



M8 and M12 cabling for food processing applications

Reliable cabling in environments with demanding hygiene requirements

With respect to degree of protection, corrosion resistance and hygiene, the highest demands are made on components and materials and hygiene in machines and systems in the food processing industry.

Our product range for the food processing industry was specifically developed to provide a complete solution to meet these requirements.

The special hygienic design of the plug-in connectors prevents dirt pockets and is particularly easy to clean. The use of stainless steel ensures comprehensive protection against corrosion and the bright coating of the cables simplifies detection and removal of contamination.



The corrosion-resistant 1.4404 stainless steel distributor boxes in Washdown design are customized for the special requirements of the food processing industry. They were tested for use in the spray zone.

Complete product range

In addition to cables and distributor boxes, pre-assembled plug-in connectors and device plug-in connectors for the food processing industry round off the range. Pure 1.4404 stainless steel shielded plug-in connectors are also available for particularly exposed areas.





Features Hygienic Design

- Smooth surface impossible for residual food material to accumulate
- Corrosion-resistant
- Easy to clean
- IP69K
- No dirt pockets

Washdown design

The Washdown Design M8 and M12 plug-in connectors are equipped with a plastic knurl and have a particularly smooth and easy-to-clean surface. The plastic materials selected and the cables are optimally tailored to suit the special requirements in spray areas. 4- and 5-pos. variants are available in different versions.

Hygienic design

The 1.4404 stainless steel hygienic design M12 plug-in connectors have a very smooth surface and are intended for use in areas where contact is made with the product. They therefore make it impossible for residual food material to accumulate. Shielded versions are also available for areas subject to high levels of electromagnetic interference.

Technical data

	M8 cabling	M12 cabling	M12 cabling
	Washdown design (3-pos./4-pos.)	Hygienic design (4-pos./5-pos.)	Washdown design (4-pos./5-pos.)
Nominal current [A]	4	4	4
Rated voltage [V]	60/30/24*	250/60/24* ²	250/60/24* ³
Contact material	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au
Grip body material	PP	PP	PP
Material, knurls	PP	1.4404 stainless steel	PP
Circular connector according to	IEC 61076-2-104	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K
Temperature range [°C]	-40 ... 105	-40 ... 105	-40 ... 105

* for 3-pos./4-pos./3-pos. and 4-pos with LED

*² for 4-pos./5-pos./4-pos. and 5-pos. with LED

*³ for 4-pos./5-pos./4-pos. and 5-pos. with LED

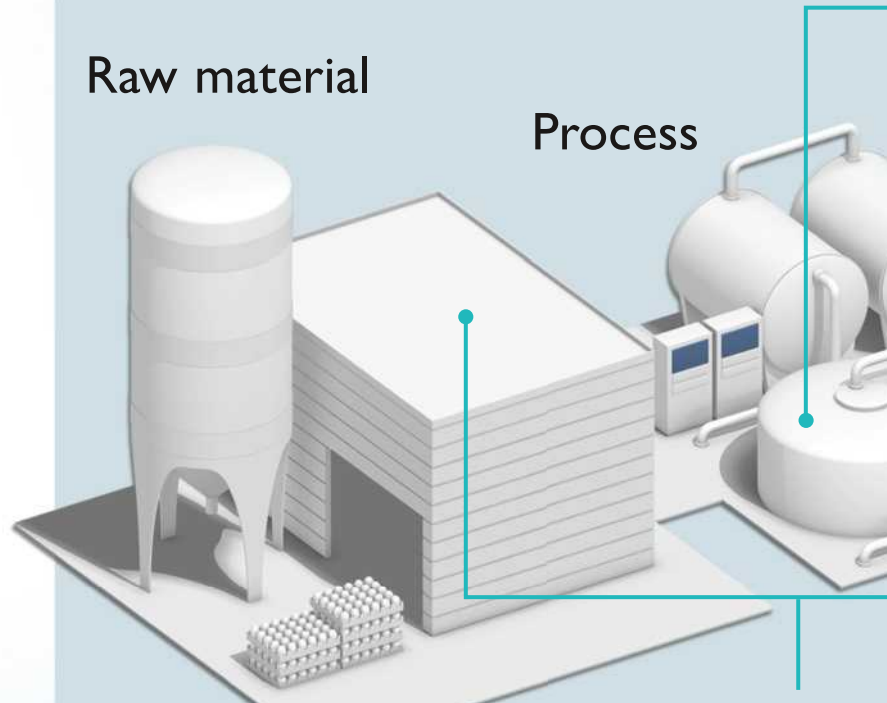
Always a clean concept

In general, food and its packaging may not become contaminated by contact with system and machine parts. Three zones are differentiated in production: product contact zone, spray zone and product-free zone. Each zone imposes specific requirements on the sensors and actuators – and on the respective cables and plug-in connectors.

Use our extensive product portfolio and select the matching solution for your application.

Raw material

Process



Spray zone



Conveyor belt in the spray zone

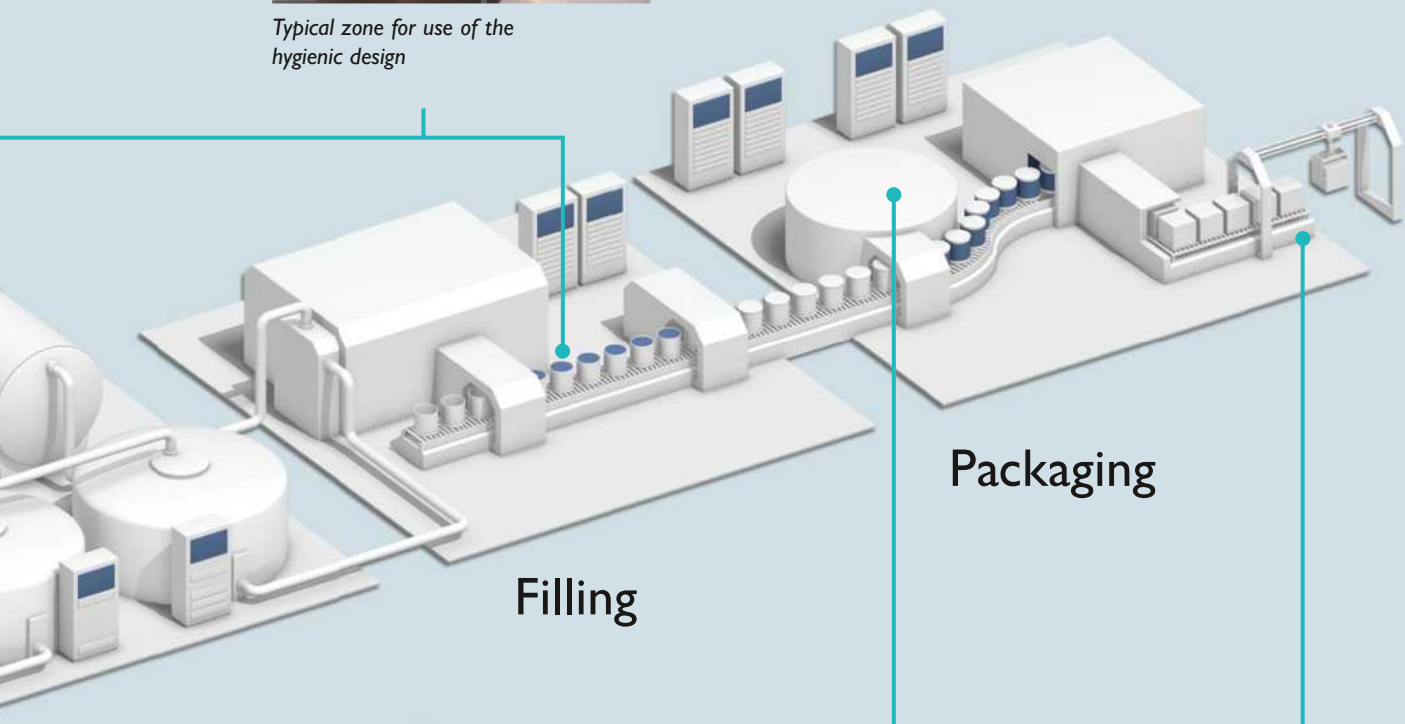
In the spray zone, components can come into contact with food. In contrast to the product contact zone, the food does not return back to the process after contact with the components. The plug-in connectors offered by Phoenix Contact in washdown design were specifically developed for the spray zone application. Smooth contours at the grip minimize the adhesion of food particles at the plug-in connector.

Product contact zone



In this zone, every component of a system can come into contact with the food to be processed, and the food itself can then reach the processing again. The hygienic requirements are particularly high in this zone. Plug-in connectors and other components may not contain any dirt pockets here. We developed and implemented the hygienic design specifically for use in this zone following the EHEDG guidelines in design M12.

Typical zone for use of the hygienic design



Product-free zone



No special hygienic requirements are placed on the components used in storage and packaging

In this zone, the products are generally already packaged and no longer exposed to direct contact with system components. In this case, the requirements are comparable with those in the classic industrial environment. Cleaning the packaging systems does not require any aggressive cleaning agents and is generally not done with high-pressure equipment. Our standard program for sensor/actuator cabling is suitable for use in this zone.

Product program for the food industry

In addition to the assembled cables in hygienic and washdown design, the program also features preassembled plug-in connectors, panel feed-throughs and passive distributor boxes in washdown design.

The entire plug-in connector family was designed for the cleaning processes in these applications and is resistant to all commercially available cleaning agents.



Products, system solutions and services for adhering to high quality and hygiene standards of food, beverages and buildings for the safety of users and their customers.

All materials comply with the Diversey guidelines and have been tested in accordance with Diverfoam SMS HD, Divosan Hypochlorite, Divosan forte, Oxofoam, Acifoam.



European Hygienic Engineering & Design Group; design criteria for hygienic design of machines, apparatus and components.

All electrical components were developed following the EHEDG guidelines.

IP69K

Guaranteed sealing of the plug-in connectors and boxes for applications with steam jets, even after repeated temperature shocks.

All components are IP69K tested.



The Food and Drug Administration is a US regulatory authority for food and pharmaceuticals. It issues approvals for products and materials that are used in the food and pharmaceutical industries.






All materials of the electrical components meet the FDA guidelines.



Material resistance to aggressive cleaning agents and disinfectants.





All materials of the electrical components were tested against P3-topactive DES, P3-topax 19, 56, 66 and 91.

Distributor box, washdown design

	Stainless steel distributor box, with 5 m master cable	1555541
	Stainless steel distributor box, with 10 m master cable	1555554
	M12 locking screw made of stainless steel	1555538
	Torque screwdriver	1208429
	SAC nut	1212513





Front/screw mounting			Rear/screw mounting	
4-pos., A-coded	5-pos., A-coded	8-pos., A-coded	5-pos., A-coded	8-pos., A-coded









Flush-type plug-in connectors, washdown design

	with TPE litz wires	Socket	1555448	1699863	1554607	1554717	1554720
		Pin	1554555	1554568	1554571	1554681	1554694
	with TPE litz wires, can be positioned	Socket	1554649	1554652	1554665		
		Pin	1554610	1554623	1554636		
	with TPE litz wires, M20 x 1.5 thread	Socket		1452071	1452110		
		Pin		1452068	1452107		
	with straight solder connection	Socket				1554733	1529797
		Pin				1554746	1529807

Unshielded		Shielded	
4-pos., A-coded	5-pos., A-coded	5-pos., A-coded	5-pos., B-coded


Plug-in connectors, washdown design

	Pg7 screw connection	Socket, angled	1553284	1553297		
		Pin, angled	1553200	1553213		
		Socket, straight	1553242	1553255		
		Pin, straight	1553161	1553187		
	Pg9 screw connection	Socket, angled		1553307		
		Pin, angled	1553226	1553239		
		Socket, straight	1553268	1553271		
		Pin, straight	1553174	1553190		
	Cable diameter 3 mm – 5 mm	Socket, straight			1440038	
		Pin, straight			1440012	
	Cable diameter 5 mm – 8 mm	Socket, straight			1440041	1440135
		Pin, straight			1440025	1440148

	Design	0.3 m		0.6 m		1.5 m		3 m		5 m		10 m	
		3-pos.	4-pos.	3-pos.	4-pos.	3-pos.	4-pos.	3-pos.	4-pos.	3-pos.	4-pos.	3-pos.	4-pos.
Assembled cables, M8													
 Pin, straight	Washdown					1406469	1406835	1406470	1406837	1406471	1406839	1406472	1406840
 Pin, angled	Washdown					1406473	1406841	1406474	1406843	1406475	1406844	1406476	1406845
 Socket, straight	Washdown					1406477	1406846	1406478	1406847	1406479	1406848	1406480	1406849
 Socket, angled	Washdown					1406481	1406850	1406482	1406851	1406484	1406852	1406485	1406853
 Socket, angled with LEDs	Washdown					1406486	1406854	1406487	1406854	1406488	1406856	1406489	1406857
 Pin, straight, to straight socket	Washdown	1406490	1406858	1406491	1406859	1406492	1406860	1406493	1406861				
 Pin, straight, to angled socket	Washdown	1406494	1406862	1406495	1406863	1406496	1406864	1406497	1406865				
 Pin, straight, to angled socket with LEDs	Washdown	1406498	1406866	1406499	1406867	1406500	1406868	1406524	1406869				


Design	0.3 m		0.6 m		1.5 m		3 m		5 m		10 m	
	4-pos.	5-pos.	4-pos.	5-pos.	4-pos.	5-pos.	4-pos.	5-pos.	4-pos.	5-pos.	4-pos.	5-pos.

Assembled cables, M12

 <p>Pin</p>	Washdown					1404002	1404075	1404003	1404076	1404004	1404077	1404005	1404078
	Hygienic					1403947	1404039	1403948	1404041	1403949	1404042	1403951	1404043
	Hygienic, shielded					1403981		1403982		1403983		1403984	
 <p>Pin, angled</p>	Washdown					1404006	1404079	1404007	1404080	1404008	1404081	1404009	1404082
	Hygienic					1403952	1404044	1403953	1404046	1403954	1404047	1403955	1404048
 <p>Socket, straight</p>	Washdown					1404010	1404083	1404011	1404084	1404012	1404085	1404013	1404086
	Hygienic					1403956	1404049	1403957	1404050	1403958	1404051	1403959	1404052
	Hygienic, shielded					1403985		1403986		1403987		1403988	
 <p>Socket, angled</p>	Washdown					1404014	1404088	1404015	1404089	1404017	1404091	1404018	1404092
	Hygienic					1403960	1404053	1403961	1404054	1403962	1404055	1403963	1404056
 <p>Socket, angled with LEDs</p>	Washdown					1404019	1404093	1404020	1404094	1404021	1404095	1404022	1404096
	Hygienic					1403964	1404057	1403965	1404059	1403966	1404060	1403967	1404062
 <p>Pin, straight, to straight socket</p>	Washdown	1404023	1404097	1404023	1404098	1404025	1404099	1404026	1404101				
	Hygienic	1403968	1404063	1403969	1404064	1403970	1404065	1403971	1404066				
	Hygienic, shielded	1403990		1403991		1403992		1403993					
 <p>Pin, straight, to angled socket</p>	Washdown	1404027	1404102	1404028	1404103	1404030	1404104	1404031	1404105				
	Hygienic	1403972	1404067	1403973	1404068	1403974	1404069	1403975	1404070				
 <p>Pin, straight, to angled socket with LEDs</p>	Washdown	1404033	1404106	1404034	1404107	1404035	1404108	1404036	1404109				
	Hygienic	1403976	1404071	1403977	1404072	1403978	1404073	1403979	1404550				


Durable O-ring for sealing free-hanging M12 connections according to the hygienic design concept.

1405608


		ROLL	ROLL X-1
THERMOMARK, thermal transfer printer for material off the roll, 300 dpi			
	Incl. European power cable, US power cable, USB cable, DVD with CLIP PROJECT ADVANCED, CD with user manual in all languages/driver/firmware, printed DIN A5 user manual German/English, 1 EML label roll (20x8) with 1000 labels, 1 ink ribbon (50 m)	5146477	5146723

Conductor diameter [mm]	Lettering field size [mm]	Markers per roll	Type	WH	YE
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Standard roll, multi-line version – marking with THERMOMARK ROLL and THERMOMARK ROLL X-1

	< 3	13x10	5000	WML 3 (13x10) R	0800073	
	< 5	25x10	3000	WML 5 (25x10) R	0817523	0830673
	< 6	13x13	7000	WML 6 (13x13) R	0816252	0830674
	< 7.5	13x13	4000	WML 7,5 (13x13) R	0800074	
	< 7.5	17x9	1500	WML 7,5 (17x9) R	0828444	
	< 7.5	25x13	2100	WML 7,5 (25x13) R	0800075	
	< 12	25x19	1000	WML 12 (25x19) R	0800076	
	< 14	25x19	1500	WML 14 (25x19) R	0817536	0817549
	< 14	38x19	1000	WML 14 (38x19) R	0817552	0830675
	< 18	12x12	2500	WML 18 (12x12) R	0817507	
	< 20	31x25	500	WML 20 (31x25) R	0828457	
	< 22	25x25	900	WML 22 (25x25) R	0800078	
	< 36	25x38	500	WML 36 (25x38) R	0817510	
	< 46	25x38	250	WML 46 (25x38) R	0800067	


Large roll, multi-line version – marking with THERMOMARK ROLL X-1 or THERMOMARK ROLL with external media hub

	< 5	25x10	10000	WML 5 (25x10) RL	0830676	
	< 6	13x13	15000	WML 6 (13x13) RL	0830677	
	< 14	25x19	5000	WML 14 (25x19) RL	0830678	
	< 14	38x19	3000	WML 14 (38x19) RL	0830679	

Steel cable markers, rust-proof, anti-magnetic, label size: 89 x 19 mm, silver

	65x19			KMV	0806644	
	65x19			KMV CUS	0828493	

Steel cable markers, rust-proof, anti-magnetic, label size: 44 x 9.6 mm, silver

	23x9			KMV 44x9.6	0812007	
	23x9			KMV 44x9.6 CUS	0828494	

	Dimensions [mm]	Bundle diameter [mm]	Minimum tensile strength [N]	Type	Order No.
Stainless steel cable binders, AISI 316, 1.4301 (V2A), -80... 538 °C					
	4.6 x 150	30	890	WTS-STEEL S 4,6 x 150	3240807
	4.6 x 201	50	890	WTS-STEEL S 4,6 x 201	3240808
	4.6 x 259	69	890	WTS-STEEL S 4,6 x 259	3240809
	4.6 x 360	102	890	WTS-STEEL S 4,6 x 360	3240810
	4.6 x 520	152	890	WTS-STEEL S 4,6 x 520	3240811
	4.6 x 679	203	890	WTS-STEEL S 4,6 x 679	3240812
	4.6 x 838	254	890	WTS-STEEL S 4,6 x 838	3240723
	4.6 x 1067	305	890	WTS-STEEL S 4,6 x 1067	3240805
	7.9 x 259	69	1335	WTS-STEEL S 7,9 x 259	3240814
	7.9 x 360	102	1335	WTS-STEEL S 7,9 x 360	3240815
	7.9 x 520	152	1335	WTS-STEEL S 7,9 x 520	3240816
	7.9 x 679	203	1335	WTS-STEEL S 7,9 x 679	3240817
	7.9 x 838	254	1335	WTS-STEEL S 7,9 x 838	3240725
	7.9 x 1067	305	1335	WTS-STEEL S 7,9 x 1067	3240813
Stainless steel cable binders, AISI 316, 1.4401 (V4A), -80... 538 °C					
	4.6 x 150	30	890	WTS-STEEL SH 4,6 x 150	3240820
	4.6 x 201	50	890	WTS-STEEL SH 4,6 x 201	3240821
	4.6 x 259	69	890	WTS-STEEL SH 4,6 x 259	3240822
	4.6 x 360	102	890	WTS-STEEL SH 4,6 x 360	3240823
	4.6 x 520	152	890	WTS-STEEL SH 4,6 x 520	3240824
	4.6 x 679	203	890	WTS-STEEL SH 4,6 x 679	3240825
	4.6 x 838	254	890	WTS-STEEL SH 4,6 x 838	3240727
	4.6 x 1067	305	890	WTS-STEEL SH 4,6 x 1067	3240818
	7.9 x 259	69	1335	WTS-STEEL SH 7,9 x 259	3240827
	7.9 x 360	102	1335	WTS-STEEL SH 7,9 x 360	3240828
	7.9 x 520	152	1335	WTS-STEEL SH 7,9 x 520	3240829
	7.9 x 679	203	1335	WTS-STEEL SH 7,9 x 679	3240830
	7.9 x 838	254	1335	WTS-STEEL SH 7,9 x 838	3240766
	7.9 x 1067	305	1335	WTS-STEEL SH 7,9 x 1067	3240826
Detectable cable binders, PA 6.6, silicon and halogen free, -40... 85 °C					
	2.5 x 98	1 - 21	80	WT-ID HF 2,5x98 BU	3240794
	3.5 x 140	2 - 35	130	WT-ID HF 3,5x140 BU	3240795
	3.5 x 200	3 - 50	130	WT-ID HF 3,5x200 BU	3240796
	4.5 x 200	3 - 50	220	WT-ID HF 4,5x200 BU	3240797
	4.5 x 290	3.5 - 79	220	WT-ID HF 4,5x290 BU	3240798
	7.5 x 365	8 - 100	540	WT-ID HF 7,5x365 BU	3240800



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