

SUBCON-PLUS-PROFIB.../FC90

Fast connection connectors for PROFIBUS systems with IDC terminal block connection



INTERFACE

Data sheet
104390_en_00

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1 Description

The **SUBCON-PLUS-PROFIB.../FC90** D-SUB series is specifically designed for use in PROFIBUS systems up to 12 Mbps. Under field conditions, it enables the quick and easy connection of the incoming and outgoing bus cable.

Two fast connection connectors with IDC terminal block connection are available with or without programming interface. Both connectors have an angled cable entry.

They are designed exclusively for solid copper conductors.

The integrated termination resistor can be connected externally via a slide switch. At the same time the outgoing bus segment is switched off. This makes it easy to start up segment by segment while incorrect terminations are avoided.

In addition, the connector housing with high-quality shielding ensures a high level of immunity to interference even at maximum transmission speed.

The connectors are designed for all standard PROFIBUS cables with an outside diameter of 8 mm (type A and B).

If the Fast Connect cable is used, work is reduced to a minimum thanks to the PSM-STRIP-FC/PROFIB quick stripping tool: strip the cable and individual wires, insert in the connector, and close the housing cover.



If you have any technical problems, which you cannot resolve with the aid of this documentation, please contact us during the usual office hours at:
PSI hotline: + 49 5235 3-19890
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E-mail: interface-service@phoenixcontact.com



The connectors are specified for cable type A according to EN 50170. Cable type B, which is also described in EN 50170, is out of date and should no longer be used.
Further solutions for PROFIBUS can be found at www.phoenixcontact.com.



Make sure you always use the latest documentation.
It can be downloaded at www.phoenixcontact.net/catalog.



This data sheet is valid for all products listed on the following page:

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2 Ordering data

Connectors with IDC terminal block connection

| Description | Type | Order No. | Pcs./Pkt. |
|---|-----------------------------|-----------|-----------|
| PROFIBUS connector up to 12 Mbps, angled version, integrated termination resistor that can be connected externally, IDC terminal block connection | SUBCON-PLUS-PROFIB/FC 90 | 2313274 | 1 |
| PROFIBUS connector up to 12 Mbps, angled version, integrated termination resistor that can be connected externally, with PG D-SUB female connector for connecting a programming device, IDC terminal block connection | SUBCON-PLUS-PROFIB/PG/FC 90 | 2313287 | 1 |

Accessories

| Description | Type | Order No. | Pcs./Pkt. |
|---|---------------------|-----------|-----------|
| Quick stripping tool for PROFIBUS cable type Fast Connect | PSM-STRIP-FC/PROFIB | 2744623 | 1 |
| Stripping pliers | QUICK-WIREFOX 6 | 1204384 | 1 |
| PROFIBUS cable type Fast Connect | PSM-CABLE-PROFIB/FC | 2744652 | 1 |

3 Technical data

Technical data for SUBCON-PLUS-PROFIB/FC 90 and SUBCON-PLUS-PROFIB/PG/FC 90

| | |
|---|---|
| Connector connection | 9-pos. D-SUB pin strip |
| Programming connection | 9-pos. D-SUB female connector |
| Cable entry | 90°-angled cable outlet |
| Connection cross-section of IDC terminal blocks | |
| Solid | 0.64 mm ² |
| AWG | 22 AWG |
| Insertion/withdrawal cycles | > 200 |
| Reconnection frequency | 5 |
| Cable diameter (maximum/minimum) | 8 mm (±0.4 mm) |
| Mounting screws | 4-40 UNC |
| Maximum tightening torque | 0.4 Nm |
| Temperature range | |
| Operation | -20°C ... +75°C |
| Storage/transport | -25°C ... +80°C |
| Relative humidity | 75% at 25°C |
| Degree of protection | IP20 |
| Housing material | ABS, metal-plated |
| Pin assignment | 3,8/on 2 terminal blocks each (see description) |
| Termination resistors | 220 Ω/390 Ω, can be connected externally |
| UL approval | File No. E123528 Vol. 5 Sec. 3 |
| Tested and approved PROFIBUS cable types | |

| | |
|-----------------|---|
| Phoenix Contact | PSM-CABLE-PROFIB/FC (2744652) |
| Lappkabel | UNITRONIC® BUS L2/FIP PUR FC UL/CSA (2170 330) UNITRONIC® BUS-YY L2/FIP (2170 236) UNITRONIC® BUS L2/FIP BURIAL FC (2170 323) UNITRONIC® BUS L2/FIP PE FC (2170 233) |
| Siemens | FC Standard Cable (6XV1 830-0EH10) FC Robust Cable (6XV1 830-0JH10) FC Food Cable (6XV1 830-0GH10) |

4 Description

4.1 Function block diagram

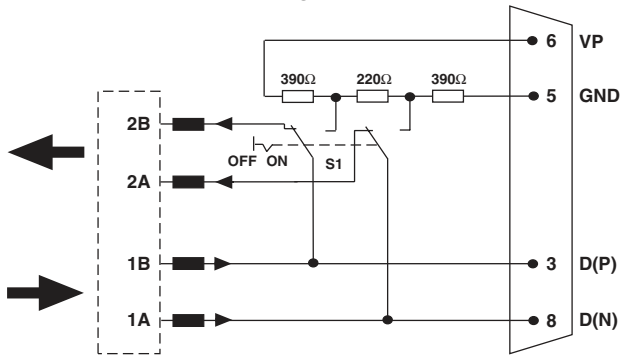


Figure 1 Function block diagram for SUBCON-PLUS-PROFIB/PG/FC 90

4.2 Dimensions

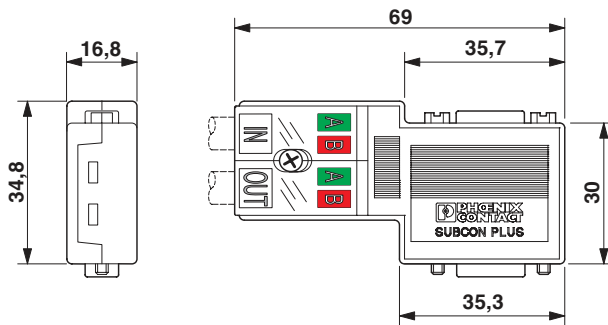


Figure 2 Dimensions (in mm)

4.3 Structure

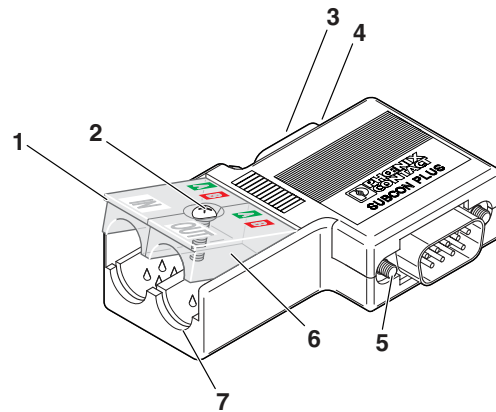


Figure 3 Structure

- 1 Upper housing part
- 2 Housing screw
- 3 PG connection
- 4 Slide switch
- 5 Mounting screws
- 6 Connection block
- 7 Strain relief

5 Connection

5.1 Stripping

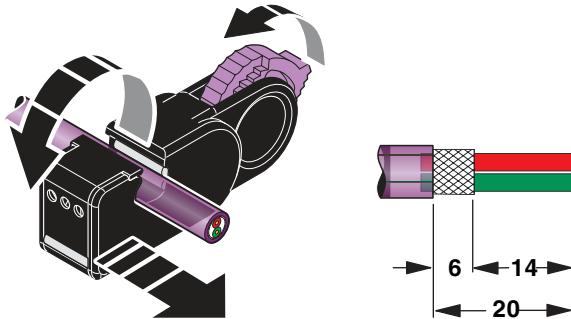


Figure 4 Stripping

The PSM-STRIP-FC/PROFIB stripping tool (Order No. 2744623) is recommended for quick and easy stripping.

5.2 Connection

The connector enables the quick and easy connection of the incoming and outgoing bus cable. The connector contacts are routed to clearly arranged, color-coded IDC terminal blocks.

The integrated termination resistor can be switched and, when activated, simultaneously switches off the outgoing bus cable. This enables easy startup of the bus system segment by segment.

The strain relief is integrated in the housing half shells and is designed for standard PROFIBUS cable type A.

The additional integrated programming connection of the SUBCON-PLUS-PROFIB/PG/FC 90 version enables the connection of a programming or service device without interrupting bus operation.



To ensure reliable operation, observe the recommended stripping lengths in Figure 4.

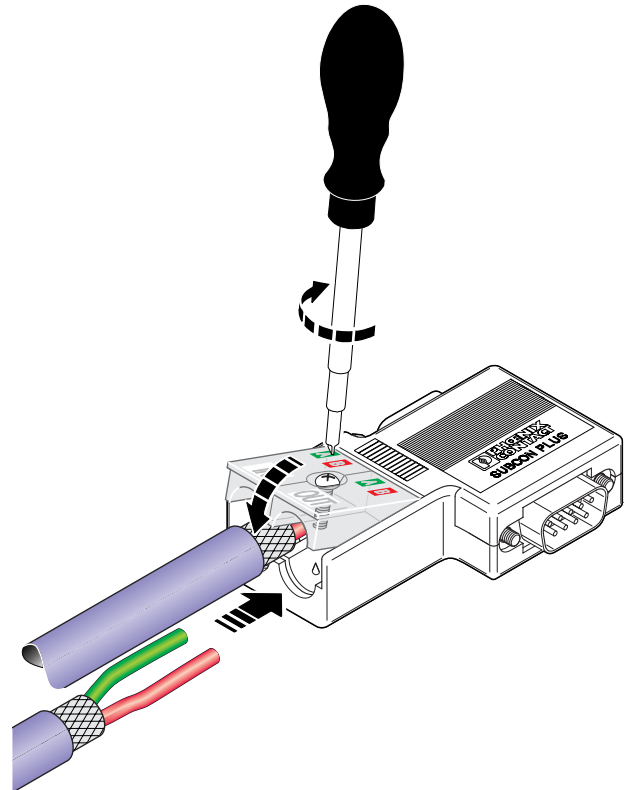


Figure 5 Connection

- Strip the cable as per the specified stripping lengths (see Figure 4).
- Remove the separating foil if necessary.
- Insert the individual wires into the connection terminal blocks as far as they will go.
- Always connect the incoming bus cable to terminal block connections 1A/1B (even at the start of the bus system).
- The outgoing bus cable is always connected to terminal block connections 2A/2B (see Figure 5). Note the color-coding of the connection terminal blocks.
- Finally, mount and screw tight the connection terminal blocks. This creates the shield connection and the strain relief for the bus cable.

6 Termination resistor

6.1 Activating the termination resistor and switching off outgoing bus cables

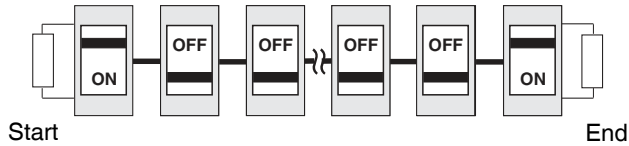


Figure 6 Termination resistor

The termination resistors are activated at the start and end of the bus system using the slide switch (item 4 in Figure 3). At the same time, the connection terminal blocks (2A/2B) for the outgoing bus cable are switched off.

The termination resistor must be deactivated at all other nodes in the bus system.

6.2 Length according to PROFIBUS specification

| Transmission speed in kbps | Corresponding segment length |
|----------------------------|------------------------------|
| 9.6/19.2/45.45/93.75 | 1200 m |
| 187.5 | 1000 m |
| 500 | 400 m |
| 1500 | 200 m |
| 3000/6000/12,000 | 100 m |