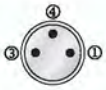
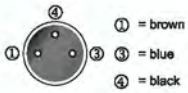
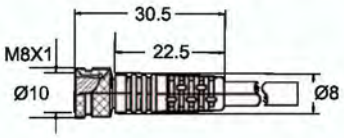
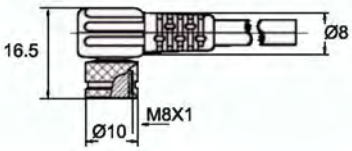
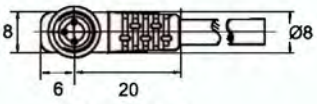
HTM electronics

Sensor Cables & Distribution Boxes

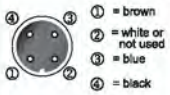
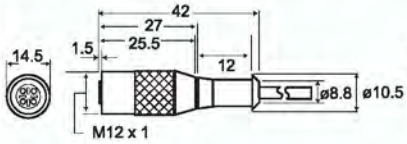
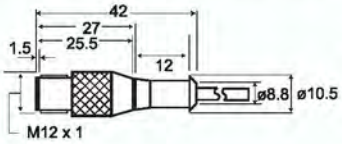
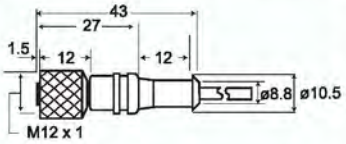
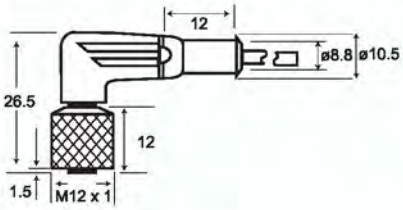
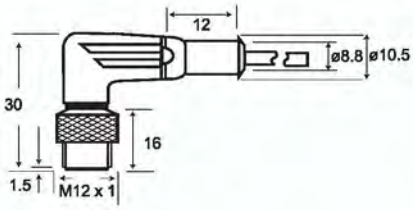
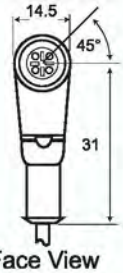
iProcesSmart.com

C Series - M8 Pico Cables

Connection	M8			
Application Class	HNE acc. to DIN 40040 (-25°C / +90°C/ 75% RH)			
Material	Pin	Moulded Body	O-ring	Threaded Connector
	Gold-plated Brass	PVC, TPU, self-extinguishing	Viton	Nickel-plated Brass
Voltage	Operating Voltage	Nominal Power	Nominal Voltage	Test Voltage
	300 VDC	4A	60VAC/75VDC (10-30 VDC for LED models)	1.5 KV eff./60s
Insultaion	Insultaion Group: C acc. to VDE 0110, Insulation Resistance: >10^9			
Protection	IP67 (IP65 for snap-in models)			
Pins	**3 Pin**		**4 Pin**	
		 ① = brown ③ = blue ④ = black		① = brown ② = white ③ = blue ④ = black
	Female	**Male**	**Female**	**Male**
Straight Part Numbers				
	C-FS3TZ-V075	C-MS3TZ-V075	C-FS4TZ-V075	C-MS4TZ-V075
				
Right Angle Part Numbers				
NPN with LED	C-FA3TN-V075			
PNP with LED	C-FA3TP-V075			
Without LED	C-FA3TZ-V075	C-MA3TZ-V075	C-FA4TZ-V075	C-MA4TZ-V075
	 			

PUR cable type is available. Use -Y075 instead of -V075. Different lengths are available
Replace the last digit, ie. 5 for 5m, with the desired length, ie. R-FS4TZ-V0710 for 10m
Consult the technical service team for special configurations.

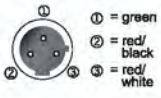
R Series - M12 DC Micro Cables

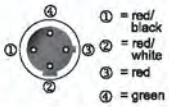
Connection	M12					
Application Class	HNE acc. to DIN 40040 (-25°C / +90°C/ 75% RH)					
Material	Pin	Moulded Body		O-ring	Threaded Connector	
	Gold-plated Brass	PVC, TPU, self-extinguishing		Viton	Nickel-plated Brass	
Voltage	Operating Voltage	Nominal Power	Nominal Voltage		Test Voltage	
	300 VDC	4A (CSA=3A)	250VAC/300VDC (10-30 VDC for LED models)		2.0 KV eff./60s	
Insultaion	Insultaion Group: C acc. to VDE 0110, Insulation Resistance: >10^9					
Protection	IP68					
Pins	**3 Pin**		**4 Pin**		**5 Pin**	
		① = brown ③ = blue ④ = black		 ① = brown ② = white or not used ③ = blue ④ = black		① = brown ② = white ③ = blue ④ = black ⑤ = green/ yellow
	Female	**Male**	**Female**	**Male**	**Female**	**Male**
Straight Part Numbers						
NPN with LED	R-FS4/3TN-V075					
PNP with LED	R-FS4/3TP-V075					
Without LED	R-FS4/3TZ-V075	R-MS4/3TZ-V075	R-FS4TZ-V075	R-MS4TZ-V075	R-FS5TZ-V025	R-MS5TZ-V025
	 Female	 Male	 LED Type			
Right Angle Part Numbers						
NPN with LED	R-FA4/3TN-V075					
PNP with LED	R-FA4/3TP-V075					
Without LED	R-FA4/3TZ-V075	R-MA4/3TZ-V075	R-FA4TZ-V075	R-MA4TZ-V075	R-FA5TZ-V025	R-MA5TZ-V025
	 Female	 Male	 Face View			

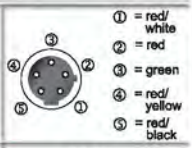
PUR cable type is available. Use -Y075 instead of -V075. Different lengths are available
Replace the last digit, ie. 5 for 5m, with the desired length, ie. R-FS4TZ-V0710 for 10m
Consult the technical service team for special configurations.

U Series - 1/2"-20 AC Micro Cables

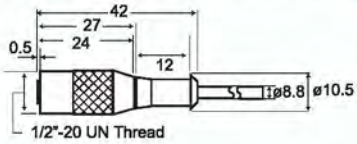
Connection	1/2"-20 UN Thread					
Application Class	HNA acc. to DIN 40040 (-25°C / +90°C/ 75% RH)					
Material	Pin	Moulded Body		O-ring	Threaded Connector	
	Gold-plated Brass	TPU, self-extinguishing		Viton	Nickel-plated Brass	
Voltage	Operating Voltage	Nominal Power	Nominal Voltage		Test Voltage	
	300 VAC	4A	300 VAC		2.0 KV eff./60s (5+ poles: 1.25 KV)	
Insultaion	Insultaion Group: C acc. to VDE 0110, Insulation Resistance: >10^9					
Protection	IP68					
Pins	**3 Pin**		**4 Pin**		**5 Pin**	



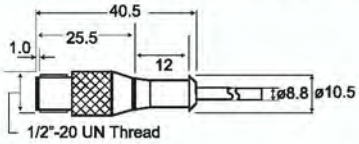




	Female	Male	Female	Male	Female	Male
Straight Part Numbers						
	U-FS3TA-V315	U-MS3TA-V315	U-FS4TA-V165	U-MS4TA-V165	U-FS5TA-V105	U-MS5TA-V105



Female

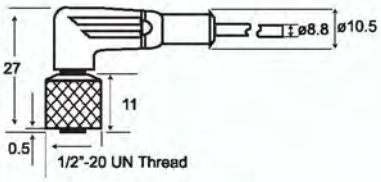


Male

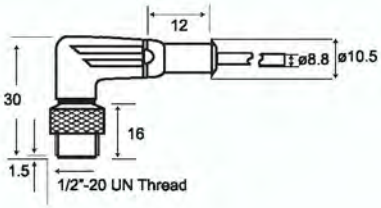
Face View

Right Angle Part Numbers

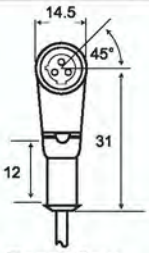
U-FA3TA-V315	U-MA3TA-V315	U-FA4TA-V165	U-MA4TA-V165	U-FA5TA-V105	U-MA5TA-V105



Female



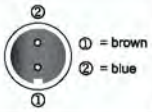
Male

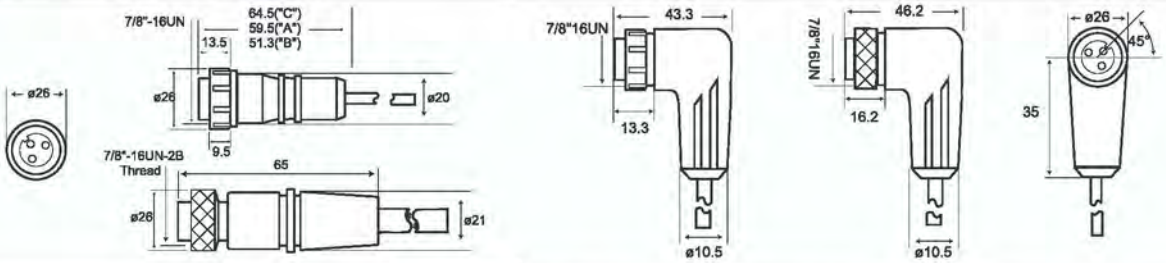


Face View

PUR cable type is available. Use -Y075 instead of -V075. Different lengths are available
Replace the last digit, ie. 5 for 5m, with the desired length, ie. R-FS4TZ-V0710 for 10m
Consult the technical service team for special configurations.

Z Series - 7/8"-16 Mini Cables

Connection	7/8"-16 UN Thread (2 - 5 Pin), 1"-16 UN Thread (8 Pin), 1 1/8"-16 UN THread (12 Pin)					
Application Class	GNA acc. to DIN 40040 (-25°C / +90°C/ 75% RH)					
Material	Pin	Moulded Body		O-ring	Threaded Connector	
	Gold-plated Brass	TPU, self-extinguishing		Viton	Nickel-plated Brass	
Voltage	Operating Voltage	Nominal Power	Nominal Voltage		Test Voltage	
	300 VAC	2 & 3 poles: 12A, 4+ poles: 9A	250 VAC		2 & 3 poles: 2.5 KV eff./60s 4+ poles: 1.5 KV	
Insultaion	Insultaion Group: C acc. to VDE 0110, Insulation Resistance: >10^9					
Protection	IP68					
Pins	**2 Pin**		**3 Pin**		**4 Pin**	
		 ① = brown ② = blue		① = brown ② = yellow/ green ③= blue		① = brown ② = white ③ = blue ④ = black
	Female	Male	Female	Male	Female	Male
Straight Part Numbers						
Plastic Securing Nut	Z-FS2PA-V015	Z-MS2PA-V015	Z-FS3PA-V035	Z-MS3PA-V035	Z-FS4PA-V425	Z-MS4PA-V425
Metal Securing Nut	Z-FS2KA-V015	Z-MS2KA-V015	Z-FS3KA-V035	Z-MS3KA-V035	Z-FS4KA-V425	Z-MS4KA-V425
Right Angle Part Numbers						
Plastic Securing Nut	Z-FA2PA-V015	Z-MA2PA-V015	Z-FA3PA-V035	Z-MA3PA-V035	Z-FA4PA-V425	Z-MA4PA-V425
Metal Securing Nut	Z-FA2KA-V015	Z-MA2KA-V015	Z-FA3KA-V035	Z-MA3KA-V035	Z-FA4KA-V425	Z-MA4KA-V425
Pins	**5 Pin**		**8 Pin**		**12 Pin**	
		① = black ② = blue ③ = green/ yellow ④ = brown ⑤ = white		① = orange ② = blue ③ = white/blk tr ④ = black ⑤ = white ⑥ = red ⑦ = green ⑧ = red/blk tr		1 = orange 2 = blue 3 = white/bl 4 = red/blk 5 = green/b 6 = orange 7 = blue/bl 8 = black/w 9 = green 10 = red 11 = white 12 = black
	Female	**Male**	**Female**	**Male**	**Female**	**Male**
Straight Part Numbers						
Plastic Securing Nut	Z-FS5PA-V025	Z-MS5PA-V025	Z-FS8PA-V475	Z-MS8PA-V475	Z-FS12PA-V615	Z-MS12PA-V615
Metal Securing Nut	Z-FS5KA-V025	Z-MS2KA-V025	Z-FS8KA-V475	Z-MS8KA-V475	Z-FS12KA-V615	Z-MS12KA-V615
For Boxes					Z-FS12KA-A615	
Right Angle Part Numbers						
Plastic Securing Nut	Z-FA5PA-V025	Z-MA5PA-V025	Z-FA8PA-V475	Z-MA8PA-V475	Z-FA12PA-V615	Z-MA12PA-V615
Metal Securing Nut	Z-FA5KA-V025	Z-MA5KA-V025	Z-FA8KA-V475	Z-MA8KA-V475	Z-FA12KA-V615	Z-MA12KA-V615
For Boxes					Z-FA12KA-A615	



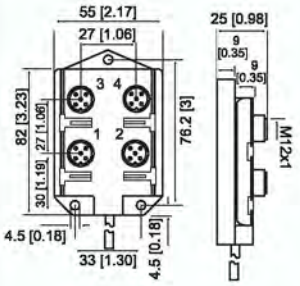
PUR cable type is available. Use -Y075 instead of -V075. Different lengths are available
Replace the last digit, ie. 5 for 5m, with the desired length, ie. R-FS4TZ-V0710 for 10m
Consult the technical service team for special configurations.

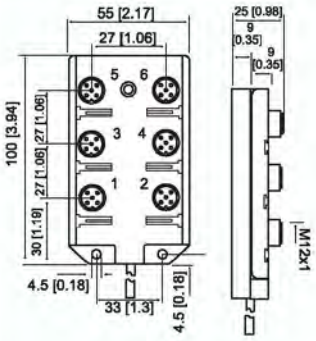
DC Prewired Cable Boxes

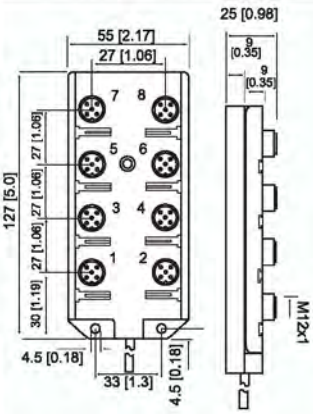
Technical Data

Application Class:	-15°C to +90°C	Insulation Resistance:	>10^9Ω
Materials:		**Mechanical Data**	
Housing:	PUR/PVC	Insertion Force:	
Contact:	Brass, Gold over Nickel-platting	Contact:	≤2.0 N (0.45lbs)
Receptacle Shell:	Brass, Nickel-platted	**Withdrawl Force:**	
Insert:	PUR (black)	Contact:	≥0.5 N (0.11lbs)
O-Ring:	Viton	Protection:	IP68, NEMA 6P (in fully locked position)
Electrical Data		Shock:	IEC-68-2-27
Contact Resistance:	≤5mΩ	Vibration:	IEC-68-2-6
Current Rating:	4 amps per outlet, Max. 12 Amps per box	**CE Conformity:**	EN50082-1, EN50082-2, IEC60947-5-2
Working Voltage:	10-30 VDC		

PVC Jacket Material	4 Ports	6 Ports	8 Ports
Part Number			
Without LEDs	ASTR4-5/4UZ-1005	DSTR6-5/4UZ-1105	DSTR8-5/4UZ-1205
NPN with LEDs - N.O.	ASTR4-5/4NA-1005	DSTR6-5/4NA-1105	DSTR8-5/4NA-1205
NPN with LEDs - N.C.	ASTR4-5/4NB-1005	DSTR6-5/4NB-1105	DSTR8-5/4NB-1205
PNP with LEDs - N.O.	ASTR4-5/4PA-1005	DSTR6-5/4PA-1105	DSTR8-5/4PA-1205
PNP with LEDs - N.C.	ASTR4-5/4PB-1005	DSTR6-5/4PB-1105	DSTR8-5/4PB-1205
PNP Dual input (2 LEDs)	ALTR4-5/5DC-1305	DLTR6-5/5DC-3405	DLTR8-5/5DC-3805
NPN Dual input (2 LEDs)	ALTR4-5/5EC-1305	DLTR6-5/5EC-3405	DLTR8-5/5EC-3805
PUR Jacket Material			
Part Number			
Without LEDs	ASTR4-5/4UZ-3005	DSTR6-5/4UZ-3305	DSTR8-5/4UZ-3205
NPN with LEDs - N.O.	ASTR4-5/4NA-3005	DSTR6-5/4NA-3305	DSTR8-5/4NA-3205
NPN with LEDs - N.C.	ASTR4-5/4NB-3005	DSTR6-5/4NB-3305	DSTR8-5/4NB-3205
PNP with LEDs - N.O.	ASTR4-5/4PA-3005	DSTR6-5/4PA-3305	DSTR8-5/4PA-3205
PNP with LEDs - N.C.	ASTR4-5/4PB-3005	DSTR6-5/4PB-3305	DSTR8-5/4PB-3205
PNP Dual input (2 LEDs)	ALTR4-5/5DC-3005	DLTR6-5/5DC-3405	DLTR8-5/5DC-3805
NPN Dual input (2 LEDs)	ALTR4-5/5EC-3005	DLTR6-5/5EC-3405	DLTR8-5/5EC-3805



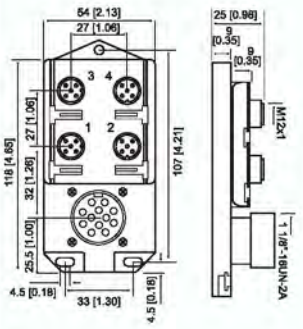
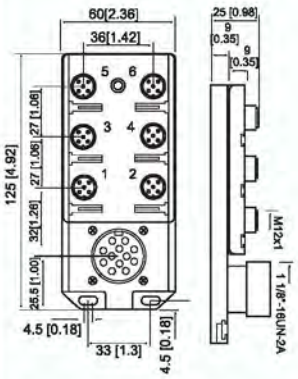
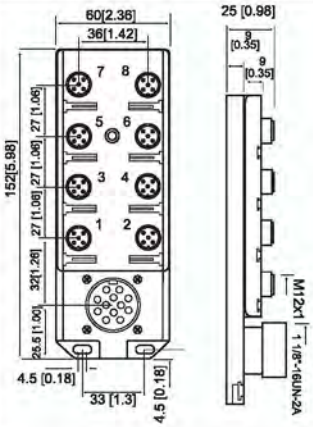




DC 1 1/8"-16 MINI Quick Disconnect Cable Boxes

Technical Data

Application Class:	-15°C to +90°C	Insulation Resistance:	>10⁹Ω
Materials:		**Mechanical Data**	
Housing:	PUR/PVC	Insertion Force:	
Contact:	Brass, Gold over Nickel-platting	Contact:	≤2.0 N (0.45lbs)
Receptacle Shell:	Brass, Nickel-platted	**Withdrawl Force:**	
Insert:	PUR (black)	Contact:	≥0.5 N (0.11lbs)
O-Ring:	Viton	Protection:	IP68, NEMA 6P (in fully locked position)
Electrical Data		Shock:	IEC-68-2-27
Contact Resistance:	≤5mΩ	Vibration:	IEC-68-2-6
Current Rating:	4 amps per outlet, Max. 12 Amps per box	**CE Conformity:**	EN50082-1, EN50082-2, IEC60947-5-2
Working Voltage:	10-30 VDC		

1 1/8"-16 UN Connector	4 Ports	6 Ports	8 Ports
Part Number			
Without LEDs	ALTR4-5/4UZ-TZ12	DLTR6-5/4UZ-TZ12	DLTR8-5/4UZ-TZ12
NPN with LEDs - N.O.	ALTR4-5/4NA-TZ12	DLTR6-5/4NA-TZ12	DLTR8-5/4NA-TZ12
NPN with LEDs - N.C.	ALTR4-5/4NB-TZ12	DLTR6-5/4NB-TZ12	DLTR8-5/4NB-TZ12
PNP with LEDs - N.O.	ALTR4-5/4PA-TZ12	DLTR6-5/4PA-TZ12	DLTR8-5/4PA-TZ12
PNP with LEDs - N.C.	ALTR4-5/4PB-TZ12	DLTR6-5/4PB-TZ12	DLTR8-5/4PB-TZ12
			

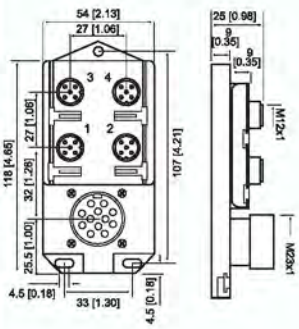
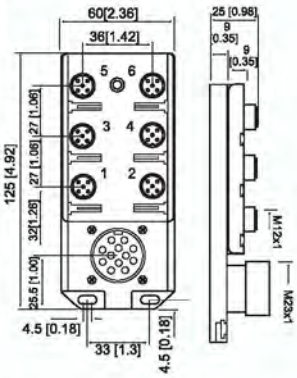
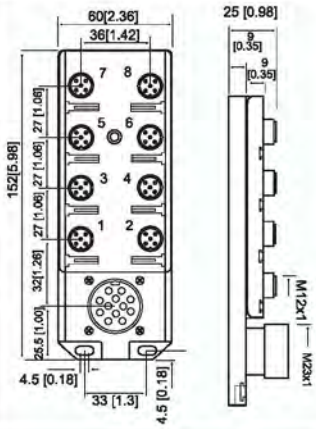
Mating Cables: Z-FS12KAA615 (Straight)
Z-FA12KAA615 (90°)

For more information on these mating cables, see 12 -pin Connector Cables for boxes on page 5.

DC M23 Quick Disconnect Cable Boxes

Technical Data

Application Class:	-15°C to +90°C	Insulation Resistance:	>10⁹Ω
Materials:		**Mechanical Data**	
Housing:	PUR/PVC	Insertion Force:	
Contact:	Brass, Gold over Nickel-platting	Contact:	≤2.0 N (0.45lbs)
Receptacle Shell:	Brass, Nickel-platted	**Withdrawl Force:**	
Insert:	PUR (black)	Contact:	≥0.5 N (0.11lbs)
O-Ring:	Viton	Protection:	IP68, NEMA 6P (in fully locked position)
Electrical Data		Shock:	IEC-68-2-27
Contact Resistance:	≤5mΩ	Vibration:	IEC-68-2-6
Current Rating:	4 amps per outlet, Max. 12 Amps per box	**CE Conformity:**	EN50082-1, EN50082-2, IEC60947-5-2
Working Voltage:	10-30 VDC		

M23x1 Connector	4 Ports	6 Ports	8 Ports
Part Number			
Without LEDs	ALTR4-5/4UZ-T12	DLTR6-5/4UZ-T12	DSTR8-5/4UZ-T12
NPN with LEDs - N.O.	ALTR4-5/4NA-T12	DLTR6-5/4NA-T12	DSTR8-5/4NA-T12
NPN with LEDs - N.C.	ALTR4-5/4NB-T12	DLTR6-5/4NB-T12	DSTR8-5/4NB-T12
PNP with LEDs - N.O.	ALTR4-5/4PA-T12	DLTR6-5/4PA-T12	DSTR8-5/4PA-T12
PNP with LEDs - N.C.	ALTR4-5/4PB-T12	DLTR6-5/4PB-T12	DSTR8-5/4PB-T12
PNP Changeover (2 LEDs)	ALTR4-5/5DC-T19	DLTR6-5/5DC-T19	DLTR8-5/5DC-T19
NPN Changeover (2 LEDs)	ALTR4-5/5EC-T19	DLTR6-5/5DC-T19	DLTR8-5/5EC-T19
			

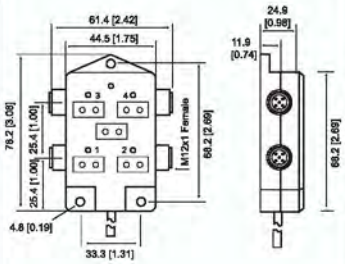
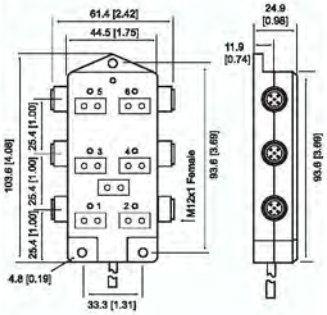
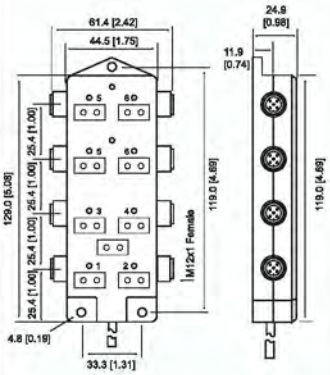
Mating Cables: HFS-12P-3905 (12-pin straight)
HFA-12P-3905 (12-pin 90°)
HFS-19P-3805 (19-pin straight)
HFA-19P-3805 (19-pin 90°)

For more information on these mating cables, see M23 Connector Cables on page 11

DC Side Port Cable Boxes

Technical Data

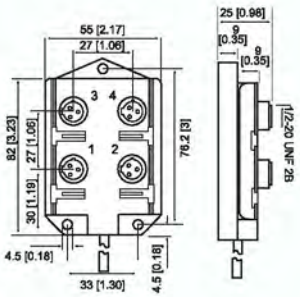
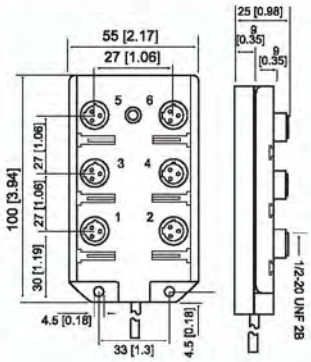
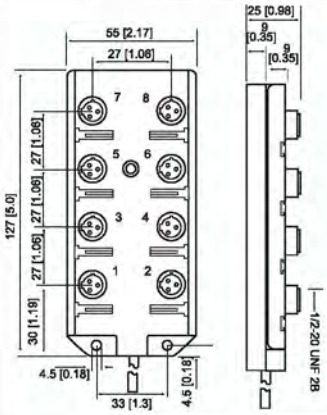
Application Class:	-15°C to +90°C
Materials:	
Housing:	Nylon 6/6
Contact:	Brass, Gold over Nickel-platting
Receptacle Shell:	Brass, Black Nickel-platted
Insert:	PUR (black)
O-Ring:	Nitrile Rubber
Electrical Data	
Contact Resistance:	≤5mΩ
Current Rating:	4 amps per outlet, Max. 12 Amps per box
Working Voltage:	10-30 VDC
Insulation Resistance:	>10^9Ω
Mechanical Data	
Insertion Force:	
Contact:	≤2.0 N (0.45lbs)
Withdrawl Force:	
Contact:	≥0.5 N (0.11lbs)
Protection:	IP68, NEMA 6P (in fully locked position)
Shock:	IEC-68-2-27
Vibration:	IEC-68-2-6
CE Conformity:	EN50082-1, EN50082-2, IEC60947-5-2

	4 Ports	6 Ports	8 Ports
Part Number			
NPN with LEDs	ASSR4-5/3NA-1005	ASSR6-5/3NA-1105	ASSR8-5/3NA-1205
PNP with LEDs	ASSR4-5/3PA-1005	ASSR6-5/3PA-1105	ASSR8-5/3PA-1205
			

AC Prewired Cable Boxes

Technical Data

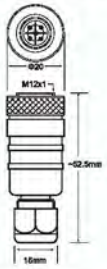
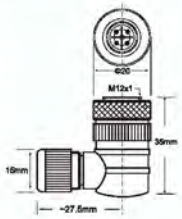
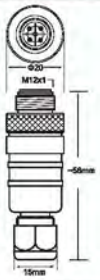
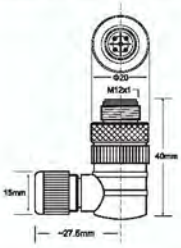
Application Class:	-15°C to +90°C	Insulation Resistance:	>10⁹Ω
Materials:		**Mechanical Data**	
Housing:	PUR/PVC	Insertion Force:	
Contact:	Brass, Gold over Nickel-platting	Contact:	≤2.0 N (0.45lbs)
Receptacle Shell:	Brass, Nickel-platted	**Withdrawl Force:**	
Insert:	PUR (black)	Contact:	≥0.5 N (0.11lbs)
O-Ring:	Viton	Protection:	IP68, NEMA 6P (in fully locked position)
Electrical Data		Shock:	IEC-68-2-27
Contact Resistance:	≤5mΩ	Vibration:	IEC-68-2-6
Current Rating:	4 amps per outlet, Max. 12 Amps per box	**CE Conformity:**	EN50082-1, EN50082-2, IEC60947-5-2
Working Voltage:	250 VAC		

PUR Jacket Material	4 Ports	6 Ports	8 Ports
Part Number			
AC Without LEDs	ASTU4-3/34AZ-2305	DSTU6-5/3AZ-2405	DSTU8-3/3AZ-2505
			

Connectors

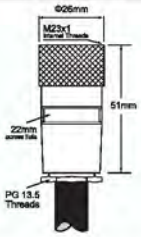
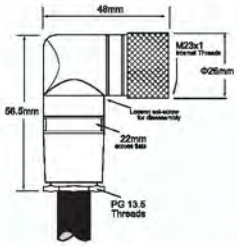
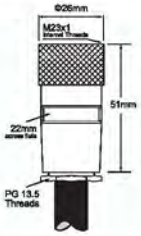
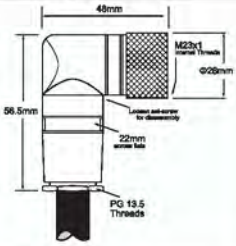
Field Connectors

Application Class:	HNA acc. to DIN 40040 (-40°C to +90°C ≤100%rF)	Lock Nut:	Nickel-plated Brass
Moulded Body:	PA, Self-extinguishing	Protection:	IP67
Nominal Power:	4A	Connection Mode:	Screw Clamps
Nominal Voltage:	125 VAC/150 VDC	Insulation Group:	C acc. to VDE 0110
Contact:	CuZn, 2-4UM/CuSnZn	Test Voltge:	1.25 KV, eff./60s
O-Ring:	NBR	Insulation Resistance:	>10⁵Ω

Part Number	R-FS4KZPG7	R-FA4KZPG7	R-MS4KZPG7	R-MA4KZPG7
Poles	4	4	4	4
Max. Wire Section	18 AWG	18 AWG	18 AWG	18 AWG
SW...	15	15	15	15
Screw Joint for Cables	PG7 (Φ4.0-6.0mm)	PG7 (Φ4.0-6.0mm)	PG7 (Φ4.0-6.0mm)	PG7 (Φ4.0-6.0mm)
Diagrams				

M23 Connector Cables

Application Class:	-25°C to +110°C			Current Rating:	7.5Amps
Materials:	Body:	CuZn, brass, nickel-plated		Working Voltage:	60 VAC / 75 DC
	Contact:	CuZn. pre-nickeled and gold-plated		Dielectric Withstanding:	1.5 kVAC eff./60 seconds
	Coupling Nut:	CuZn, brass, nickeled		Insulation Resistnace:	>10⁵Ω
	Insert:	PBTP, GF	Mechanical Data:	Insertion Force:	≤2.0N (0.45 lbs)
	O-ring:	Viton		Withdrawl Force:	≥0.5N (0.11 lbs)
Electrical Data:	Contact Resistance:	≤5mΩ		Protection:	IP65
				Mode of Termination:	Solder types

Part Number	HFS-12P-3905	HFA-12P-3905	HFS-19P-3805	HFA-19P-3805
Poles	12	12	19	19
Cable Guage	22 AWG	22 AWG	3 x17 AWG, 16 x 20 AWG	3 x17 AWG, 16 x 20 AWG
Cable Diameter	Φ12.8mm	Φ12.8mm	Φ11.6mm	Φ11.6mm
Diagrams				

HTM electronics

Sensor Solutions Made Simple

Proximity Sensors

Wide Variety At Low Prices
Long Range
Metal Faced
Weld Field Immune
Miniature Proximity

Safety Light Curtains

Category 4 Safety
Category 2 Safety
Finger Protection (14mm)
Hand Protection (30mm)
Body Protection (Access)

Photoelectric Sensors

Through Beam
Retro-reflective
Diffuse / Distance / Contrast
Background Suppression
Polarized / Clear Object

Laser Sensors

Diffuse
Push Button Set-up
Retro-reflective
Through Beam
Temperature Sensors

Cables & Boxes

M12 Micro & AC 1/2 20
M8 Pico & 7/8" x 16 Mini
Double Ended Cables
Distribution Boxes

Sensor Accessories

NPN / PNP Sensor Tester
Mounting Brackets
Spring Mounts
Power Supplies
Connectors

WWW.HTM-SENSORS.COM

HTM electronics industries
8651 Buffalo Avenue, Niagara Falls, NY 14304
(800) 644-1756 Fax: (888) 283-2127
www.htm-sensors.com / custserv@htm-sensors.com