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Datasheet

AK12

Measuring cable
for active sensors

AK12.4 Standard measuring cable

ideal in an EMC-critical environment
according to DIN 47100 with UL approval,
robust, for mobile and stationary use
double shielded for high signal quality
12-pin connector on both sides, straight design

AK12.2 Measuring cable

thin, highly flexible cable according to DIN 47100 (NOT for DRVL, DRDL, DRBK and DRBL!)
for mobile devices and short connections up to 5 m
12-pin connector on both sides, straight design

AK12.5 Robot cable

Suitable for cable carriers.
Use in stationary use with constant movement, according to DIN 47100
Connection and control cable for bending and torsion applications under harsh operating conditions
12-pin connector on both sides, straight design

Technical Specifications

	AK12.4 (Standard)	AK12.2	AK12.5
Measuring cable	4 x 0.14 mm² + 6 x 0.14 mm² + 2 x 0.25 mm²	12 x 0.05 mm²	12 x 0.14mm²
Rated voltage	150 V	100 V	48 V/AC
Outside-Ø	approx. 6.9 mm	approx. 4.8 mm	approx. 6.7 mm
Bending radius fixed installation moving use	 10 x Outer diameter 15 x Outer diameter	 >10 x Outer diameter	 4 x Outer diameter 15 x Outer diameter
Temperature range fixed installation moving use	 -30°C up to +80°C -20°C up to +80°C	 -20°C up to +70°C -5°C up to +70°C	 -50°C up to +80°C -40°C up to +80°C
Protection class	IP40 (optional IP67)	IP40 (optional IP67)	IP40 (optional IP67)
Oversheath	PUR, matt, flame retardant, low adhesion	S-PVC according to VDE0207	PUR, UV-resistant, oil-resistant, Suitable for outdoor use
Oversheath-colour	black (RAL 9005)	black (RAL 9005)	black (RAL 9005)

Cabel length

2.5 m
5.0 m
10 m (only AK 12.4 and AK 12.5)
Other lengths on request

Option B with angle connector

B0 = measuring cable led away to the right of the measuring side
B90 = measuring cable led away in the direction of the drive side
B180 = measuring cable led away the left of the measuring side
B270 = measuring cable led away in the direction of the measuring side

Option F

Measuring cable with open end wires

Option IP67

Connector with higher protection class

Ordering Code

AK [ ] [ ] [ ] [ ] x [ ]

Standard measuring cable ⇨ 12.4
double shielded
4 x 0,14 mm²+ 6 x 0,14 mm² + 2 x 0,25 mm²
Ø approx. 6,9 mm
12-pin straight connector on both sides

Measuring cable ⇨ 12.2
(NOT for DRVL,DRDL, DRBK!)
12 x 0,05 mm² Ø approx. 4,8 mm
12-pin straight connector on both sides

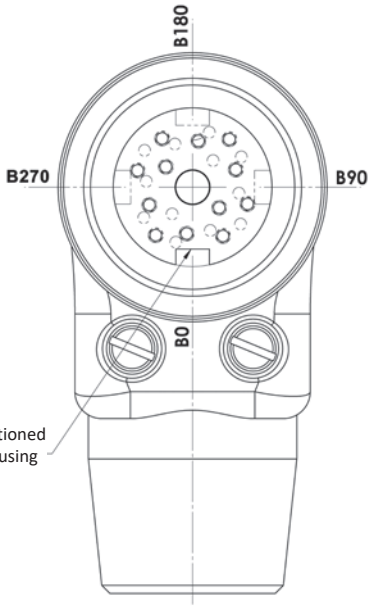
Robot cable, suitable for cable carriers ⇨ 12.5
12 x 0,14 mm²
Ø approx. 6,7 mm
12-pin straight connector on both sides

Option B: Angle plug
Measuring cable...
- to the right of the measuring side ⇨ B0
- Direction of the drive side ⇨ B90
- to the left of the measuring side ⇨ B180
- Moved away towards the measuring side ⇨ B270

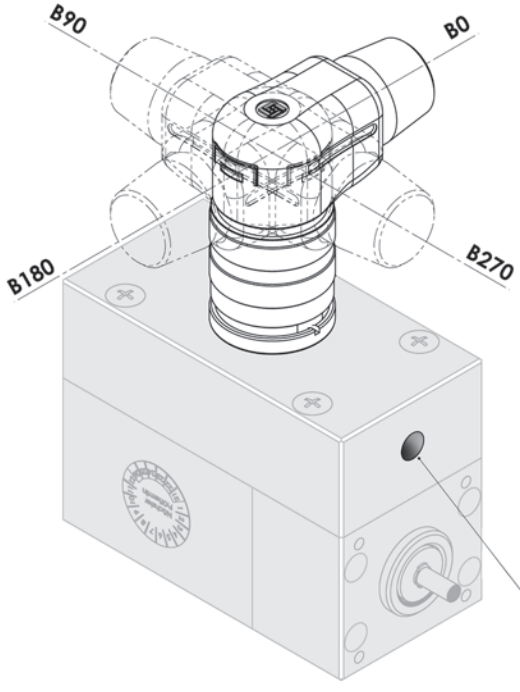
Cable length
2,5m
5m
10m (only AK 12.4 and AK 12.5)
other lengths on request

Option IP67:
IP67 ⇨ Plug IP67

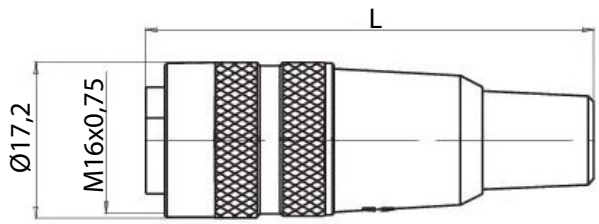
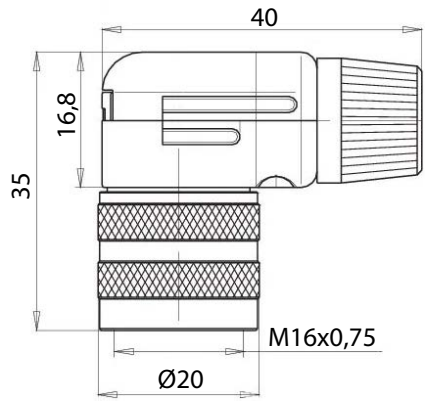
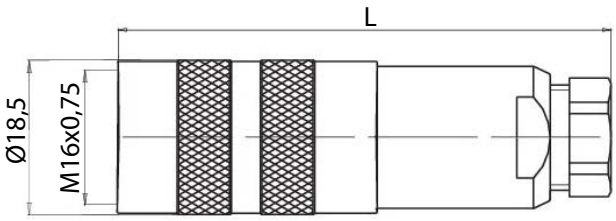
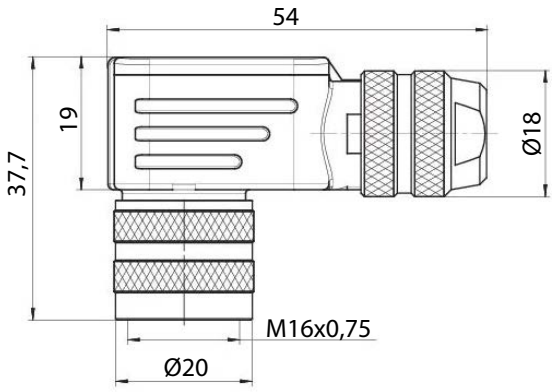
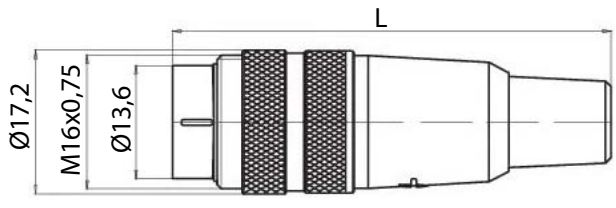
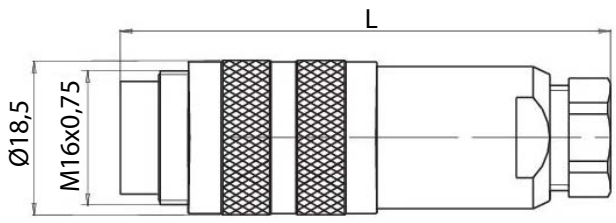
Option F:
F ⇨ with open ended wires
(only AK 12.4 and AK 12.5)



The torsion sleeve can be positioned every 90 ° in the connector housing

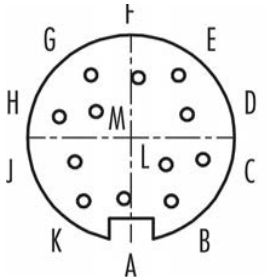


Plug dimensions

Cable socket, connection sensor side (standard)	
For cable type AK12.2 L = 63	
For cable types AK12.4 and AK12.5 L = 50	
Angled socket, connection sensor side (option B)	
The same for all cable types (AK12.2 / AK12.4 / AK12.5).	
Cable socket IP67, connection sensor side (option IP67)	
For cable type AK12.2 L = 60	
For cable types AK12.4 and AK12.5 L = 58	
Angled socket IP67, connection sensor side (option B with IP67)	
The same for all cable types (AK12.2 / AK12.4 / AK12.5).	
Cable connector, connection evaluation device (standard)	
For cable type AK12.2 L = 66	
For cable types AK12.4 and AK12.5 L = 53	
Cable connector IP67, connection evaluation device (option IP67)	
For cable type AK12.2 L = 58	
For cable types AK12.4 and AK12.5 L = 62	

Pin assignment of 12-pin connector for active sensors

AK12.4 standard measuring cable



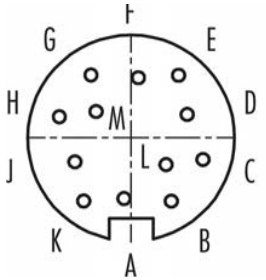
Contact arrangement
(Plug-in side)

Pin	Colour	Connection DRVL	Connection DRDL	Connection DRBK DRBK | DRBL	Connection active static sensores	Connection DRFN | DRFS | DRFSK
A	green	frequency output	NC	message ready-to-run	NC	NC
B	red -blue	angle output track B = 90°	angle output track B = 90°	NC	NC	Angle exit track B = 90 °
C	yellow	voltage output	voltage output small measuring range	voltage output	voltage output	voltage output
D	white	ground (voltage/ frequency output)	ground (voltage output)	ground (voltage output)	ground (voltage output)	ground (voltage output)
E	grey	ground (supply, rpm/ angle output)	ground (supply, rpm/ angle output)	ground (supply, rpm/ current output)	ground (supply)	ground (supply, rpm/ angle output)
F	pink	supply +10... 28.8V	supply +12V	supply +11.5...28.8V	supply +12V	supply +12V
G	grey-pink	rpm/ angle output track A = 0°	rpm/ angle output track A = 0°	rpm output	NC	rpm/ angle output track A = 0°
H	purple	memory chip	memory chip small measuring range	memory chip	memory chip	memory chip
J	black	message ready-to-run	memory chip large measuring range	NC	NC	NC
K	red	control input	control input	NC	control input	control input
L	brown	inverted frequency output	voltage output large measuring range	current output	NC	NC
M	blue	voltage reference angle signal	NC	NC	NC	NC

In the case of cables with a free cable end, connect both shields (outer and inner) to the shielding.

Pin assignment of 12-pin connector for active sensors

AK12.5 Robot cable

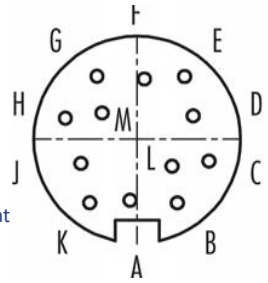


Contact arrangement
(Plug-in Side)

Pin	Colour	Connection DRVL	Connection DRDL	Connection DRBK DRBK | DRBL	Connection active static sensores	Connection DRFN | DRFS | DRFSK
A	black	frequency output	NC	message ready-to-run	NC	NC
B	red	angle output track B = 90°	angle output track B = 90°	NC	NC	Angle exit track B = 90 °
C	brown	voltage output	voltage output small measuring range	voltage output	voltage output	voltage output
D	white	ground (voltage/ frequency output)	ground (voltage output)	ground (voltage output)	ground (voltage output)	ground (voltage output)
E	yellow	ground (supply, rpm/ angle output)	ground (supply, rpm/ angle output)	ground (supply, rpm/ current output)	ground (supply)	ground (supply, rpm/ angle output)
F	purple	supply +10... 28.8V	supply +12V	supply +11.5...28.8V	supply +12V	supply +12V
G	preen	rpm/ angle output track A = 0°	rpm/ angle output track A = 0°	rpm output	NC	rpm/ angle output track A = 0°
H	pink	memory chip	memory chip small measuring range	memory chip	memory chip	memory chip
J	grey	message ready-to-run	memory chip large measuring range	NC	NC	NC
K	grey-pink	control input	control input	NC	control input	control input
L	blue-red	inverted frequency output	voltage output large measuring range	current output	NC	NC
M	blue	voltage reference angle signal	NC	NC	NC	NC

Pin assignment of 12-pin connector
Thin cable for mobile, small, active sensors *

AK12.2 Measurement cable



Contact arrangement
(Plug-in Side)

Pin	Colour	Connection active static sensores	Connection DRFN | DRFS | DRFSK
A	black	NC	NC
B	red	NC	Angle exit track B = 90 °
C	brown	voltage output	voltage output
D	white	ground (voltage output)	ground (voltage output)
E	yellow and white-yellow	ground (supply)	ground (supply, rpm/ angle output)
F	purple and brown-green	supply +12V	supply +12V
G	green	NC	rpm/ angle output track A = 0°
H	pink	memory chip	memory chip
J	grey	NC	NC
K	grey-pink	control input	control input
L	blue-red	NC	NC
M	Blue and shield	NC	NC

* Do not use for DRVL-, DRDL- ,DRBK- and DRBL-series!

More Cables

Connection cable GMV2- switchbox / Communication cable

Serial cable AK-4 GMV2 / PC 9-pin

Connection cable GMV2- switchbox

Sub-D 9pin BU/ST 2.5 m