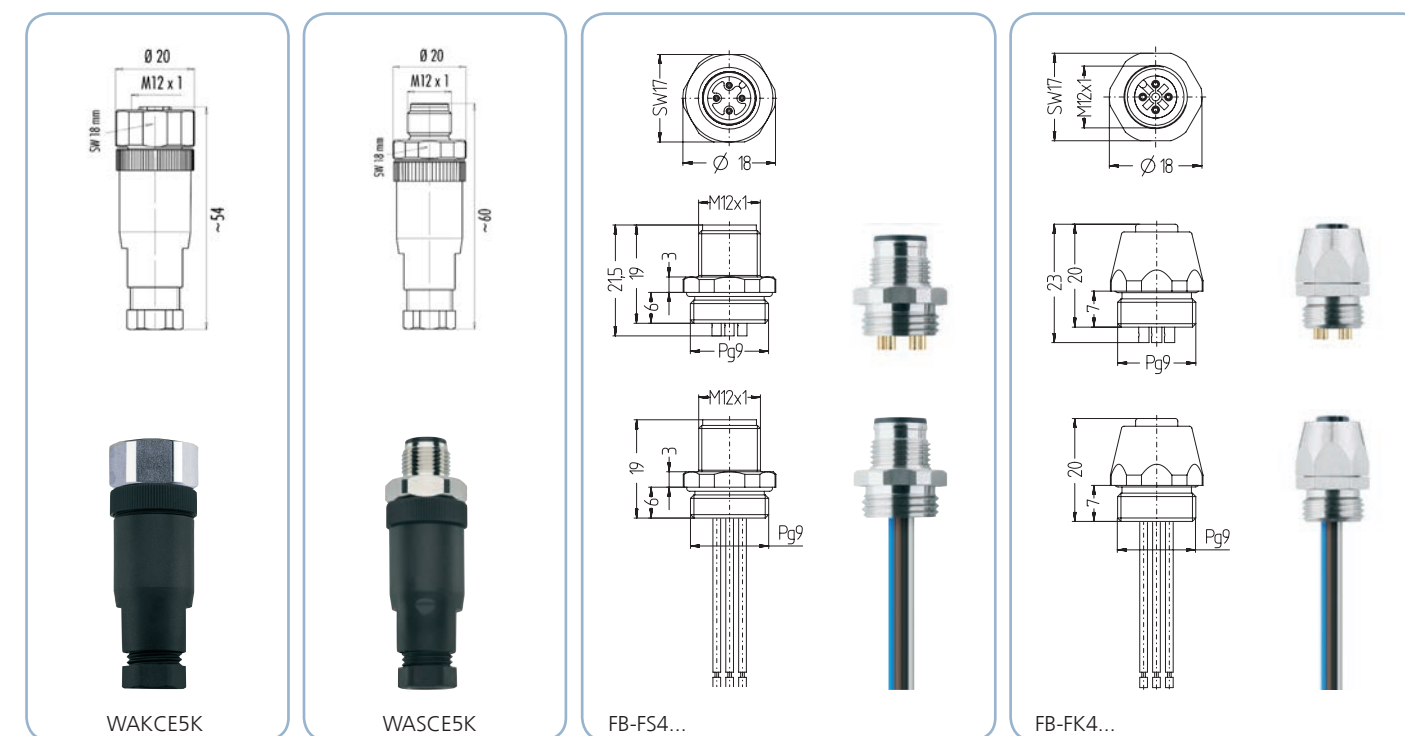
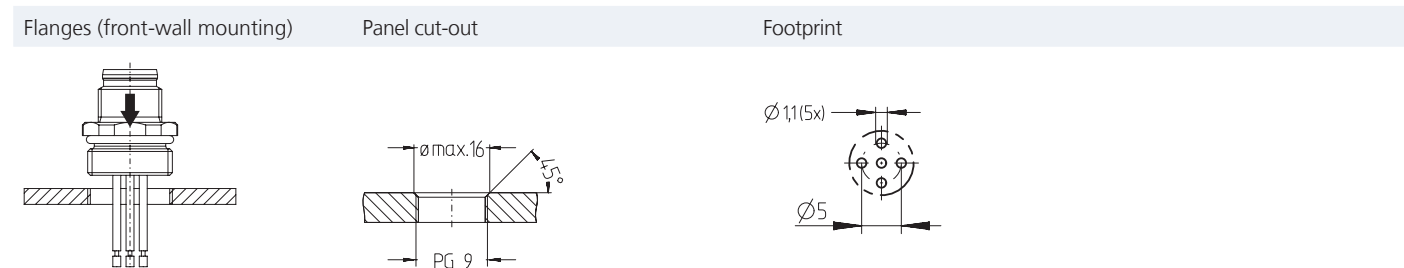


Product line	Version	Connection	Figure	Pins   A-coded	Type-designation	Item-No.
M12x1	Screw-terminal	<i>f</i>   ↑	Fig. 1	5	WAKCE5K	8063393
		<i>f</i>   ↗	Fig.2	5	WWAKCE5K	8063395
		<i>m</i>   ↑	Fig. 3	5	WASCE5K	8063394
		<i>m</i>   ↗	Fig. 4	5	WWASCE5K	8063396



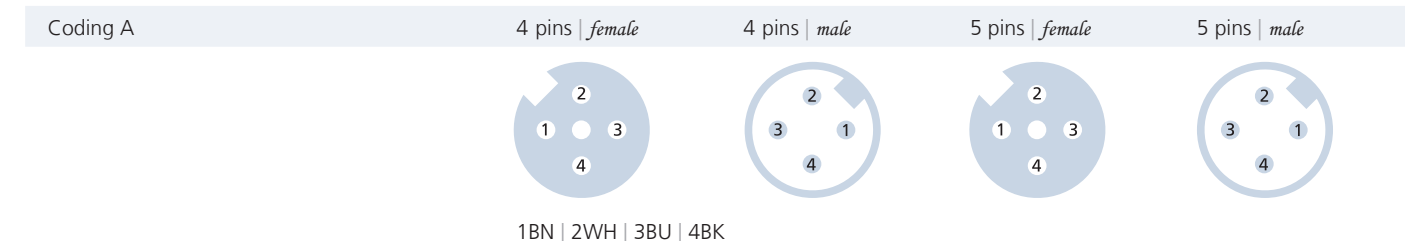
Product line	Version	Pins	Soldering-contact		Wire-contact	
			Type-designation	Item-No.	Type-designation	Item-No.
Front-wall mounting (optional threaded rear)	<i>f</i>   ↑   V4A   Pg9	4	FB-FK4-L/S2300	8033633	FB-FK4-0,5/S2300	8033631
	<i>m</i>   ↑   V4A   Pg9	4	FB-FS4-L/S2300	8033634	FB-FS4-0,5/S2300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

Other versions and wire-lengths are available upon request.

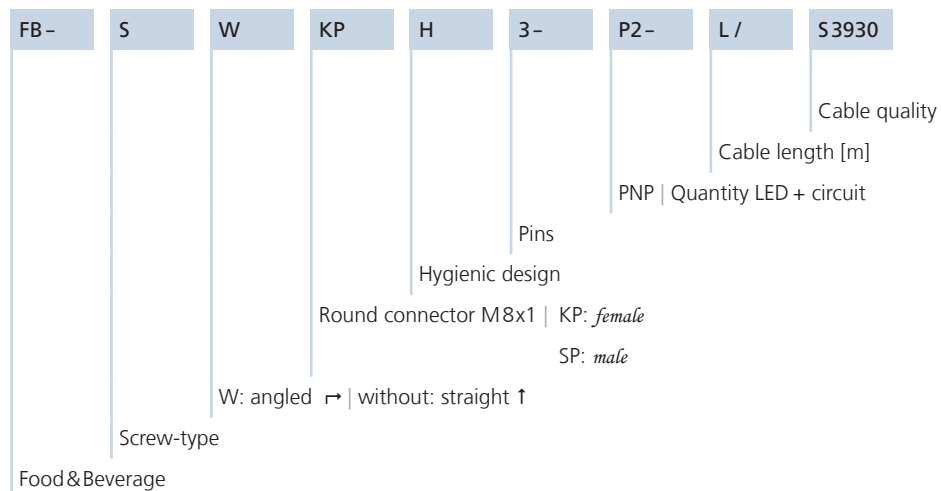


### Food & Beverage hygienic \_ M12x1 field-wireable + flanges

Technical data	Round connectors	Flanges
Rated voltage [U <sub>max</sub> ]	125V	250V
Current load [I <sub>max</sub> ]	4A	4A
Insulation resistance	≥ 10 <sup>8</sup> Ω	≥ 10 <sup>8</sup> Ω
Standards	IEC 61076-2-109	IEC 61076-2-101
Material	Grip: ↑: PA, BK   ↗: PBT, BK	V4A
Flange housing		PP, BK
Contact carrier	PA, BK	PP, BK
Sealing ( <i>female</i> )		FPM/FKM
Contacts	CuZn, gold-plate	CuZn, gold-plate
Sealing (screw in thread)		NBR
Locking mechanism	V4A	
Ambient temperature	-40°C...+85°C	-40°C...+105°C
Degree of pollution	3	3
Protection class (installed)	IP67	IP67
Mechanical life cycle (mating cycles)	>100	>100
Core cross-section/Clamping ability	0.75 mm <sup>2</sup>   AWG18	
External diameter of the cable	Ø 4... 6mm	
Connection	Screw-terminal	

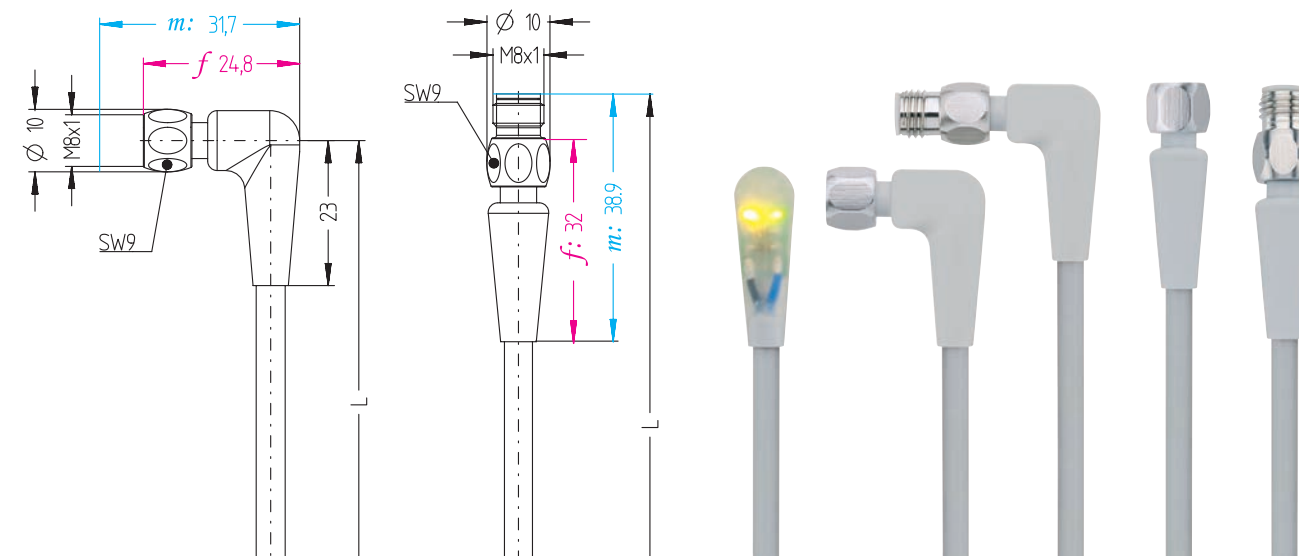






Product line	Version	Cable quality	Pins	Type-designation	Cable length L			
					2m	5m	10m	
FB_M8x1	f   ↑	TPE   S3930	3	FB-SKPH3-L /S3930	8050454	8058571	8058572	
			4	FB-SKPH4-L /S3930	8050455	8058573	8058574	
			3	FB-SKPH3-L /P00	8063690	8063653	8063691	
			4	FB-SKPH4-L /P00	8063652	8063695	8063696	
		PVC   P01 <sup>®</sup>	3	FB-SKPH3-L /P01	8063700	8063701	8063702	
			4	FB-SKPH4-L /P01	8063712	8063713	8063714	
		f   ↗	TPE   S3930	3	FB-SWKPH3-L /S3930	8050456	8058575	8058576
				4	FB-SWKPH4-L /S3930	8050457	8058577	8058578
			PVC   P00	3	FB-SWKPH3-L /P00	8063718	8063719	8063720
				4	FB-SWKPH4-L /P00	8063726	8063727	8063729
			PVC   P01 <sup>®</sup>	3	FB-SWKPH3-L /P01	8063730	8063731	8063732
				4	FB-SWKPH4-L /P01	8063736	8063737	8063738
	f   ↗   LED2	TPE   S3930	3	FB-SWKPH3P2-L /S3930	8058619	8058620	8058621	
			4	FB-SWKPH4P2-L /S3930	8058622	8058623	8058624	
		PVC   P00	3	FB-SWKPH3P2-L /P00	8063743	8063745	8063746	
			4	FB-SWKPH4P2-L /P00	8063750	8063751	8063753	
		PVC   P01 <sup>®</sup>	3	FB-SWKPH3P2-L /P01	8063761	8063763	8063765	
			4	FB-SWKPH4P2-L /P01	8063760	8063762	8063764	
	m   ↑	TPE   S3930	3	FB-SSPH3-L /S3930	8050458	8058579	8058580	
			4	FB-SSPH4-L /S3930	8050459	8058581	8058582	
		PVC   P00	3	FB-SSPH3-L /P00	8063769	8063770	8063771	
			4	FB-SSPH4-L /P00	8063772	8063773	8063774	
		PVC   P01 <sup>®</sup>	3	FB-SSPH3-L /P01	8063778	8063779	8063780	
			4	FB-SSPH4-L /P01	8063784	8063785	8063786	
m   ↗	TPE   S3930	3	FB-SWSPH3-L /S3930	8050460	8058583	8058584		
		4	FB-SWSPH4-L /S3930	8050461	8058585	8058586		
	PVC   P00	3	FB-SWSPH3-L /P00	8063790	8063791	8063792		
		4	FB-SWSPH4-L /P00	8063796	8063797	8063798		
	PVC   P01 <sup>®</sup>	3	FB-SWSPH3-L /P01	8063757	8063758	8063759		
		4	FB-SWSPH4-L /P01	8063754	8063755	8063756		

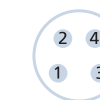
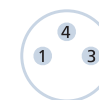
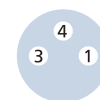
Other versions, cable-lengths or cable terminals converted with wire-end sleeves are available upon request



### Food & Beverage hygienic \_ M8x1

Technical data	Pins	Value
Rated voltage [U <sub>max</sub> ]	3	60V
	4	30V
Current load [I <sub>max</sub> ]	LED-version	24V <sub>dc</sub>
	3, 4	4A
Insulation resistance	LED-version	3A
		≥ 10 <sup>8</sup> Ω
Standards		IEC 61076-2-104
Materials	Grip	PP, GY   LED-version: transparent
	Contact carrier	PP, GY
	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 (installed)		IP67, IP69K
Mechanical life cycle		>100 mating cycles

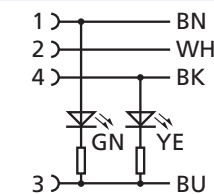
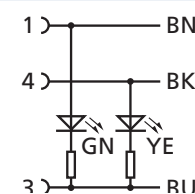
Pinning			
3 pins   <i>female</i>	3 pins   <i>male</i>	4 pins   <i>female</i>	4 pins   <i>male</i>

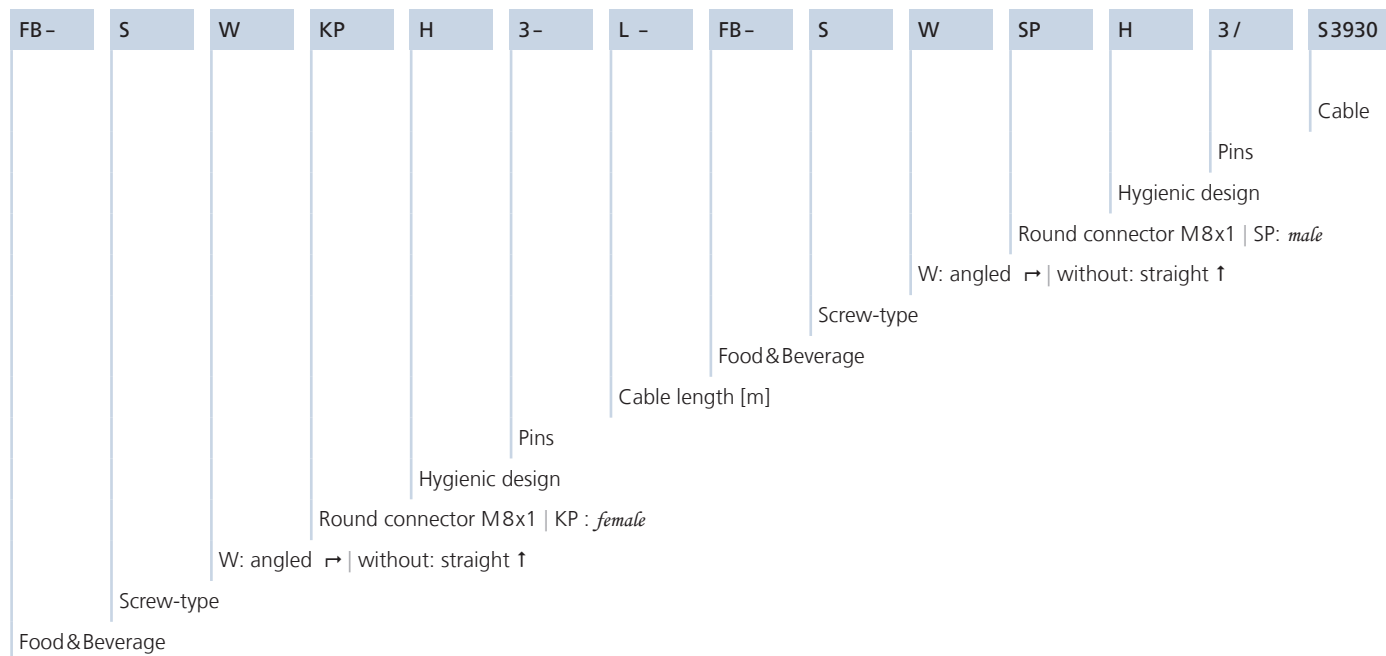


1BN | 3BU | 4BK

1BN | 2WH | 3BU | 4BK

LED-versions	
3P2	4P2





Product line	Version	Cable quality	Pins	Type-designation	1m	2m	5m
FB_M8x1	f   ↑__m   ↑	TPE   S3930	3	FB-SKPH3-L-FB-SSPH3/S3930	8058599	8058600	8058601
			4	FB-SKPH4-L-FB-SSPH4/S3930	8058602	8058603	8058604
		PVC   P00	3	FB-SKPH3-L-FB-SSPH3/P00	8063875	8063876	8063877
			4	FB-SKPH4-L-FB-SSPH4/P00	8063861	8063862	8063863
		PVC   P01 <sup>®</sup>	3	FB-SKPH3-L-FB-SSPH3/P01	8063864	8063865	8063866
			4	FB-SKPH4-L-FB-SSPH4/P01	8063867	8063868	8063869
	f   ↗__m   ↗	TPE   S3930	3	FB-SWKPH3-L-FB-SWSPH3/S3930	8058605	8058606	8058607
			4	FB-SWKPH4-L-FB-SWSPH4/S3930	8058608	8058609	8058610
		PVC   P00	3	FB-SWKPH3-L-FB-SWSPH3/P00	8063858	8063859	8063860
			4	FB-SWKPH4-L-FB-SWSPH4/P00	8063855	8063856	8063857
		PVC   P01 <sup>®</sup>	3	FB-SWKPH3-L-FB-SWSPH3/P01	8063871	8063872	8063873
			4	FB-SWKPH4-L-FB-SWSPH4/P01	8063766	8063767	8063768

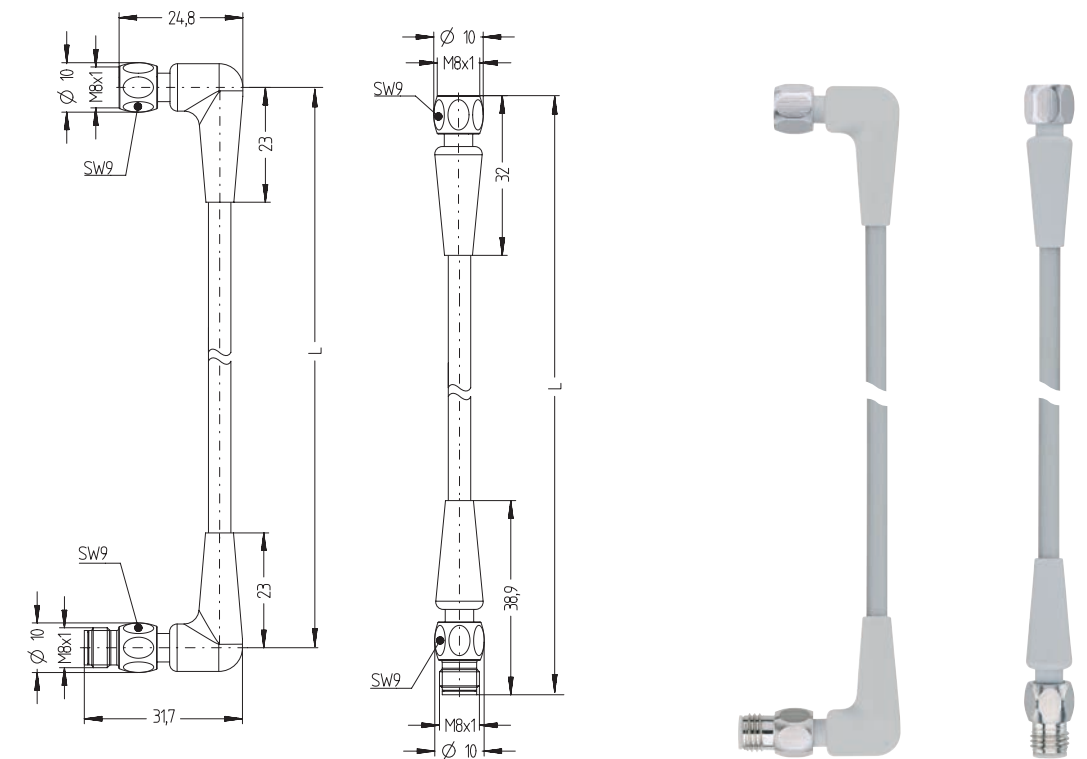
Other versions and cable-lengths are available upon request.

### Cable quality TPE | S3930

Flexible PVC-free polypropylene cable (light grey, similar RAL7035) 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. Well adapted for use in food industry, packaging-, bottling plants as well as industrial machinery- and plant construction.

### Cable quality PVC | P00

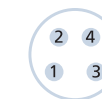
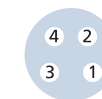
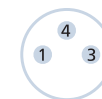
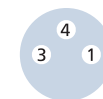
Good resistance against acids and lye, limited oil- and chemicals resistance, and restricted abrasion. High flexibility with unstressed movement (conditional drag-chain application possible). e.g. packaging machines as well as assembly- and production lines. Predestined for applications in food- and beverage industry.



### Food & Beverage hygienic\_ M8x1 cord sets double ended

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

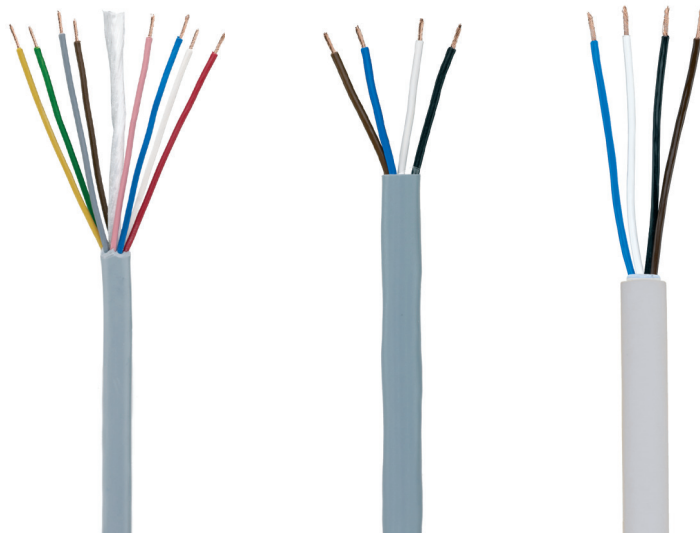
Pinning			
3 pins   female	3 pins   male	4 pins   female	4 pins   male



1BN | 3BU | 4BK

1BN | 2WH | 3BU | 4BK





	PVC P00	PVC P01 <sup>®</sup>	TPE S3930 F&B
Machinery-, equipment manufacturing	★★★★	★★★★	★
Automotive industry	★★	★★	★★★★
Robotics	★	★	★★★★
Food and beverage industry	★★★★	★★★★	★★★★
Packaging and filling systems	★★★★	★★★★	★★★★
Building installations	★★	★★	★★
Wind power plants	★★	★★	★★
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	★★	★★	★★★★
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	optional
ROHS	✓	✓	✓
UL and/or CSA		✓	
GOST	✓	✓	✓
ECOLAB	✓		✓

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