

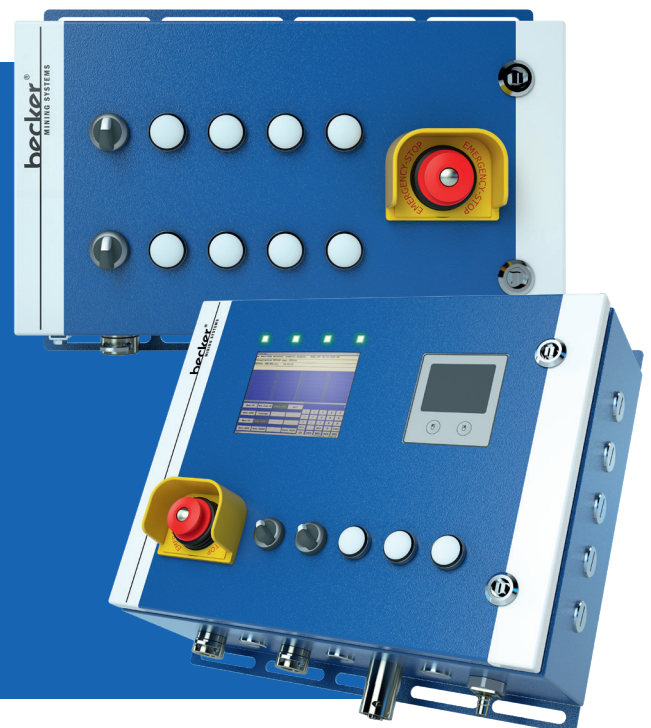


PROMOS4.0

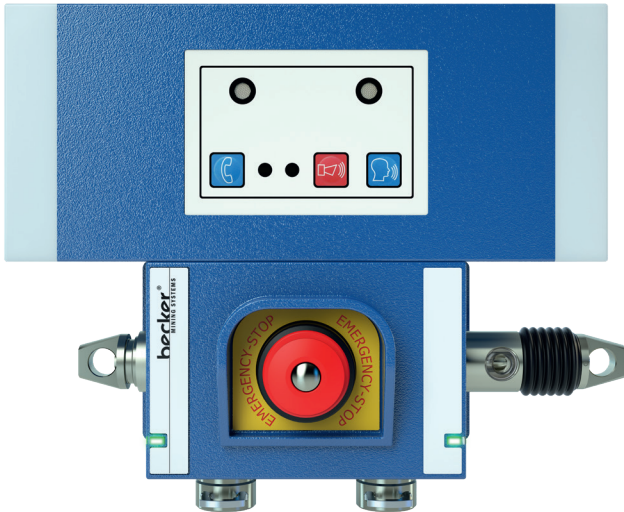
PROMOS4.0

PROMOS 4.0, the powerful mincos system fieldbus, is the culmination of 50 years of experience in mining combined with innovation and user-friendly operation. Data are transferred via the PROMOS 4.0 fieldbus more than twenty times faster than via the previous fieldbus. This allows voice digitisation, as well as additional functions such as diagnosis using mobile radio devices and the simultaneous use of fieldbus devices for RFID applications.

- Feldbus 500 kbit/s
- Voice digitisation
- Fieldbus length up to 4,000 m
- Max. 96 slaves per fieldbus
- Cable pull switch with cable break monitoring
- Volume of intercoms up to 110 dB (Automatic Volume Control)
- Bluetooth technology for mobile diagnosis and voice communication via industrial smartphone IS520.1
- Emergency stop devices and intercoms with line-monitored inputs



PROMOS 4.0 comprises the following functions for automating plants and machines across a broadly divided network: Intercom, safety circuit, data transfer and long-distance power supply for applications up to a length of 4,000 m.



In the system cable, PROMOS 4.0 requires six wires (two safety circuit, two long-distance power supply, two data). The BN77D cable known from the AST fieldbus can also be used for the PROMOS 4.0 fieldbus. However, the fieldbus's performance is unrivalled in terms of voice and data transmission.

Digital voice transmission offers fault tolerance against crosstalk, from the terminal device to the central unit.

Thanks to the high-speed data transmission, more demanding automation tasks can be carried out at the same time as modern diagnostics techniques using a smartphone with intrinsic safety "i" explosion protection type.

Furthermore, the fieldbus cable has an additional use because of the tag readers integrated in the fieldbus intercoms. Depending on the application, the PROMOS 4.0

fieldbus can also be supplied with voltage from battery-buffered, intrinsically safe power supplies.

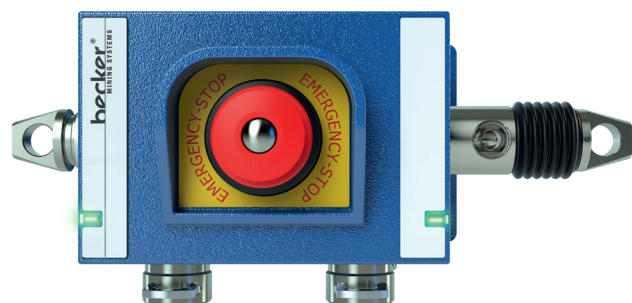
The PROMOS 4.0 fieldbus devices have been completely redesigned, drawing on decades of experience with the PROMOS PLUS and the BTS fieldbus BETACONTROL.

The pull rope switch with cable break monitoring and the intercom with automatic noise reduction and volume control have played a particularly important role in this process.

All intercoms have been specifically designed for underground mining use. Thanks to digital voice transmission, the intercom offers a crystal-clear frequency response. A new loudspeaker, specially designed by sound designers, allows volumes up to 110 dB.

The pull rope and emergency stop switches now have two line-monitored inputs for monitoring off-track running switches, temperature sensors, pressure switches or other sensors with contacts.

The PF 1010 and PF 1020 control consoles are available as I/O control units. They are used to connect analogue and digital process variables.



Similarly, the two I/O adapters, PF 4020 comprising four inputs and four outputs and the PF 4021 comprising eight inputs

and outputs are also used to connect sensors and actuators.



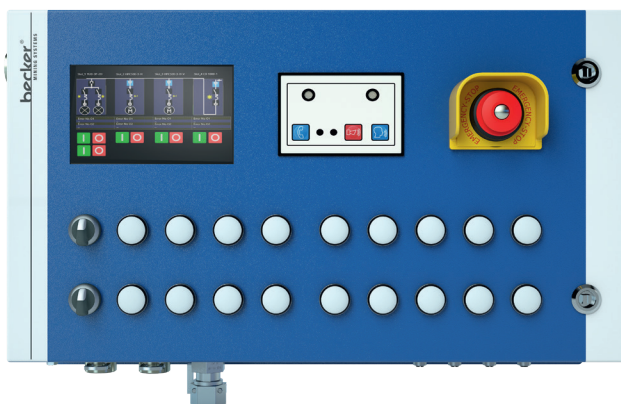
The M12 sensor-actuator connector cables can be preassembled by the user.

Using the reliable industrial smartphone with intrinsic safety "i" explosion protection type, the user can choose between a wide range of commissioning, diagnosis and maintenance tasks.

If required, a radio control can be connected to the fieldbus, in addition to gateways for Modbus, CanBus or other serial connections common in the mining industry.

The PROMOS 4.0 fieldbus serves two types of control stations.

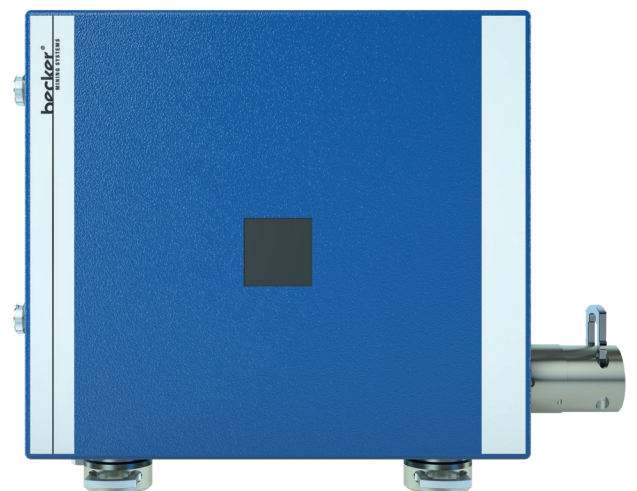
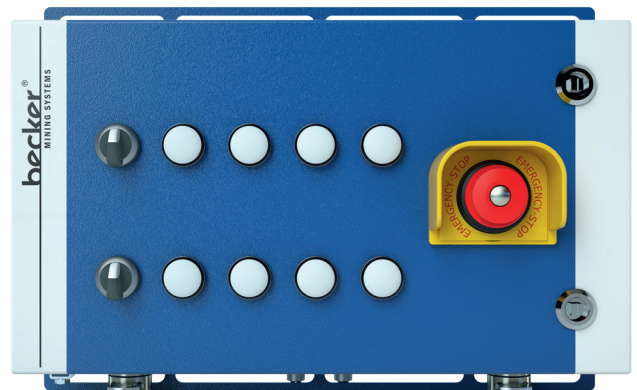
The PROMOS 4.0 control console PF 1020 is a powerful control console for central operating points (e.g. in the longwall). It has a touchscreen, I/O modules and an intercom.



The user can also equip the control elements as required by adding on appropri-

ate function elements such as selector switches, buttons, illuminated buttons or key switches.

The small control console PF 1010 is used as an auxiliary control console and only comprises control elements.



The PROMOS 4.0 fieldbus belongs to the mincos product range. It operates as a fieldbus for the MINING MASTER SMART (MMS) control unit.

The Mining Master Smart is a modular control unit for small to medium automation tasks.

This control unit functions as a human-machine interface, incorporating a graphic display and a touch pad.

The MMS can be operated as a stand-alone unit or as part of the CS40** ENDIS switchgear.



The applications developed by the user are created with the MULTIPROG programming system.



MULTIPROG is an integrated programming environment used to create control applications in all languages defined under IEC 61131 (instruction list, structured text, function block diagram, ladder diagram, sequential function chart).

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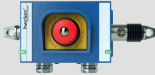





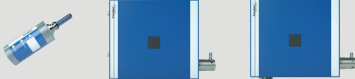




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Technical Data

DEVICE	IMAGE	TYPE
Emergency off with 2 inputs without inputs		PF2010 PF2011
Emergency off with pull rope switch with 2 inputs without inputs		PF2020 PF2021
Intercom with emergency off and storage battery with 2 inputs without inputs		PF3010 PF3011
Intercom with emergency off with pull rope switch (pull on steel rope) and storage battery with 2 inputs without inputs		PF3020 PF3021
I/O-device 4-way I/O 8-way I/O		PF4020.1 PF4020.2
Small control console with optional buttons, key switches, catches, etc., plus emergency off with LED		PF1010
Large control console with touch screen, emer- gency off and control ele- ments with optional but- tons, key switches, catches, etc., plus intercom, emer- gency off with LED, storage battery and I/O		PF1020
Components for bus control Safety circuit terminator Power extender Power extender terminator		PF5011 PF5021 PF5031
Gateway Audio gateway		PF6011
MMS control units Mining Master Smart		MMS.*****
Mobile phone Bluetooth diagnosis device for Promos 4.0 devices.		IS520.1
DST – diagnostic and service tool		



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