

# Connectors



INFRA offers a wide range of connectors that comply with the reliability and application requirements in the field of industrial automation.

- Straight or 90° connectors
- M12 and M8 models
- PVC cable for standard applications
- PUR cable for moving applications
- Cable length up to 40 m
- UL/CSA approval



## PVC cable connectors

These cables are suitable for medium mechanical stresses in dry environment, can be mounted on machine tools and packing machines and furthermore on assembly and production lines. They can stand to a limited extent oils, chemical substances and abrasion.

## PUR cable connectors

These cables are conceived for being used in robotic field, on machine tools, in assembly and production lines and furthermore in shaving removal working. They are made without silicon and varnish potted substances and they can highly stand abrasion. Besides the external sleeve can highly stand oils and chemical substances and can bear the use of cables chains. The external sleeve has been realised through a co-extrusion process with external part in PUR and internal part in PVC. Single wires are isolated with PVC.

## Male/Female connectors to be wired

When manufacturing small series and special tools, you need to create freely flexible lines for sensors. M8 and M12 connectors to be wired meet in the most satisfactory way this requirement. The angle model is 90° rotating. Once connected, all the models comply with IP67 protection degree norms.

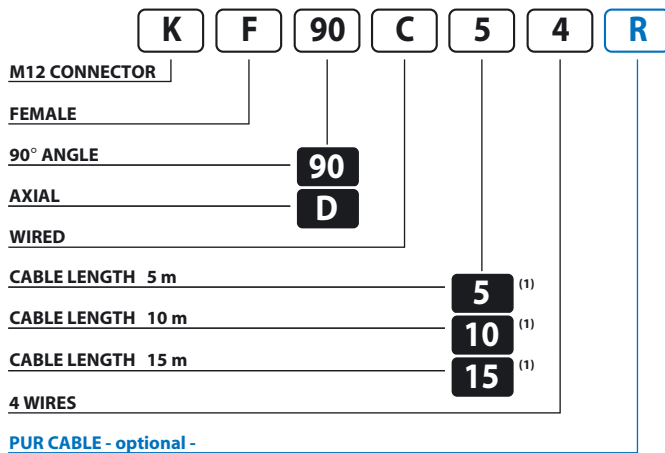
# M12 3 and 4 Wires Female Connectors with cable

Suitable for:

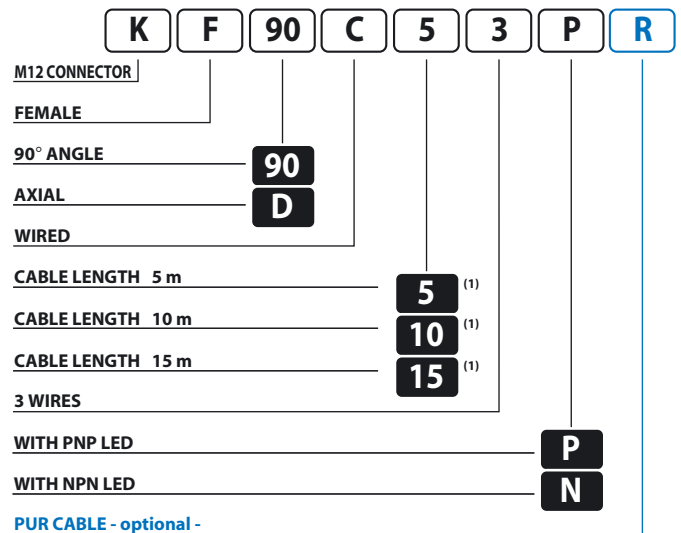
- 18, MF, FQ series photocells (K output)
- IS and ISM series inductive sensors (K output)



## M12 4 wires identification code



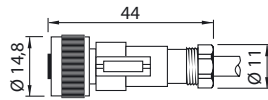
## M12 3 wires with led identification code



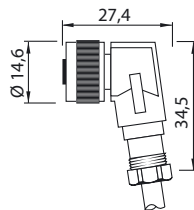
(1) Note: other cable length, from 1 m up to 40 m, available on request.

## Dimensions (mm)

View of M12 straight female connector

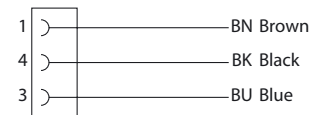


View of M12 90° female connector

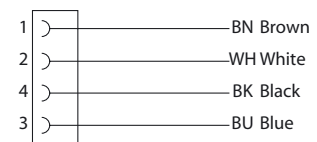


## Contacts configuration

M12 3 wires female connector



M12 4 wires female connector



## Technical data of M12 female connectors

	PVC CABLE	PUR CABLE
CONNECTOR POLARITY IN ACCORDANCE WITH IEC 61067-2 101	3 and 4 wires	3 and 4 wires
NOMINAL VOLTAGE IN ACCORDANCE WITH DIN VDE 0110 (III/3) E IEC 60664 -1	320 V DC / 250 V AC	320 V DC / 250 V AC
NOMINAL VOLTAGE	4 A	4 A
CONTACT RESISTANCE	< 5 m Ω	< 5 m Ω
TEST VOLTAGE IN ACCORDANCE WITH DIN VDE 0110	2,5 KV	2,5 KV
CONTACTS MATERIAL	CuSn	CuSn
CONTACTS SURFACE COVERING MATERIAL	Au	Au
CONNECTOR MATERIAL	TPU (thermoplastic polyurethane) hardly inflammable and self extinguish	
CONNECTOR COLOUR	Grey - RAL 7035	Grey - RAL 7035
CONNECTOR USE TEMPERATURE	-25° / +90°C	-25° / +90°C
PROTECTION DEGREE IN ACCORDANCE WITH EN 60529 (IEC 60529 AND DIN VDE 0470-1)	IP 67	IP 67
WIRING NUT FEATURES	14,8 mm external dia, M12x1 threading	14,8 mm external dia, M12x1 threading
CABLE TYPE	PVC/PVC	PUR/PVC
EXTERNAL SLEEVE COLOUR	Grey - RAL 7001	Grey - RAL 7001
CABLE EXTERNAL DIAMETER	3 and 4 wires = 5,2 mm (± 0,2 mm)	3 and 4 wires = 5,2 mm (± 0,2 mm)
WIRES SLEEVE MATERIAL	PVC	PVC
NO. OF CONDUCTORS ON CABLE SECTION	3 x 0,34 mm <sup>2</sup> and 4 x 0,34 mm <sup>2</sup>	3 x 0,34 mm <sup>2</sup> and 4 x 0,34 mm <sup>2</sup>
WIRES COLOUR	in accordance with din DIN 0293	in accordance with din DIN 0293
CONDUCTORS STRUCTURE	42 x 0,1 mm in class 6	42 x 0,1 mm in class 6
CABLE BENDING RADIUS	15 times external diameter moving installation 10 times external diameter steady installation	15 times external diameter moving installation 10 times external diameter steady installation
TEMPERATURE LIMITS	-30°C / +70°C (steady installation)	-30°C / +90°C (steady installation)
ISOLATION VOLTAGE	2500 V; 50 Hz; 5 min.	2500 V; 50 Hz; 5 min.
CABLE MARKS	PVC/PVC UL/CSA	PUR/PVC UL/CSA
WEIGHT	5 m 190 g • 10 m 380 g • 15 m 520 g	

# M8 3 and 4 Wires Female Connectors with cable

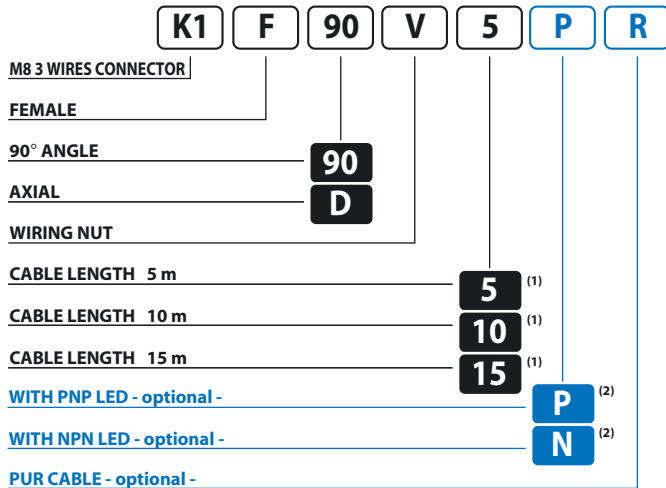


Suitable for:

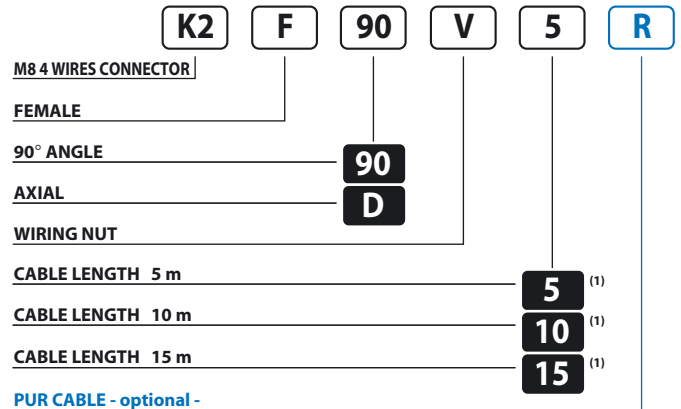
- IS series inductive sensors (K1 output)
- FF and AF series photocells (K2 output)
- CS series capacitive sensors (K2 output)



## M8 3 wires with led identification code



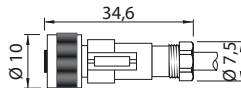
## M8 4 wires identification code



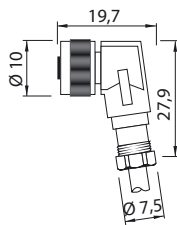
(1) Note: other cable length, from 1 m up to 40 m, available on request.  
 (2) Note: available only for 90° models.

## Dimensions (mm)

View of M8 straight female connector

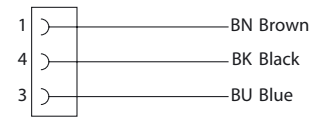
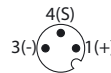


View of M8 90° female connector

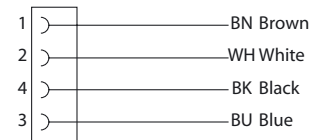


## Contacts configuration

M8 3 wires female connector



M8 4 wires female connector



## Technical data of M8 female connectors

	PVC CABLE	PUR CABLE
CONNECTOR POLARITY IN ACCORDANCE WITH IEC 61067-2-101	3 and 4 wires	3 and 4 wires
NOMINAL VOLTAGE IN ACCORDANCE WITH DIN VDE 0110 (III/3) E IEC 60664 -1	100 V dc (160 V in cat. II)	100 V dc (160 V in cat. II)
NOMINAL VOLTAGE	4 A	4 A
CONTACT RESISTANCE	< 5 m Ω	< 5 m Ω
TEST VOLTAGE IN ACCORDANCE WITH DIN VDE 0110	1,5 KV	1,5 KV
CONTACTS MATERIAL	CuSn	CuSn
CONTACTS SURFACE COVERING MATERIAL	Au	Au
CONNECTOR MATERIAL	TPU (thermoplastic polyurethane) hardly inflammable and self extinguish	
CONNECTOR COLOUR	Grey - RAL 7035	Grey - RAL 7035
CONNECTOR USE TEMPERATURE LIMITS	-25° / +90°C	-25° / +90°C
PROTECTION DEGREE IN ACCORDANCE WITH EN 60529 (IEC 60529 AND DIN VDE 0470-1)	IP 67	IP 67
WIRING NUT FEATURES	14,8 mm external dia, M8x1 threading	14,8 mm external dia, M8x1 threading
CABLE TYPE	PVC/PVC	PUR/PVC
EXTERNAL SLEEVE COLOUR	Grey - RAL 7001	Grey - RAL 7001
CABLE EXTERNAL DIAMETER	3 wires = 4,4 mm (± 0,2 mm) 4 wires = 4,7 mm (± 0,2 mm)	3 wires = 4,4 mm (± 0,2 mm) 4 wires = 4,7 mm (± 0,2 mm)
WIRES SLEEVE MATERIAL	PVC	PVC
NO. OF CONDUCTORS ON CABLE SECTION	3 x 0,25 mm <sup>2</sup> and 4 x 0,25 mm <sup>2</sup>	3 x 0,25 mm <sup>2</sup> and 4 x 0,25 mm <sup>2</sup>
WIRES COLOUR	in accordance with DIN 0293	in accordance with DIN 0293
CONDUCTORS STRUCTURE	32 x 0,1 mm in class 6	32 x 0,1 mm in class 6
CABLE BENDING RADIUS	15 times external diameter moving installation 10 times external diameter steady installation	15 times external diameter moving installation 10 times external diameter steady installation
TEMPERATURE LIMITS	-30°C / +70°C (steady installation)	-30°C / +90°C (steady installation)
ISOLATION VOLTAGE	2500 V; 50 Hz; 5 min.	2500 V; 50 Hz; 5 min.
CABLE MARKS	PVR/PVC UL/CSA	PUR/PVC UL/CSA
WEIGHT	5 m 150 g • 10 m 300 g • 15 m 450 g	

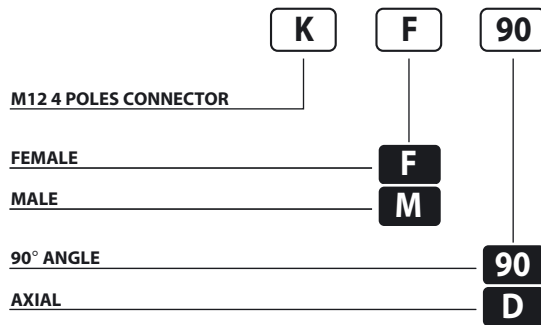
# M12 and M8 Connectors to be wired

**K models suitable for:**  
 • 18, MF, FQ series photocells (K output)  
 • IS and ISM series inductive sensors (K output)

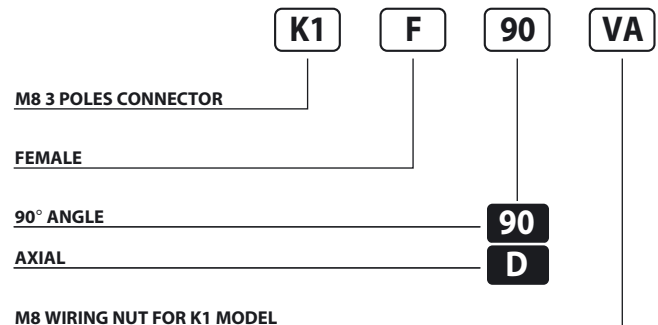
**K1 models suitable for:**  
 • IS series inductive sensors (K1 output)



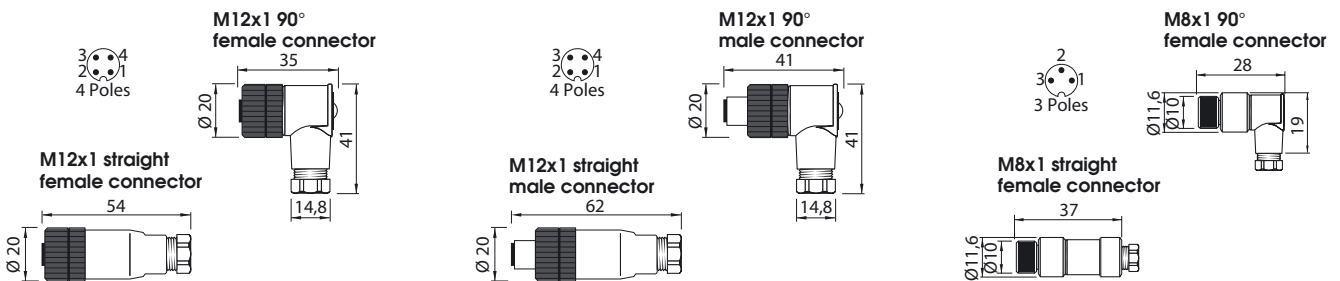
## M12 4 wires identification code



## M8 3 wires identification code



## Size and contacts configuration



## Technical data of connectors to be wired

	M12 4 poles male/female	M8 4 poles female
CONNECTOR POLARITY IN ACCORDANCE WITH IEC 61067-2-101	4 poles	3 and 4 poles
NOMINAL VOLTAGE IN ACCORDANCE WITH DIN VDE 0110 (III/3) AND IEC 60664 -1	125 V dc / 150 V ac (III/3)	60 V dc / 75 V ac (III/3)
NOMINAL VOLTAGE	4 A	4 A
CONTACT RESISTANCE	< 8 mΩ	< 5 mΩ
MASS RESISTIVITY	> 10 <sup>12</sup> Ω cm	> 10 <sup>10</sup> Ω cm
TEST VOLTAGE IN ACCORDANCE WITH DIN VDE 0110	1250 V (not connected)	1200 V (not connected)
CONTACTS MATERIAL	CuSnZn	CuZn
CONTACTS SURFACE COVERING MATERIAL	Ni	Au
CONNECTOR MATERIAL	PBT/PA (PBT thermoplastic material - polyester PA polyamide)	PA (polyamide 6.6) - nickel-plated brass
CONNECTOR PLASTIC PARTS COLOUR	Black - RAL 9005	Black - RAL 9005
CONNECTOR USE TEMPERATURE LIMITS	-40° / +85°C	-25° / +90°C
PROTECTION DEGREE IN ACCORDANCE WITH EN 60529 (IEC 60529 AND DIN VDE 0470-1)	IP 67	IP 68
CABLE GLAND	PG 7	-
CABLE GLAND NUT TIGHTENING TORQUE	-	2,5 Nm
MATERIAL OF CONDUCTORS THAT CAN BE WIRED	-	PVC-TPE flexible and semiflexible
SINGLE CONDUCTORS EXTERNAL DIAMETER	-	1,0-1,3 mm (with black moving) 1,3-1,6 mm (with white moving)
EXTERNAL MIN/MAX DIAMETER OF THE CABLE TO BE WIRED	6-8 (mm)	3,0-5,0 (mm)
SECTION TO BE WIRED WITH FLEXIBLE CONDUCTORS	0,25-0,75 mm <sup>2</sup> / 24-18 AWG	0,14-0,25 mm <sup>2</sup> / AWG 26-24 0,25-0,34 mm <sup>2</sup> / AWG 24-22
WIRING NUT FEATURES	20 mm external dia M12x1 threading Nickel-plated brass	10 mm external dia M8x1 threading Nickel-plated brass
COMBUSTIBILITY CLASS ACCORDING TO UL94	HB	V0
CONNECTION	screw	Piercecon - Coninvers GmbH patent