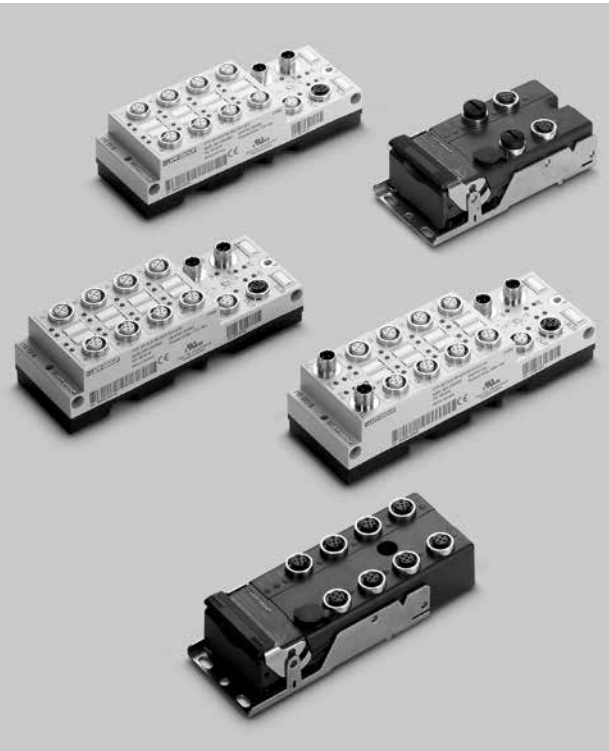


The complete range



Sensor/Actuator boxes

Sensor/actuator boxes with the standardized connection technology provide connections to all commercially available sensors and -actuators and are the solution for decentralizing small numbers of I/O's. Sensor/actuator boxes can be connected to the Profibus, DeviceNet™ and CANopen fieldbus systems. Regardless of -whether you are installing them

on profiles, on flat surfaces or under rough conditions – the assembly concept ensures flexibility and reduces the installation costs. The devices enable assembly in two directions and are thus suitable for every application. The arrangement of connectors minimizes the installation time even under rough conditions.

Sensor/Actuator cables

A comprehensive range of preassembled conductors with M8-, M12- and valve-connectors for rapid wiring of sensors and actuators in the field are available. Sensor/actuator cables with LEDs

can be used for simplified control of signal status. Shielded wiring types are also available for those applications with higher EMV capability.

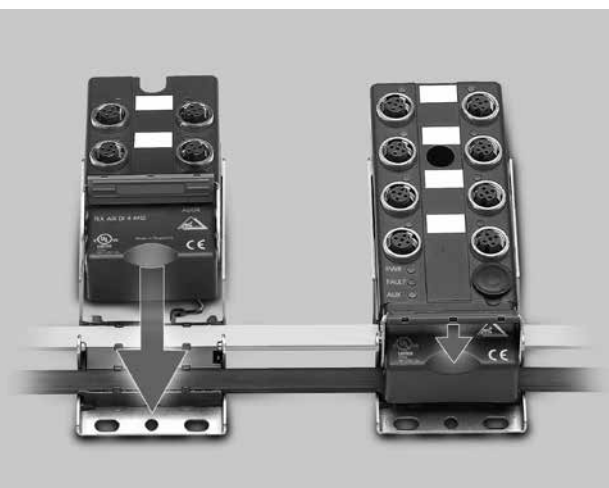


AS-i boxes – Easy cabling in the lower field level

The AS-i devices were designed for efficiently networking sensors and actuators in the AS-i network and allow for fast and safe installation with tool-free contacting.

AS-i devices can be installed quickly and easily. The locking mechanism allows a tool-free

connection to the AS-i flat conductors. They are pressed into the corresponding guide aids and the module electronics are moved forward. The devices are connected to the AS-i flat conductors using the penetration technique by snapping the hinged section into place.



Sensor/Actuator flush type connectors and customer assembled plug connectors

M8 and M12 flush type connectors with integrated braid for device connection to the PCB is available. Freely customizable plug connectors can be used for rapid assembly

of individual wiring lengths of M8 and M12 sensor/actuator cables. Here it is possible to choose between versions with screw or fast connectors.

Application areas for bus cables

- Plant engineering and construction
- Factory Automation (field busses like PROFIBUS, INTERBUS, DeviceNet, CAN etc.)
- Process Automation (chemical, petro-chemical industry etc.)
- Building Automation (building management)

Overview of the most common bus systems

AS-Interface (AS-i)

Developed to have an inexpensive alternative on the lower Fieldbus level (sensor/actuator) of Automation. Used very often in connection with Ethernet, PROFIBUS, CAN and DeviceNet.

PROFIBUS

We distinguish between PROFIBUS DP and PROFIBUS PA. The DP variant dominates worldwide with a bit rate of 1.5 Mbit/s up to 12 Mbit/s PROFIBUS PA is the leader in Process Automation in Europe.

CAN/CANopen

Originally developed for cars. Used in industry in an extremely broad range of applications.

DeviceNet™

Prior Fieldbussystem in North America. Developed by Allen Bradley (Rockwell Automation). Based on CAN.

Fieldbus Foundation™

Bus system for use in Process Automation.

SafetyBUS

Bus systems are developed especially for safety-relevant areas. They operate either completely independently (e.g: SaftyBUS p®) or are part of an overall system (e.g. PROFIsafe, INTERBUS Safty, DeviceNet Safty etc.).

INTERBUS®

One of the first field bus systems used in the automotive industry.

European Installation Bus EIB/KNX

Bus system for Building Automation. Operates primarily with low bit rate.

Other bus systems

For dedicated bus systems or modified system solutions based on standardized systems.

CAN = Controller Area Network
DeviceNet™ = registered trademark of Open Device Vendors Association (ODVA)
Fieldbus Foundation™ = registered trademark of Fieldbus Foundation™
SafetyBUS p® = registered trademark of Pilz GmbH & Co. KG
INTERBUS® = registered trademark of Phoenix Contact GmbH & Co
Lapp Kabel is a member of the PROFIBUS user organisation e. V. (PNO)

Quickfinder

Bus system	Inst. area	Application/cabling	Outer sheath material	Approval	Characteristics	Article designation	Part number	Connectors	
PROFIBUS DP (150 Ω)	indoor (UV = outdoor)	static	PVC			UNITRONIC® BUS PB	2170220	1,2,7,8,9,10,15,16,21,22,23,24,27,28,29	
				UL/CSA (CMX)		UNITRONIC® BUS PB A	2170219	1,2,7,8,9,10,15,16,21,22,23,24,27,28,29	
				UL/CSA (CMG)	vibration resistant, UV-resistant	UNITRONIC® BUS PB 7-W A	2170824	1,2,7,8,15,16,21,22,23,24,30,31	
					Fast Connect, vibration resistant, UV-resistant, black	UNITRONIC® BUS PB Y 7-W FC BK	2170310	5,6,12,14,19,20,26,30,31	
				UL/CSA (CMG)	Fast Connect, UV-resistant	UNITRONIC® BUS PB FC	2170820	3,4,11,13,17,18,25	
				UL/CSA (CMG)	Fast Connect, vibration resistant, UV-resistant	UNITRONIC® BUS PB 7-W FC	2170826	5,6,12,14,19,20,26,30,31	
					vibration resistant, COMBI 3 x 1 mm²	UNITRONIC® BUS PB COMBI 7-W	2170225		
					105 °C	UNITRONIC® BUS PB 105	2170630	1,2,7,8,9,10,15,16,21,22,23,24,27,28,29	
			H	UL/CSA (CM)	Fast Connect, halogen-free	UNITRONIC® BUS PB H FC	2170326	3,4,11,13,17,18,25	
				UL/CSA (CMG)	Fast Connect, halogen-free	UNITRONIC® BUS PB FRNC FC	2170853	3,4,11,13,17,18,25,28,29	
					halogen-free	UNITRONIC® BUS PB H 7-W	2170226	1,2,7,8,15,16,21,22,23,24,30,31	
				PUR	UL/CSA (CMX)	Fast Connect, oil resistant	UNITRONIC® BUS PB P FC	2170330	3,4,11,13,17,18,25
			ROBUST		higher chemical resistance, UV-resistant	UNITRONIC® BUS PB ROBUST	2170620	1,2,7,8,9,10,15,16,21,22,23,24	
			PE		Fast Connect, food & beverage industry, black, UV-resistant	UNITRONIC® BUS PB PE FC	2170333	3,4,11,13,17,18,25	
					food & beverage industry, black, UV-resistant	UNITRONIC® BUS PB PE	2170233	1,2,7,8,9,10,15,16,21,22,23,24,27,28,29	
			TPE		105°C; temporary up to 120°C	UNITRONIC® BUS PB 105 plus	2170635	1,2,7,8,9,10,15,16,21,22,23,24,27,28,29	
		high flexible	PUR		drag chain suitable, halogen-free, oil resistant	UNITRONIC® BUS PB FD P	2170222	1,2,7,8,15,16,21,22,23,24,30,31	
				UL/CSA (CMX)	drag chain suitable, halogen-free, oil resistant	UNITRONIC® BUS PB FD P A	2170822	1,2,7,8,15,16,21,22,23,24,30,31	
				UL/CSA (CMX)	Fast Connect, drag chain suitable, oil resistant	UNITRONIC® BUS PB FD P FC	2170322	5,6,12,14,19,20,26,30,31	
					drag chain suitable, oil resistant, COMBI 3 x 1 mm²	UNITRONIC® BUS PB FD P COMBI	2170227		
					drag chain suitable, oil resistant, COMBI 4 x 1.5 mm²	UNITRONIC® BUS PB FD P HYBRID	2170495		
			PVC	UL/CSA (CMG)	drag chain suitable, oil resistant, UV-resistant, COMBI 4 x 1.5 mm²	UNITRONIC® BUS PB FD Y HYBRID	2170875		
			FRNC	UL/CSA (CMG)	Fast Connect, drag chain suitable, halogen-free, flame retardant	UNITRONIC® BUS PB FD FRNC FC	2170854	5,6,12,14,19,20,26,30,31	
		torsion	PUR	UL/CSA (CMX)	torsion, halogen-free	UNITRONIC® BUS PB TORSION	2170332	1,2,7,8,15,16,21,22,23,24,30,31	
		festoon	PVC	UL/CSA (CMG)	cable trolley, festoon, UV-resistant	UNITRONIC® BUS PB FESTOON	2170331	1,2,7,8,15,16,21,22,23,24,30,31	
	outdoor & burial	static	PVC		UV-resistant, armoured, max. EMV-protection	UNITRONIC® BUS PB ARM	2170247		
					UV-resistant, burial, black	UNITRONIC® BUS PB Yv	2170223		
					UV-resistant, burial, black	UNITRONIC® BUS PB YY	2170236	1,2,7,8,9,10,15,16,21,22,23,24,27,28,29***	
			PVC/PE		Fast Connect, UV-resistant, burial, black	UNITRONIC® BUS PB BURIAL FC	2170323	3,4,11,13,17,18,25****	
PROFIBUS PA (100 Ω)	indoor	static	PVC		Ex area, blue	UNITRONIC® BUS PA BU	2170234	30,31	
	indoor/outdoor				UV-resistant, black	UNITRONIC® BUS PA BK	2170235		
				UL/CSA (CMG)	Fast Connect, Ex area, oil resistant, UV-resistant, blue	UNITRONIC® BUS PA FC (BU)	2170334		
					Fast Connect, oil resistant, UV-resistant, black	UNITRONIC® BUS PA FC (BK)	2170335		
				CAN CANopen (120 Ω)	indoor	static	PVC		UL/CSA (CMX)
UNITRONIC® BUS CAN 2X2X0,22	2170261	35,36,32,33							
UNITRONIC® BUS CAN 1X2X0,34	2170263	35,36,32,33							
UNITRONIC® BUS CAN 2X2X0,34	2170264								
UNITRONIC® BUS CAN 1X2X0,5	2170266	35,36,32,33							
UNITRONIC® BUS CAN 1X2X0,5	2170267								
UNITRONIC® BUS CAN 1X2X0,75	2170269								
UNITRONIC® BUS CAN 2X2X0,75	2170270								
high flexible	PUR	UL/CSA (CMX)	drag chain suitable, oil resistant, halogen-free			UNITRONIC® BUS CAN FD P 1X2X0,25	2170272	35,36,32,33	
						UNITRONIC® BUS CAN FD P 2X2X0,25	2170273		
						UNITRONIC® BUS CAN FD P 1X2X0,34	2170275	35,36,32,33	
						UNITRONIC® BUS CAN FD P 2X2X0,34	2170276		
						UNITRONIC® BUS CAN FD P 1X2X0,5	2170278	35,36,32,33	
						UNITRONIC® BUS CAN FD P 2X2X0,5	2170279		
DeviceNet (120 Ω)	indoor (UV = outdoor)	static	FRNC	UL/CSA (CMG) Germ. Lloyd	vibration resistant, halogen-free, UV-resistant	UNITRONIC® BUS DN THICK FRNC	2170340		
			PVC			UNITRONIC® BUS DN THIN FRNC	2170341	35,36,32,33	
					UL/CSA (CMG)	vibration resistant, oil resistant, UV-resistant	UNITRONIC® BUS DN THICK Y	2170342	
					UL/CSA (CMG)	vibration resistant, UV-resistant	UNITRONIC® BUS DN THIN Y	2170343	35,36,32,33
		high flexible	PUR	UL/CSA (CMX)	drag chain suitable, halogen-free, UV-resistant	UNITRONIC® BUS DN THICK Y ECO	2170362		
					UNITRONIC® BUS DN THIN Y ECO	2170363	35,36,32,33		
			PUR	UL/CSA (CMX)	drag chain suitable, halogen-free, UV-resistant	UNITRONIC® BUS DN THICK FD P	2170344		
			PVC	UL/CSA (CMG)	drag chain suitable, oil resistant, UV-resistant	UNITRONIC® BUS DN THIN FD P	2170345	35,36,32,33	
			UNITRONIC® BUS DN THICK FD Y	2170346					
			UNITRONIC® BUS DN THIN FD Y	2170347	35,36,32,33				

Legend See continuation page 8

*see www.lappgroup.com/products
**data sheet on www.lappgroup.com/products
***second outer sheath PVC need to be removed before harnessing
****second outer sheath PE need to be removed before harnessing
Please see detailed technical information on the data sheet (www.lappgroup.com/products).

7-W: 7-Wire: 7-stranded litz, dedicatet for vibrating machine parts
CAN: Controller Area Network
FC: Fast Connect (cable construction for fast connector harnessing)
FD: high flexible (german - “Flexible Dauerbiegung”)
FRNC: Flame Retardant Not Corrosive

H: halogen-free
LD: Long Distance
P: PUR – Polyurethan – oil resistant
PA: Process Automation
PB: PROFIBUS

PE: PROFIBUS PA:
ROBUST: vibration resistant:
Y:

Polyethlen: can be used in food & beverage industry
PROFIBUS for Process Automation, especially in hazardous areas
extended use: Water, chemical resistance, soap, tenside
Vibration resistant because single core ist 7-wire stranded
PVC – Polyvinylchorid

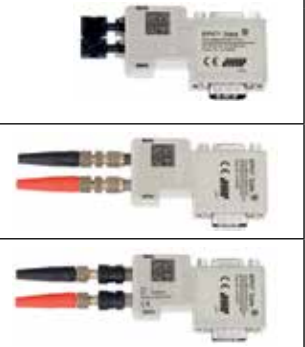
Bus cables

Connectors				
No.	Cable type	Core dimension	Article designation	Part number
PROFIBUS D-SUB				
1	solid + flexible	≤ 1 mm ²	ED-PB-35	21700507
2	solid + flexible	≤ 1 mm ²	ED-PB-35-PG	21700506
3	solid	0.64 mm	ED-PB-35-FC	21700511
4	solid	0.64 mm	ED-PB-35-PG-FC	21700513
5	flexible	0.64 mm	ED-PB-35-FC-FLEX	21700514
6	flexible	0.64 mm	ED-PB-35-PG-FC-FLEX	21700515
7	solid + flexible	≤ 1 mm ²	ED-PB-90	21700504
8	solid + flexible	≤ 1 mm ²	ED-PB-90-PG	21700503
9	solid	≤ 0.5 mm ²	ED-PB-90-ST	21700509
10	solid	≤ 0.5 mm ²	ED-PB-90-PG-ST	21700508
11	solid	0.64 mm	ED-PB-90-FC	21700502
12	flexible	0.64 mm	ED-PB-90-FC-FLEX	21700528
13	solid	0.64 mm	ED-PB-90-PG-FC	21700501
14	flexible	0.64 mm	ED-PB-90-PG-FC-FLEX	21700527
15	solid + flexible	≤ 1 mm ²	ED-PB-90-LED	21700530
16	solid + flexible	≤ 1 mm ²	ED-PB-90-PG-LED	21700529
17	solid	0.64 mm	ED-PB-90-LED-FC	21700547
18	solid	0.64 mm	ED-PB-90-PG-LED-FC	21700546
19	flexible	0.64 mm	ED-PB-90-LED-FC-FLEX	21700549
20	flexible	0.64 mm	ED-PB-90-PG-LED-FC-FLEX	21700539
21	solid + flexible	≤ 1 mm ²	ED-PB-90-ATEX	21700543
22	solid + flexible	≤ 1 mm ²	ED-PB-90-PG-ATEX	21700542
23	solid + flexible	≤ 1 mm ²	ED-PB-90-RP-PG	21700541
24	solid + flexible	≤ 1 mm ²	ED-PB-AX	21700505
25	solid	0.64 mm	ED-PB-AX-FC	21700544
26	flexible	0.64 mm	ED-PB-AX-FC-FLEX	21700545
PROFIBUS D-SUB solid metal				
27	solid	<= 0.5 mm ²	ED-PB-35-PG-ST-PRO	21700564
28	solid	<= 0.5 mm ²	ED-PB-90-PG-ST-PRO	21700565
29	solid	<= 0.5 mm ²	ED-PB-AX-PG-ST-PRO	21700566
PROFIBUS M12				
30	flexible	0.25 – 0.75 mm ²	AB-C5-M12MSB-PG9-SH-AU	22260653
31	flexible	0.25 – 0.75 mm ²	AB-C5-M12FSB-PG9-SH-AU	22260646
CAN BUS/DeviceNet M12				
32	flexible	0.25 – 0.75 mm ²	AB-C5-M12MS-PG9-SH	22260135
33	flexible	0.25 – 0.75 mm ²	AB-C5-M12FS-PG9-SH	22260136
CAN/CANopen/DeviceNet				
34	solid + flexible	≤ 1 mm ²	ED-CAN-90	21700537
35	solid + flexible	≤ 1 mm ²	ED-CAN-90-PG	21700536
36	solid + flexible	≤ 1 mm ²	ED-CAN-AX	21700538
AS-Interface distributor				
No.	Cable type	Distributor	Article designation	Part number
41	flexible	1 x AS-i → 2-pin M12	AB-ASI-J-Y-N-M12FS	22260800
42	flexible	2 x AS-i → 4-pin M12	AB-ASI-J-Y-B-M12FS	22260801
43	flexible	1 x AS-i → 2 x AS-i	AB-ASI-J-Y-Y-N	22260802
44	flexible	1 x AS-i → 2-pin M12 1m	AB-ASI-J-Y-N-PUR-1,0-M12FS	22260803
45	flexible	1 x AS-i → 2-pin M12 2m	AB-ASI-J-Y-N-PUR-2,0-M12FS	22260804
46	flexible	2 x AS-i → 4-pin M12 1m	AB-ASI-J-Y-B-PUR-1,0-M12FS	22260805
47	flexible	2 x AS-i → 4-pin M12 2m	AB-ASI-J-Y-B-PUR-2,0-M12FS	22260806

Legend			
35°	35 degree	FSB	Female Straight Bus
90°	90 degree	MSB	Male Straight Bus
ATEX	ATEX (atmosphère explosible)	PB	PROFIBUS
AX	axial (180°)	PG	service port
CAN	CAN bus	PG9	PG9 cable screw connection
ED	EPIC® Data	RP	Repeater
FC	Fast Connect	ST	spring type
FLEX	flexible		

*see www.lappgroup.com/products
Please see detailed technical information on the data sheet (www.lappgroup.com/products).

Bus cables

PROFIBUS quick and easy					
No.	Cable type	Article designation	Part number		
PROFIBUS D-SUB /M12					
1	EPIC® Data, metallized plastic	ED-PB-90-M12	21700521		
2	EPIC® Data, metallized plastic	ED-PB-90-PG-M12	21700520		
3	EPIC® Data PRO, solid metall	ED-PB-35-PG-M12-PRO	21700561		
4	EPIC® Data PRO, solid metall	ED-PB-90-PG-M12-PRO	21700562		
5	EPIC® Data PRO, solid metall	ED-PB-AX-PG-M12-PRO	21700563		
M12 PROFIBUS Termination Resistors					
6	360° metall shielded, female straight	AB-C5-M12FS-PB-TR-SH	22261001		
7	Plastic, male straight	AB-C4-M12MS-PB-TR	22260722		
PROFIBUS CORDS M12-male connector/M12-female connector					
8	UNITRONIC® PROFIBUS M12 cable, PUR high flexible, straight 0.3 m	AB-PB-M12MS-0,3PUR-M12FS	22260773		
9	UNITRONIC® PROFIBUS M12 cable, PUR high flexible, straight 1 m	AB-PB-M12MS-1,0-PUR-M12FS	22260774		
10	UNITRONIC® PROFIBUS M12 cable, PUR high flexible, straight 2 m	AB-PB-M12MS-2,0-PUR-M12FS	22260775		
11	UNITRONIC® PROFIBUS M12 cable, PUR high flexible, straight 5 m	AB-PB-M12MS-5,0-PUR-M12FS	22260776		
12	UNITRONIC® PROFIBUS M12 cable, PUR high flexible, straight 10 m	AB-PB-M12MS-10,0-PUR-M12FS	22260776		
13	UNITRONIC® PROFIBUS M12 cable, PUR high flexible, M12 angled 5 m	AB-PB-M12MA-5,0PUR-M12FA	22260079		
14	UNITRONIC® PROFIBUS M12 cable, PUR high flexible, M12 angled 10 m	AB-PB-M12MA-10,0PUR-M12FA	22260904		
15	UNITRONIC® PROFIBUS M12 cable, PUR hochflexibel, M12 angled 15 m	AB-PB-M12MA-15,0PUR-M12FA	22260905		
EPIC® Data PROFIBUS (Optical Link Module)					
16	PROFIBUS-connector with optical HFBR interface (λ = 650 nm) , 90°	ED-PB-90-PG-FO-HFBR-650	21700568		
17	PROFIBUS-connector with optical SMA interface (λ = 650 nm) , 90°	ED-PB-90-PG-FO-SMA-650	21700569		
18	PROFIBUS-connector with optical (BFOC)ST interface (λ = 650 nm) , 90°	ED-PB-90-PG-FO-BFOC-650	21700570		

Legend					
35°	35 degree	FC	Fast connect	MS	Male straight
90°	90 degree	FLEX	Flexible	PB	PROFIBUS
AB	Automation Bus	FO	Fiber Optic	PG	Programing/service port
ATEX	ATEX (Atmosphère explosible)	FS	Female straight	RP	Repeater
AX	Axial (180°)	HFBR	HFBR interface (compatible with HP Versatile Link connectors and components series)	SMA	SMA interface
BFOC	BFOC (ST) interface			ST	Spring type
ED	EPIC® Data				
FA	Female angled	MA	Male angled		

Please see detailed technical information on the data sheet (www.lappgroup.com/products).

Quickfinder (continuation)

Bus system	Inst. area	Application/cabling	Outer sheath material	Approval	Characteristics	Article designation	Part number	Connectors
AS-Interface (AS-i) (70 – 140 Ω)	indoor	static/flexible	EPDM (Rubber)		food & beverage industry, halogen-free	UNITRONIC® BUS ASI (G) YE	2170228	41-47
						UNITRONIC® BUS ASI (G) BK	2170229	
			TPE		Long Distance, saving of power supplies	UNITRONIC® BUS ASI LD(G) YE 2x2,5	2170371	
						UNITRONIC® BUS ASI LD(G) BK 2x2,5	2170372	
					oil resistant, cold flexible	UNITRONIC® BUS ASI (TPE) YE	2170230	
						UNITRONIC® BUS ASI (TPE) BK	2170231	
		PVC	UL/CSA (CMG)	oil resistant	UNITRONIC® BUS ASI (TPE) RD	2170232		
					UNITRONIC® BUS ASI (PVC) A YE	2170842		
		high flexible	PVC		UNITRONIC® BUS ASI (PVC) A BK	2170843		
					UNITRONIC® BUS ASI (PVC) A RD	2170844		
			PUR	UL (AWM)	drag chain, oil resistant, Long Distance, halogen-free	UNITRONIC® BUS ASI (PVC) A RD	2170844	
						UNITRONIC® BUS ASI FD P FRNC YE	2170311	
TPE	UL (AWM) CSA		drag chain, oil resistant, cold flexible, Long Distance, halogen-free	UNITRONIC® BUS ASI FD P FRNC BK	2170312			
				UNITRONIC® BUS ASI LD FD P YE 2x2,5	2170318			
		drag chain suitable, oil resistant, 105 °C	UNITRONIC® BUS ASI LD FD P BK 2x2,5	2170319				
			UNITRONIC® BUS ASI FD (TPE) A YE	2170830				
			UNITRONIC® BUS ASI FD (TPE) A BK	2170831				

RS485, RS422 Bus systems (100 – 120 Ω)	indoor	static	PVC			UNITRONIC® BUS LD 1x2x0,22	2170203	Standard D-SUB connector 9-pos.
						UNITRONIC® BUS LD 2x2x0,22	2170204	
						UNITRONIC® BUS LD 3x2x0,22	2170205	
		high flexible	PUR	UL/CSA (CMX)		UNITRONIC® BUS LD A 1x2x0,22	2170803	
				drag chain suitable, oil resistant		UNITRONIC® BUS LD FD P 1x2x0,25	2170213	
						UNITRONIC® BUS LD FD P 2x2x0,25	2170214	
						UNITRONIC® BUS LD FD P 3x2x0,25	2170215	
						UNITRONIC® BUS LD FD P A 1x2x0,25	2170813	
						UNITRONIC® BUS LD FD P A 2x2x0,26	2170814	
		drag chain suitable, oil resistant	UNITRONIC® BUS LD FD P A 3x2x0,27	2170815				

Fieldbus Foundation™ (100 Ω)	indoor/outdoor	flexible	PVC	UL/CSA (CMG)	105°C, UV-resistant, yellow	UNITRONIC® BUS FF 3	2170350	
					105°C, UV-resistant, yellow	UNITRONIC® BUS FF 2	2170352	
		static			105°C, UV-resistant, armoured, ++ EMV, yellow	UNITRONIC® BUS FF 3 ARM (YE)	2170351	
					105°C, UV-resistant, armoured, ++ EMV, blue	UNITRONIC® BUS FF 3 ARM (BU)	2170353	

CC-Link® (110 Ω)	indoor/outdoor	flexible	PVC	UL (CM) CLPA	UV-resistant	UNITRONIC® BUS CC	2170360	
	indoor	high flexible	PUR	UL (AWM)	drag chain suitable, halogen-free, oil resistant,	UNITRONIC® BUS CC FD P FRNC	2170370	

SafetyBUS (120 Ω)	indoor	static	H		halogen-free, vibration resistant	UNITRONIC® BUS SAFETY	2170295	
		high flexible	PUR		drag chain suitable, halogen-free	UNITRONIC® BUS SAFETY FD P	2170885	

INTERBUS (100 Ω)	indoor	static	PVC		vibration resistant	UNITRONIC® BUS IBS	2170206	Standard D-SUB connector 9-pos.
				UL/CSA (CMX)	vibration resistant	UNITRONIC® BUS IBS A	2170209	
			PUR		vibration resistant, COMBI 3 x 1 mm²	UNITRONIC® BUS IBS P COMBI	2170208	
		high flexible	PUR		drag chain suitable	UNITRONIC® BUS IBS FD P	2170216	
					drag chain suitable, COMBI 3 x 1 mm²	UNITRONIC® BUS IBS FD P COMBI	2170218	
				UL/CSA (CMX)	drag chain suitable, COMBI 3 x 1 mm²	UNITRONIC® BUS IBS FD P COMBI A	2170818	
	outdoor	static	PVC		vibration resistant	UNITRONIC® BUS IBS Yv	2170207	
					vibration resistant	UNITRONIC® BUS IBS Yv COMBI	2170217	

European Installation Bus EIB/KNX	indoor	static	PVC			UNITRONIC® BUS EIB	2170240	
			H		halogen-free	UNITRONIC® BUS EIB H	2170241	
			PVC		COMBI 3 x 1.5 mm²	UNITRONIC® BUS EIB COMBI	2170242	

Legend			
7-W:	7-Wire: 7-stranded litz, dedicatet for vibrating machine parts	PA:	Process Automation
CAN:	Controller Area Network	PB:	PROFIBUS
FC:	Fast Connect (cable construction for fast connector harnessing)	PE:	Polyethlen: can be used in food & beverage industry
FD:	high flexible (german – “Flexible Dauerbiegung”)	PROFIBUS PA:	PROFIBUS for Process Automation, especially in hazardous areas
FRNC:	Flame Retardant Not Corrosive		extended use: Water, chemical resistance, soap, tenside
H:	halogen-free	ROBUST:	Vibration resistant because single core ist 7-wire stranded
LD:	Long Distance	vibration resistant:	
P:	PUR – Polyurethan – oil resistant	Y:	PVC – Polyvinylchlorid

*see www.lappgroup.com/products
***second outer sheath PVC need to be removed before harnessing
****second outer sheath PE need to be removed before harnessing
Please see detailed technical information on the data sheet (www.lappgroup.com/products).

Adapter

AS-Interface distributor				
No.	Cable type	Distributor	Article designation	Part number
41	flexible	1 x AS-i → 2-pos. M12	AB-ASI-J-Y-N-M12FS	22260800
42	flexible	2 x AS-i → 4-pos. M12	AB-ASI-J-Y-B-M12FS	22260801
43	flexible	1 x AS-i → 2 x AS-i	AB-ASI-J-Y-Y-N	22260802
44	flexible	1 x AS-i → 2-pos. M12 1m	AB-ASI-J-Y-N-PUR-1,0-M12FS	22260803
45	flexible	1 x AS-i → 2-pos. M12 2m	AB-ASI-J-Y-N-PUR-2,0-M12FS	22260804
46	flexible	2 x AS-i → 4-pos. M12 1m	AB-ASI-J-Y-B-PUR-1,0-M12FS	22260805
47	flexible	2 x AS-i → 4-pos. M12 2m	AB-ASI-J-Y-B-PUR-2,0-M12FS	22260806

Type designation UNITRONIC® Fieldbus

1. S/A cabling



S/A cable

Example 1.1: **AB-C3-M8MS-2,0PUR-M12FA-2L**

AB-C	3	-	M8MS	-	2,0	-	PUR	-	M12FA	-	2L	
Automation bus cordset	Number of pin		Connection left		Cable length in m		Material of cable		Connection right		Number of LEDs	
	3		M8MS (M8 connector straight)		0,3		PUR		M8FA (M8 socket angled)		2L	
	4		M12MS (M12 connector straight)		0,6		PVC		M8FS (M8 socket straight)		3L	
	5				1,0				M12FA (M12 socket angled)			
	8				2,0				M12FS (M12 socket straight)			
					...							
												SH
												shielded Version
												SH



Valve connector

Example 1.2 : **AB-C3-M12MS-0,3PUR-A-1L-S**

AB-C	3	-	M12MS	-	0,3	-	PUR	-	A	-	1L	-	S
Automation bus cordset	Number of pin		Connection left		Cable length in m		Material of cable		Type of valve connector		Number of LEDs		with protection
	3		M12MS (M12 connector straight)		0,3		PUR		A (Type A)		1L		S (Z diode)
	4				0,6				AD (Type AD)		2L		SV (Varistor)
	5				1,0				B (Type B)				
	8				2,0				BI (Type BI)				
					...				C (Type C)				
					...				CI (Type CI)				



Connector
(field attachable)

Example 1.3 : **AB-C5-M12FS-PG9-SH**

AB-C	5	-	M12FS	-	PG9	-	SH
Automation bus cordset	Number of pin		Connectors		Cable connection		shielded Version
	3		M8MS (M8 connector straight)		PG7		SH
	4		M8FS (M8 socket straight)		PG9		SH
	5		M12MS (M12 connector straight)		F0,34 (fast connect, max. 0.34 mm² conductor cross-section)		
			M12MA (M12 connector angled)		F0,75 (fast connect, max. 0.75 mm² conductor cross-section)		
			M12FS (M12 socket straight)		P (Piercing)		
			M12FA (M12 socket angled)		M16 – 0,5 (flush-type connector with 0.5 m PUR litz wire)		
					PG9 – 0,5 (flush-type connector with 0.5 m PUR litz wire)		
					PG9 – 0,5 (flush-type connector M8 with 0.5 m PUR litz wire)		
					PG9/M16-PO-0,5 (flush-type connector, can be positioned with 0.5 m PUR litz wire)		

DSI

Mounting type
(flush-type connector)

DSI (Data Socket
Inside – rear mounting)

2. S/A box passiv



S/A box passiv

Example 2.1 : **AB-B8-M12L-16-10,0PUR**

AB-B	8	-	M12	-	L	-	16	-	10,0	-	PUR
Automation bus-Box	Number of slots		S/A connection		LED		Number of inputs/outputs		Master cable connection		Material of cable
	4		M8		L		4		5,0 (5.0 m length of master cable)		PUR
	6		M12				6		10,0 (10.0 m length of master cable)		
	8						8		C (pluggable, for master cable bulk stock)		
	10						10		M12 (M12 master cable connection)		
							12		M16 (M16 master cable connection)		
							16				

3. S/A box active



S/A box active

Example 3.1 : **AB-ASI-DI4DO4-M12-2A**

AB-	ASI	-	DI4	-	DO4	-	2A
Automation bus	Interface		Digital inputs		Digital outputs		max. output current each channel
	ASI (AS-Interface)		2		2		0.5A
	PB (PROFIBUS)		4		3		2A
	CAN (CANopen)		8		4		3A
	DN (DeviceNet)		16		8		

R4 (4 outputs (relay contacts))

4. Pre-assembled bus cables



Pre-assembled bus cables

Example 4.1: **AB-PB-M12MS-10,0PUR-M12FS**

AB-	PB	-	M12MS	-	10,0	-	PUR	-	M12FS
Automation bus	Interface		Connection left		Cable length in m		Material of cable		Connection right
	PB (PROFIBUS)		M12MS (M12 connector straight)		0,3		PUR		M12FS (M12 socket straight)
	CAN (CANopen)		M12MA (M12 connector angled)		0,6				M12FA (M12 socket angled)
	DN (DeviceNet)				1,0				
					...				
					10,0				

1a. Sensor/actuator cordsets



S/A selector		M8 connector				M12 connector								M12 connector shielded (SH)			Free conductor end to the direct connection at field attachable connectors			
		straight (M8MS)		angled (M8MA)		straight (M12MS)				angled (M12MA)				straight (M12MS ... SH)						
		3-pin	4-pin	3-pin	4-pin	3-pin	4-pin	5-pin	8-pin	3-pin	4-pin	5-pin	8-pin	3-pin	4-pin	5-pin				
		Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number				
S/A cable with free conductor end to the direct connection at: – sensors/actuators and – field attachable connectors	2.0 m	22260204	22260300	22260053	22260056	22260221	22260320	22260400	22260091	22260223	22260301	22260402	22260094	22260453	22260459	22260465				
	5.0 m	22260205	22260308	22260987	22260057	22260222	22260321	22260401	22260092	22260224	22260302	22260403	22260095	22260454	22260460	22260466				
	10.0 m	22260218	22260318	22260055	22260058	22260249	22260342	22260414	22260093	22260256	22260303	22260417	22260096	22260455	22260461	22260467				
M8 socket	straight socket (M8FS)	3-pin	0.3 m	22260206	Example: S/A cable, 3-pos., PUR halogen-free BK, straight M8 plug, on straight M8 socket, l = 0.3 m (AB-C3-M8MS-0,3PUR-M8FS)		22260225											2.0 m	22260202	
			0.6 m	22260207			22260226											5.0 m	22260200	
			1.0 m	22260208			22260227											10.0 m	22260219	
			2.0 m	22260209			22260228													
		4-pin	0.3 m		22260313				22260347										2.0 m	22260309
			0.6 m		22260314				22260349										5.0 m	22260310
			1.0 m		22260315				22260350									10.0 m	22260317	
			2.0 m		22260316				22260348											
	angled socket (M8FA)	3-pin	0.3 m	22260210			22260229												2.0 m	22260203
			0.6 m	22260211			22260230												5.0 m	22260201
			1.0 m	22260212			22260231												10.0 m	22260220
			2.0 m	22260213			22260232													
		4-pin	0.3 m				22260059												2.0 m	22260311
			0.6 m				22260060												5.0 m	22260312
			1.0 m				22260061												10.0 m	22260319
			2.0 m				22260062													
	angled socket with LEDs (M8FA-2L)	3-pin	0.3 m	22260214			22260267												2.0 m	22260275
			0.6 m	22260215			22260268												5.0 m	22260276
			1.0 m	22260216			22260269												10.0 m	22260277
			2.0 m	22260217			22260270													
M12 socket	straight socket (M12FS)	3-pin	0.3 m	22260241			22260233											2.0 m	22260257	
			0.6 m	22260242			22260234												5.0 m	22260250
			1.0 m	22260243			22260235												10.0 m	22260251
			2.0 m	22260244			22260236													
		4-pin	0.3 m						22260328			22260304							2.0 m	22260322
			0.6 m						22260329			22260305							5.0 m	22260323
			1.0 m						22260330			22260306							10.0 m	22260343
			2.0 m						22260331			22260307								
		5-pin	0.3 m					22260410											2.0 m	22260404
			0.6 m					22260411											5.0 m	22260405
			1.0 m					22260412											10.0 m	22260415
			2.0 m					22260413												
		8-pin	0.3 m						22260097										2.0 m	22260726
			0.6 m						22260098										5.0 m	22260728
			1.0 m						22260099										10.0 m	22260729
			2.0 m						22260042											
	straight socket with LEDs (M12FS-2L)	3-pin	0.3 m																2.0 m	22260252
			0.6 m																5.0 m	22260265
			1.0 m																10.0 m	22260266
			2.0 m																	
		4-pin	0.3 m																2.0 m	22260344
			0.6 m																5.0 m	22260345
			1.0 m																10.0 m	22260346
			2.0 m																	

S/A

See continuation page 13

Please see detailed technical information on the data sheet (www.lappgroup.com/products).

1a. Sensor/actuator cordsets (continuation)



S/A

S/A selector				M8 connector				M12 connector								M12 connector shielded (SH)			Free conductor end to the direct connection at field attachable connectors	
				straight (M8MS)		angled (M8MA)		straight (M12MS)				angled (M12MA)				straight (M12MS ... SH)				
				3-pin	4-pin	3-pin	4-pin	3-pin	4-pin	5-pin	8-pin	3-pin	4-pin	5-pin	8-pin	3-pin	4-pin	5-pin		
				Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number	Part number		
M12 socket	angled socket (M12FA)	3-pin	0.3 m	22260245				22260237										2.0 m	22260258	
			0.6 m	22260246				22260238										5.0 m	22260259	
			1.0 m	22260247				22260239										10.0 m	22260260	
			2.0 m	22260248				22260240												
		4-pin	0.3 m						22260332										2.0 m	22260324
			0.6 m						22260333										5.0 m	22260325
			1.0 m						22260334									10.0 m	22260341	
			2.0 m						22260335											
		5-pin	0.3 m							22260063									2.0 m	22260406
			0.6 m							22260064									5.0 m	22260407
			1.0 m							22260065									10.0 m	22260418
			2.0 m							22260066										
		8-pin	0.3 m								22260137								2.0 m	22260141
			0.6 m								22260138								5.0 m	22260615
			1.0 m								22260139								10.0 m	22260616
			2.0 m								22260140									
	angled socket with LEDs (M12FA-xL)	3-pin	0.3 m	22260271				22260261											2.0 m	22260253
			0.6 m	22260272				22260262											5.0 m	22260254
			1.0 m	22260273				22260263											10.0 m	22260255
			2.0 m	22260274				22260264												
		4-pin	0.3 m							22260336									2.0 m	22260326
			0.6 m							22260337									5.0 m	22260327
			1.0 m							22260338									10.0 m	22260340
			2.0 m							22260339										
		5-pin	0.3 m								22260067								2.0 m	22260408
			0.6 m								22260068								5.0 m	22260409
			1.0 m								22260069								10.0 m	22260416
			2.0 m								22260070								25.0 m	22260760
M12 socket shielded	straight socket shielded (M12FS-SH)	3-pin																2.0 m	22260450	
																		5.0 m	22260451	
																			10.0 m	22260452
		4-pin																	2.0 m	22260456
																			5.0 m	22260457
																			10.0 m	22260458
																			20.0 m	22260823
		5-pin																	2.0 m	22260462
																			5.0 m	22260463
																			10.0 m	22260464
	angled socket shielded (M12FA-SH)	3-pin																	2.0 m	22260071
																			5.0 m	22260072
																			10.0 m	22260073
		4-pin																	2.0 m	22260074
																			5.0 m	22260675
																			10.0 m	22260680
		5-pin																	2.0 m	22260946
																			5.0 m	22260714
																			10.0 m	22260991

Special cable lengths, other outer sheath materials (e.g. PVC) and individual connector types on request.
Please see detailed technical information on the data sheet (www.lappgroup.com/products).

1b. Selector: M8/M12 connectors (field attachable) – sensor cable

Connectors									UNITRONIC® SENSOR								UNITRONIC® SENSOR FD UL/AWM						UNITRONIC® SENSOR FD shielded			UNITRONIC®						
										S-LiYY (3x0,25)	S-LiYY (3x0,34)	S-LiYY (4x0,25)	S-LiYY (4x0,34)	DESINA (4x0,34)	S-LiYY11Y (4x0,34)	S-Li11Y (5x0,25)	Li9Y11Y (3x0,25)	Li9Y11Y (3x0,34)	Li9Y11Y (4x0,25)	Li9Y11Y (4x0,34)	Li9Y11Y (5x0,34)	Li9Y11Y (5x0,25)	Li9Y11Y (8x0,25)	Li9YC11Y (3x0,34)	Li9YC11Y (4x0,34)	Li9YC11Y (5x0,34)	LiYY 4x0,75	LiYY 5x0,75	LiYCY 4x0,75	LiYCY 5x0,75	LiYCY 8x0,25	FD CP plus 5x0,25)
							Outer diameter [mm]	4.2	4.8	4.5	4.8	5.2	4.8	4.9	4,4	4.6	4,7	4.7	5.1	4.7	5.9	4,6	4,7	5,1	6.1	6.9	7.0	7.6	7.1	6.2	6.8	
							Part number	7038883	7038859	7038884	7038860	0040434	7038861	7038862	7038883	7038864	7038884	7038865	7038866	7038867	7038868	7038885	7038886	7038887	0028604	0028605	0034704	0034705	0034408	0028892	0028901	
Connection	Number of pin	Version	Connection type	Conductor cross-section [mm²]	Cable diameter [mm]	Part number																										
M8	3-pin	socket, straight	Screw	0.14 – 0.5	3.5 – 5.0	22260125		X	X					X	X																	
		connector, straight	Screw	0.14 – 0.5	3.5 – 5.0	22260120		X	X					X	X																	
		socket, straight	Piercing	0.14 – 0.38	3.0 – 5.0	22260124		X	X					X	X																	
		connector, straight	Piercing	0.14 – 0.38	3.0 – 5.0	22260122		X	X					X	X																	
		socket, straight	IDC	0.08 – 0.25	2.5 – 5.0	22260994		X						X																		
		socket, straight	IDC	0.25 – 0.5	2.5 – 5.0	22260986		X	X					X	X																	
		connector, straight	IDC	0.08 – 0.25	2.5 – 5.0	22260993		X						X																		
		connector, straight	IDC	0.25 – 0.5	2.5 – 5.0	22260985		X	X					X	X																	
	4-pin	socket, straight	Screw	0.14 – 0.5	3.5 – 5.0	22260126				X						X	X															
		connector, straight	Screw	0.14 – 0.5	3.5 – 5.0	22260121				X						X	X															
		socket, straight	IDC	0.08 – 0.25	2.5 – 5.0	22260045				X						X																
		socket, straight	IDC	0.25 – 0.5	2.5 – 5.0	22260046				X	X					X	X															
		connector, straight	IDC	0.08 – 0.25	2.5 – 5.0	22260043				X						X																
		connector, straight	IDC	0.25 – 0.5	2.5 – 5.0	22260044				X	X					X	X															
		socket, straight	Piercing	0.14 – 0.38	3.5 – 5.0	22260119				X	X					X	X															
		connector, straight	Piercing	0.14 – 0.38	3.0 – 5.0	22260123				X	X					X	X															
M12	4-pin	socket, straight	Screw	0.25 – 0.75	4.0 – 6.0	22260640				X	X					X																
		socket, straight	Screw	0.25 – 0.75	6.0 – 8.0	22260641													X		X											
		socket, angled	Screw	0.25 – 0.75	4.0 – 6.0	22260636				X	X					X																
		connector, straight	Screw	0.25 – 0.75	4.0 – 6.0	22260649				X	X					X																
		connector, angled	Screw	0.25 – 0.75	6.0 – 8.0	22260995														X		X										
		socket, angled	Screw	0.25 – 0.75	4.0 – 6.0	22260647				X	X					X						X										
		connector, straight	IDC	0.14 – 0.34	3.5 – 6.0	22260131					X	X	X			X																
		socket, straight	IDC	0.34 – 0.75	4.0 – 8.0	22260133					X	X	X			X																
		connector, straight	IDC	0.14 – 0.34	3.5 – 6.0	22260132					X	X	X			X																
		connector, straight	IDC	0.34 – 0.75	4.0 – 8.0	22260134					X	X	X			X																
	5-pin	socket, straight	Screw	0.25 – 0.75	4.0 – 6.0	22260127							X				X	X														
		socket, straight	Screw	0.25 – 0.75	6.0 – 8.0	22260644															X		X									
		socket, straight	SKINTOP®	0.25 – 0.75	6.0 – 8.0	22260997															X		X									
		socket, angled	Screw	0.25 – 0.75	4.0 – 6.0	22260128							X				X	X														
		socket, angled	Screw	0.25 – 0.75	6.0 – 8.0	22260638							X				X	X														
		connector, straight	Screw	0.25 – 0.75	4.0 – 6.0	22260129							X				X	X														
connector, straight		Screw	0.25 – 0.75	6.0 – 8.0	22260651															X		X										
connector, straight		SKINTOP®	0.25 – 0.75	6.0 – 8.0	22260996															X		X										
connector, angled		Screw	0.25 – 0.75	4.0 – 6.0	22260130							X				X	X															
connector, angled		Screw	0.25 – 0.75	6.0 – 8.0	22260648															X		X										
8-pin	connector, straight, shielded	Screw	0.25 – 0.75	6.0 – 8.0	22260135													X			X		X	X								
	socket, straight, shielded	Screw	0.25 – 0.75	6.0 – 8.0	22260136													X			X		X	X								

Legend
*see www.lappgroup.com/products
Please see detailed technical information on the data sheet (www.lappgroup.com/products).

1c. Valve connectors

S/A

Connectortype		with M12 connector straight			Free conductor end to the direct connection at field attachable connectors		
Article designation	Version	Length	3-pos.	5-pos.	Length	3-pos.	5-pos.
Type A (18 mm)	PE bridged with 1 LED and protective circuit (Z diode) PUR cable	0.3 m	22260550		2.0 m	22260584	
		0.6 m	22260551		5.0 m	22260576	
		1.0 m	22260552		10.0 m	22260577	
		2.0 m	22260553				
Type B (10 mm)		0.3 m	22260558		2.0 m	22260585	
		0.6 m	22260559		5.0 m	22260578	
		1.0 m	22260560		10.0 m	22260579	
		2.0 m	22260561				
Type BI (11 mm)		0.3 m	22260554		2.0 m	22260586	
		0.6 m	22260555		5.0 m	22260580	
		1.0 m	22260556		10.0 m	22260581	
		2.0 m	22260557				
Type C (8 mm)		0.3 m	22260566		2.0 m	22260587	
		0.6 m	22260567		5.0 m	22260582	
		1.0 m	22260568		10.0 m	22260583	
		2.0 m	22260569				
Type CI (9.4 mm)		0.3 m	22260562		2.0 m	22260588	
		0.6 m	22260563		5.0 m	22260574	
		1.0 m	22260564		10.0 m	22260575	
		2.0 m	22260565				
Type AD (18 mm)	for pressure switch 2 LEDs PUR cable	0.3 m		22260573	2.0 m		22260589
		0.6 m		22260572	5.0 m		22260590
		1.0 m		22260571	10.0 m		22260591
		2.0 m		22260570			

Suitable field attachable connectors (screw connection)			
Connector			Part number
M8	3-pos.	Connector straight	22260120
	4-pos.	Connector straight	22260134
M12	5-pos.	Connector straight	22260129
		Connector angled	22260130

Description							
Type	Version	Protection	Glands	Description code	3-pin	5-pin	Suitable cable
Type A (18 mm)	PE bridged	without	M16	AB-C3-M16-A	22260048		0027546
		Z-Diode	PG9	AB-C3-P69-A-1L-S	22260050		0027546
Type B (10 mm)	PE bridged, with 1 LED and protective circuit	Z-Diode	PG9	AB-C3-P69-B-1L-S	22260051		0027546
Type BI (11 mm)		Z-Diode	PG9	AB-C3-P69-BI-1L-S	22260052		0027546
Type C (8 mm)		Varistor	PG9	AB-C3-P69-C-1L-SV	22260142		0027546
Type CI (9.4 mm)		Varistor	PG9	AB-C3-P69-CI-1L-SV	22260143		0027546
Type AD (18 mm)	for pressure switch, 2 LEDs	without	M16	AB-C5-M16-AD-2L		22260049	0027532

1d. Selector: Flush-type connectors

S/A

	Flush-type connector with 0.5 m PUR single liz				
	Connection	Number of poles	Mounting type	Article designation	Part number
Front mounting	M8 socket	3	M8 x 0.5 (SW 10 mm)	AB-C3-M8FS-0,5	22260102
		4		AB-C4-M8FS-0,5	22260103
	M8 connector	3		AB-C3-M8MS-0,5	22260100
		4		AB-C4-M8MS-0,5	22260101
	M12 socket	4	M16 x 1.5 (SW 17 mm)	AB-C4-M12FS-M16-0,5	22260107
		4	M16 x 1.5 (SW 17 mm)	AB-C4-M12FS-M16-PO-0,5	22260085
		4	PG9 (SW 17 mm)	AB-C4-M12FS-PG9-0,5	22260114
		4	PG9 (SW 17 mm)	AB-C4-M12FS-PG9-PO-0,5	22260089
		5	M16 x 1.5 (SW 17 mm)	AB-C5-M12FS-M16-0,5	22260105
		5	M16 x 1.5 (SW 17 mm)	AB-C5-M12FS-M16-PO-0,5	22260086
		5	PG9 (SW 17 mm)	AB-C5-M12FS-PG9-0,5	22260111
		5	PG9 (SW 17 mm)	AB-C5-M12FS-PG9-PO-0,5	22260090
	M12 connector	4	M16 x 1.5 (SW 17 mm)	AB-C4-M12MS-M16-0,5	22260108
		4	M16 x 1.5 (SW 17 mm)	AB-C4-M12MS-M16-PO-0,5	22260083
		4	PG9 (SW 17 mm)	AB-C4-M12MS-PG9-0,5	22260113
		4	PG9 (SW 17 mm)	AB-C4-M12MS-PG9-PO-0,5	22260087
		5	M16 x 1.5 (SW 17 mm)	AB-C5-M12MS-M16-0,5	22260106
		5	M16 x 1.5 (SW 17 mm)	AB-C5-M12MS-M16-PO-0,5	22260084
		5	PG9 (SW 17 mm)	AB-C5-M12MS-PG9-0,5	22260112
		5	PG9 (SW 17 mm)	AB-C5-M12MS-PG9-PO-0,5	22260088
Rear mounting	M12 socket	4	PG9 (SW 17 mm)	AB-C4-DSI-M12FS-PG9-0,5	22260118
		5	PG9 (SW 17 mm)	AB-C5-DSI-M12FS-PG9-0,5	22260116
	M12 connector	4	PG9 (SW 17 mm)	AB-C4-DSI-M12MS-PG9-0,5	22260117
		5	PG9 (SW 17 mm)	AB-C5-DSI-M12MS-PG9-0,5	22260115

Suitable fitting nut	
SW [mm]	Part number
10	22260104
19	22260110
18	22260109
19	22260110
18	22260109
19	22260110
18	22260109
18	included
18	included
18	included
18	included

Suitable S/A connection		
Number of poles	straight connector	angled connector
3	C3-M8MS	C3-M8MA
4	C4-M8MS	C4-M8MA
3	C3-M8FS	C3-M8FA
4	C4-M8FS	C4-M8FA
4	C4-M12MS	C4-M12MA
5	C5-M12MS	C5-M12MA
4	C4-M12FS	C4-M12FA
5	C5-M12FS	C5-M12FA
4	C4-M12MS	C4-M12MA
5	C5-M12MS	C5-M12MA
4	C4-M12FS	C4-M12FA
5	C5-M12FS	C5-M12FA

2. Selector: Structured Fieldbus wiring for passive S/A distribution box to PLC I/O



S/A connection (box)					Status indication (box)	Characteristics of S/A distribution box	Article designation	Part number				
Socket**	Number of S/A slots	S/A type of signal	PE-connection	Pins than a single slot						S/A box incl. master cable		
										5.0 m	10.0 m	
M12	4	2-/3-wire, PNP	x	simply	Power-/Signal-LED	S/A distribution box M12 with fixed assembled master cable , PUR, metal thread with quick locking system, drag chain suitable	AB-B4-M12L-4-x,yPUR	22260018	22260019			
	4	2-/3-/4-wire, PNP	x	double			AB-B4-M12L-8-x,yPUR	22260020	22260021			
	4	2-/3-wire, PNP/NPN	x	simply			AB-B4-M12-4-x,yPUR	22260010	22260011			
	4	2-/3-/4-wire, PNP/NPN	x	double			AB-B4-M12-8-x,yPUR	22260012	22260013			
	6	2-/3-wire, PNP	x	simply	Power-/Signal-LED		AB-B6-M12L-6-5.0PUR	22260970				
	8	2-/3-wire, PNP	x	simply			AB-B8-M12L-8-x,yPUR	22260022	22260023			
	8	2-/3-/4-wire, PNP	x	double			AB-B8-M12L-16-x,yPUR	22260024	22260025			
	8	2-/3-wire, PNP/NPN	x	simply			AB-B8-M12-8-x,yPUR	22260014	22260015			
M8	8	2-/3-/4-wire, PNP/NPN	x	double		AB-B8-M12-16-x,yPUR	22260016	22260017				
	M8	4	2-/3-wire, PNP	simply	Power-/Signal-LED	S/A distribution box M8 with fixed assembled master cable , PUR, metal thread, drag chain suitable	AB-B4-M8L-4-x,yPUR	22260026	22260027			
		6	2-/3-wire, PNP				AB-B6-M8L-6-x,yPUR	22260028	22260029			
		8	2-/3-wire, PNP				AB-B8-M8L-8-x,yPUR	22260030	22260031			
10		2-/3-wire, PNP	AB-B10-M8L-10-x,yPUR				22260032	22260033				
								S/A box	Master cable, optional accessories for the S/A box			
									5.0 m	10.0 m	100 m ring	
M8	4	2-/3-wire, PNP		simply	Power-/Signal-LED	S/A distribution box M8 and master cable connection M16	AB-B4-M8L-4-M16	22260034	22260607	22260608		
	6	2-/3-wire, PNP					AB-B6-M8L-6-M16	22260035	22260609	22260610		
	8	2-/3-wire, PNP					AB-B8-M8L-8-M16	22260036	22260611	22260612		
	10	2-/3-wire, PNP					AB-B10-M8L-10-M16	22260037	22260613	22260614		
	4	2-/3-wire, PNP					S/A distribution box M8 and master cable connection M12	AB-B4-M8L-4-M12	22260038	22260615	22260616	
	6	2-/3-wire, PNP						AB-B6-M8L-6-M12	22260039	22260615	22260616	
M12	4	2-/3-wire, PNP/NPN	x	simply	Power-/Signal-LED	S/A distribution box M12 with pluggable master cable connection , metal thread with quick locking system, master cable as bulk stock (optional connection hood 22260009)	AB-B4-M12-4-C	22260005		7038880		
	4	2-/3-wire, PNP	x				AB-B4-M12L-4-C	22260001				
	4	2-/3-/4-wire, PNP/NPN	x	double	Power-/Signal-LED		AB-B4-M12-8-C	22260006		7038881		
	4	2-/3-/4-wire, PNP	x				AB-B4-M12L-8-C	22260002				
	8	2-/3-/4-wire, PNP/NPN	x	simply	Power-/Signal-LED		AB-B8-M12-8-C	22260007				
	8	2-/3-wire, PNP	x				AB-B8-M12L-8-C	22260003				
	8	2-/3-/4-wire, PNP/NPN	x	double	Power-/Signal-LED		AB-B8-M12-16-C	22260008		7038882		
	8	2-/3-/4-wire, PNP	x				AB-B8-M12L-16-C	22260004				

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Legend: *see www.lappgroup.com/products **Screw plug for unoccupied sockets: M12: 22260605, M8: 22260606. Please see detailed technical information on the data sheet (www.lappgroup.com/products).

3. Selector: Bus-compatible S/A boxes active (IP65/67)



Bus	Digital inputs/outputs						Type of connection (M12)/type of signal			Article designation
	Inputs			Outputs			PNP		max. connectable type of connection (input)	
4	8	16	4	8	I _{max} /channel	Sensor	Actuator			
PROFIBUS		x					2-/3-,4-wire		4x 4-wire 3x 4-wire + 2x 3-/2-wire 2x 4-wire + 4x 3-/2-wire 1x 4-wire + 6x 3-/2-wire 8x 3-/2-wire	AB-PB-DI8-M12 22260738
			x				2-/3-,4-wire		8x 4-wire 7x 4-wire + 2x 2-/3-wire 6x 4-wire + 4x 2-/3-wire ... 16x 2-/3-wire	AB-PB-DI16-M12 22260739
	x			x		2 A	2-/3-,4-wire	2-/3-wire	2x 4-wire 1x 4-wire + 2x 2-/3-wire 4x 2-/3-wire	AB-PB-DI4DO4-M12-2A 22260740
		x			x	0,5 A	2-/3-,4-wire	2-/3-wire	4x 4-wire 3x 4-wire + 2x 3-/2-wire 2x 4-wire + 4x 3-/2-wire 1x 4-wire + 6x 3-/2-wire 8x 3-/2-wire	AB-PB-DI8DO8-M12-0,5A 22260762
					x	2 A		2-/3-wire		AB-PB-DO8-M12-2A 22260742
DeviceNet		x					2-/3-,4-wire		4x 4-wire 3x 4-wire + 2x 3-/2-wire 2x 4-wire + 4x 3-/2-wire 1x 4-wire + 6x 3-/2-wire 8x 3-/2-wire	AB-DN-DI8-M12 22260743
			x				2-/3-,4-wire		8x 4-wire 7x 4-wire + 2x 2-/3-wire 6x 4-wire + 4x 2-/3-wire ... 16x 2-/3-wire	AB-DN-DI16-M12 22260744
	x			x		2 A	2-/3-,4-wire	2-/3-wire	2x 4-wire 1x 4-wire + 2x 2-/3-wire 4x 2-/3-wire	AB-DN-DI4DO4-M12-2A 22260745
		x			x	0,5 A	2-/3-,4-wire	2-/3-wire	4x 4-wire 3x 4-wire + 2x 3-/2-wire 2x 4-wire + 4x 3-/2-wire 1x 4-wire + 6x 3-/2-wire 8x 3-/2-wire	AB-DN-DI8DO8-M12A-0,5A 22260763
					x	2 A		2-/3-wire		AB-DN-DO8-M12-2A 22260747
CANopen		x					2-/3-,4-wire		4x 4-wire 3x 4-wire + 2x 3-/2-wire 2x 4-wire + 4x 3-/2-wire 1x 4-wire + 6x 3-/2-wire 8x 3-/2-wire	AB-CAN-DI8-M12 22260748
			x				2-/3-,4-wire		8x 4-wire 7x 4-wire + 2x 2-/3-wire 6x 4-wire + 4x 2-/3-wire ... 16x 2-/3-wire	AB-CAN-DI16-M12 22260749
	x			x		2 A	2-/3-,4-wire	2-/3-wire	2x 4-wire 1x 4-wire + 2x 2-/3-wire 4x 2-/3-wire	AB-CAN-DI4DO4-M12-2A 22260750
		x			x	0,5 A	2-/3-,4-wire	2-/3-wire	4x 4-wire 3x 4-wire + 2x 3-/2-wire 2x 4-wire + 4x 3-/2-wire 1x 4-wire + 6x 3-/2-wire 8x 3-/2-wire	AB-CAN-DI8DO8-M12A-0,5A 22260764
					x	2 A		2-/3-wire		AB-CAN-DO8-M12-2A 22260752

Power connection cable** (power cable) for external and operation voltage				
S/A box	Length	M12 connector straight on M12 socket straight	M12 connector straight on free conductor end	M12 socket straight on free conductor end
		Part number	Part number	Part number
PROFIBUS DeviceNet CANopen	0.3 m	22260784		
	1 m	22260785		
	2 m	22260786	22260778	22260781
	5 m	22260787	22260779	22260782
	10 m	22260788	22260780	22260783

	Pre-assembled bus cables double-sided	Pre-assembled bus cables single-sided		Bus cable as bulk stock	Suitable M12 connector	Suitable EPIC® data connector (9-pos. D-Sub.) (see page 7)	PLC interface
	M12 connector on M12 socket	M12 connector on free conductor end	M12 socket on free conductor end		Part number	Part number	
Length	Part number	Part number	Part number				
0.3 m 1 m 2 m 5 m 10 m	22260773 22260774 22260775 22260776 22260777	22260767 22260768 22260769	22260770 22260771 22260772	see UNITRONIC® bus cables	M12 socket 22260646 M12 connector 22260653	21700507 (35°) 21700506 (35°, PG) 21700504 (90°) 21700503 (90°, PG) 21700530 (90°, LED) 21700529 (90°, PG, LED) 21700543 (90°, ATEX) 21700542 (90°, PG, ATEX) 21700505 (AX)	PROFIBUS
0.3 m 1 m 2 m 5 m 10 m	22260795 22260796 22260797 22260798 22260799	22260789 22260790 22260791	22260792 22260793 22260794	see UNITRONIC® bus cables	M12 socket 22260135 M12 connector 22260136	21700537 (90°) 21700536 (90°, PG) 21700538 (AX)	DeviceNet
0.3 m 1 m 2 m 5 m 10 m	22260795 22260796 22260797 22260798 22260799	22260789 22260790 22260791	22260792 22260793 22260794	see UNITRONIC® bus cables	M12 socket 22260135 M12 connector 22260136	21700537 (90°) 21700536 (90°, PG) 21700538 (AX)	CANopen

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Legend
*see www.lappgroup.com/products
**One operation voltage supply is needed for DI boxes
Operation voltage and external supply voltage is needed for DI/DO boxes
Special cable lengths, other outer sheath materials (e.g. PVC) and individual connector types on request.
Please see detailed technical information on the data sheet (www.lappgroup.com/products).

4. Selector: Bus-compatible S/A boxes active (IP30/IP67)

PLC interface	Digital inputs/outputs							Type of connection/ type of signal		S/A distribution box (active), AS-Interface				Distributor on AS-Interface								Bus cable as bulk stock		
	Inputs			Outputs				PNP		Article designation	Part number	Product features	Type of connection	for 1 AS-Interface flat cable				for 2 AS-Interface flat cable						
														1 m	2 m	5 m	10 m	1 m	2 m	5 m	10 m			
	2	4	8	2	3	4	8	I _{max} /channel	Sensor	Actuator														
AS-Interface		x				x**		3 A	2-/3-wire	2-/3-wire	AB-ASI-DI4DOR4-3A	22260807	AS-Interface module (IP30), LED, metal housing, plug-in connection	Screw/tension plug terminal (see table AS-Interface network components (AB-ASI-XS/AB-ASI-XT))										
		x				x		2 A	2-/3-wire	2-/3-wire	AB-ASI-DI4DO4-2A	22260808				22260800 & Power cable (22260778)	22260800 & Power cable (22260779)	22260800 & Power cable (22260780)		22260801 & Power cable (22260778)	22260801 & Power cable (22260779)	22260801 & Power cable (22260780)		
			x				x	2 A	2-/3-wire	2-/3-wire	AB-ASI-DI8DO8-2A	22260809												
		x					x		1 A	2-/3-wire	2-/3-wire	AB-ASI-M12-DI4DO4-M8-1A	22260759	AS-Interface module (IP67), LED, metal thread	3-pos. M8	22260803	22260804			22260805	22260806			
		x								2-/3-wire	2-/3-wire	AB-ASI-M12-DI4-M8	22260758											
		x			x				2A	2-/3-/4-wire	2-/3-wire	AB-ASI-DI2DO2-M12-2A	22260755		4-pos. M12	integrated bus connection (UNITRONIC® BUS AS-i)								
						x			2 A	2-/3-/4-wire	2-/3-wire	AB-ASI-DI4DO3-M12-2A	22260756											
		x					x		2 A	2-/3-/4-wire	2-/3-wire	AB-ASI-DI4DO4-M12-2A	22260757											
		x								2-/3-/4-wire		AB-ASI-DI4-M12	22260753											
							x		2 A		2-/3-wire	AB-ASI-DO4-M12-2A	22260754											

Legend

*see www.lappgroup.com/products

**Relay contact

Please see detailed technical information on the data sheet (www.lappgroup.com/products).

AS-Interface network components				
Product	Article designation	Part number	Suitable accessories	Part number
AS-Interface network extension with LED diagnostic	AB-ASI-NE200LED	22260813	Distributor M12 on AS-Interface bus cable	22260800
AS-Interface network extension with remote diagnostic	AB-ASI-NE200	22260814		
AS-Interface counter module	AB-ASI-C	22260810	Screw plug terminal (4x4 pos.)	22260817
			Tension plug terminal (4x4 pos.)	22260818
AS-Interface power supply	AB-ASI-PS-1A	22260812		
AS-Interface clip clamp	ASI-clip clamp	61825000		
AS-Interface end sealing	AB-ASI-PC-BK	22260047		
H-Distributor	AB-ASI-J-Y-Y-N	22260802		
Screw plug terminal (4x4 pos.)	AB-ASI-XS4	22260817		
Screw plug terminal (2x16 pos.)	AB-ASI-XS16	22260815		
Tension plug terminal (4x4 pos.)	AB-ASI-XT4	22260818		
Tension plug terminal (8x4 pos.)	AB-ASI-XT16	22260816		
SKINTOP® cable glands, black, M20	SKINTOP® ST-M 20x1,5 BK	53111220	SKINTOP® DIX-M ASI M20, seals for 1 AS-Interface bus cable	53611001
SKINTOP® cable glands, black, M25	SKINTOP® ST-M 25x1,5 BK	53111230	SKINTOP® DIX-M ASI DUO M25, seals for 2 AS-Interface bus cables	53611004
			SKINTOP® DIX-M RJ45 M25, seals for pre-assembled cable with RJ-45 connector	53440980
SKINTOP® cable glands, black, M32	SKINTOP® ST-M 32x1,5 BK	53111240	SKINTOP® DIX-M Fieldbus M32, seals for pre-assembled S/A cable	53440970

