GETRIEBEBAU NORD
Member of the NORD DRIVESYSTEMS Group

Getriebebau NORD GmbH & Co. KG
Getriebebau-Nord-Straße 1 • 22941 Bargteheide, Germany • www.nord.com

SK TIE4-M12-INS

Part number: 275 274 531

Connection extension "Safe inputs"

M12 control system plug connector

Scope of supply

1 x	M12 Socket connector	SK TIE4-M12-INS
1 x	Cover cap	yellow
1 x	Insulating hose	l = 240 mm, d = 5.0 mm

As-delivered status with screwed-on connector cover

Field of use

The M12 Socket connector has open cable ends and wire end sleeves It is used to make a pluggable connection using normal commercial M12 round plug connectors. It connects the control terminal strip with the outgoing control signal cable at the output side.

Technical data

Version	
Temperature range	-30 … +90 °C
Contact insert Color / Material	Grey / RAL 1021 Plastic
Round plug connector Material	Metal, CuZn, nickel plated
Connection / Type Round plug connector	M12x1, adjustable Socket connector with flexible strand M16x1.5, metric screw thread
Contact set Contacts / Coding	5 pin, A - coded

Weight	23 g
Connector cover Color / Material	Yellow / RAL 1021 Plastic
Protection class (screwed)	IP67
Fastening	Hexagonal nut M16x1.5 *
Tightening torques * M12x1 Socket connector M16x1.5 Screw thread	 0.6 Nm 1.5 Nm

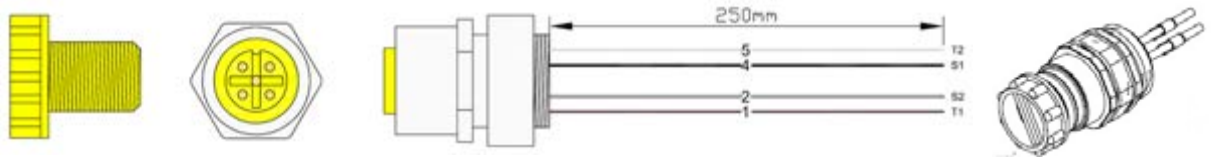
* Suitable assembly spanner commercially available (see Installation)

Cable [1]	
Number of conductors / Cross section	4 x 0.34 mm^2
Wire strands [1] / colors	UL / (bn, wh, bk, gy)
Length of wire strands	250 mm
Degree of fouling	3 / 2

1) AWM Style 1007/1569 80/105 °C 300 V

Mech. Service life	Min. 100 plugging cycles
Operating voltage	Max. 60 V
Current rating	4 A
Insulation resistance	≥ 10^8 Ω

Circuit diagram



Installation / option locations

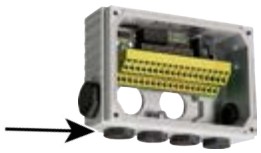
The M12 Receptacle connector are intended for direct installation in a free M16 hole / threaded opening of the device (see below).

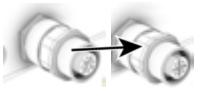
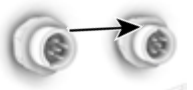
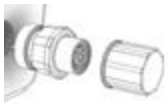
Device series	Recommended option location	Option locations
BUS technology box (SAFE) BUS connection unit (SAFE) SK TI4-TU-SAFE (-C)	1 / 2 / 3 / 4 optional * 5R / 5L	
* With optional SK TIE4-M20-M16 connection reduction		

The installation position and mounting location (coding pin or coding groove on contact carrier) of the Socket connector is freely positionable and should be aligned (see installation step 7) such that angled M12 round connectors can also be connected in a way that avoids collisions.

The installation steps described in the following apply to the installation of the M12 Receptable connectors in the BUS connecting unit (SAFE) of an external PROFIsafe technology box.

Installation steps for installation of the M12 Receptable connector

1.	Remove M16 blind plug from the provided option location hole (bottom) of the BUS connection unit.	
2.	Screw the middle hexagonal nut towards the front using a size 17 open-ended spanner. 	

3.	**EMC** Twist associated wire pairs together (e. g. bus system, power supply, etc.).	
4.	Pull insulating hose over connecting cables.	
5.	Screw M12 flanges component directly into the affected M12 threaded opening of the housing or connecting unit of the frequency inverter. Screw M12 Receptable connector into the relevant M16 threaded opening of the BUS connecting unit.	
	Alternative option locations	
	Connection reduction **SK TIE4-M20-M16** The M12 Receptable connector can alternatively be installed with an **optional** M20-M16 connection reduction. First screw the M12 Receptable connector directly into the connection reduction and then fit into one of the side M12 threaded openings in the connection unit.	
6.	Align coding pin / coding groove vertically to 12 o'clock by rotating the front hexagonal nut.	Socket connector  Plug connector 
7.	Secure the front hexagonal nut with a 17 mm open-ended spanner. Screw the rear hexagonal nut to the connection unit or the starter or frequency inverter housing using a size 17 open-ended spanner or a special torque / installation wrench. Take the specified **tightening torques** into consideration, see technical data.	   
8.	Ensure that the M12 round plug connector or the cover cap is properly screwed onto the M12 Receptable connector and tightened.	 

NOTICE **Corrosion**

Pay attention to leaktightness during the installation of all components (assembly, connection extension etc.). It must be ensured that all components are correctly seated and the tightening torques are adhered to when doing this.

In order to ensure that protection class **IP66** is complied with (concerns all devices with type key SK …**-C**), another **pressure - leaktightness test** must be performed when the assembly work has been completed.

Failure to do this will allow moisture to penetrate the device, which will result in the risk of corrosion and short circuiting.

Information

Torque / assembly wrench

In order to provide a secure, sealed and vibration-proof connection, the M12 connection extensions, which are equipped with a hexagonal threaded ring (size 17), should be tightened with special torque / assembly wrenches. For professional installation NORD recommends the use of commercially available assembly tools (M12, size 17) with an adjustable, defined tightening torque (e.g. from Murrelektronik).

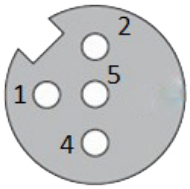
Electrical connections

Connection extension M12 Female connector SK TIE4-M12-INS

Connection terminals SK TI4-TU-SAFE

Contact assignments

Female connector
A - coded



Pin	Colour	Signal	Contact	Designation
1	brown	T1	25	Clock1
2	white	S2	20	SI2
3	n.c.			
4	black	S1	19	SI1
5	grey	T2	26	Clock2

Further documentation (www.nord.com)

Document	Designation
TI 275280300	Bus connection unit SK TI4-TU-SAFE
TI 275280800	Bus connection unit SK TI4-TU-SAFE-C

Document	Designation
TI 275274511	Connection reduction SK TIE4-M20-M16