becker®

MINING SYSTEMS

SMARTSENSE®
MCU-100
INTRINSICALLY SAFE
MODULAR
COMMUNICATION
UNIT

- Interchangeable Modules: Ports A, B, C can accommodate the following modules: RS485 Copper, RS485 Fiber Optic and Ethernet or WiFi*

- Extend system communication up to 1Km (on copper) or 5Km (on Fiber Optics)

- Intrinsically Safe design, can be installed as 3 Way RS485 repeater and/or IS Isolator

- Support Modbus RTU with configurable Baud rate from 2,400 to 115,200bps

- IP66/IP67 rated water and dust tied enclosure

smartsense®

smartsense®

FEATURES

The MCU-100 Intrinsically Safe Modular Communication Unit is the essential communication element in the smartsense® environmental monitoring system. It is constructed with modular communication units that support Modbus RTU protocol over RS485 copper and the unique RS485 over Fiber Optic communication backbones, which extend the reliable high speed communication to up to 5 km.

The unit has been carefully design to comply with the most critical Intrinsically Safe regulations in the world. It can perform as IS isolator between the IS and Non-IS system, as well as in between the different IS systems.

With the optional Ethernet or WiFi modules, the MCU-100 can also be the configured as the Modbus TCP to RTU hub in the system.

MCU-100 unit can be accessed remotely through RS485 datalink or other communication modules. The critical information, such as overall status, voltage and current readings, are fully accessible for the system.

TECHNICAL DATA

PERFORMANCE SPECIFICATIONS	
Data Link	Modbus on RS485 bus: Up to 3 channels
Physical Interface	RS485 on Copper RS485 on Fiber Optic
Communication Distance	Copper: up to 1Km Fiber Optic: up to 5Km
Communication Protocol	Modbus RTU half-duplex
Baud rate	2,400-115,200bps
Bit: 7, 8	Selectable
Polarity	Selectable
Remote Access-Ethernet (Modbus TCP)	Optional
Remote Access-Wi-Fi (Modbus TCP)	Optional

MECHANICAL DATA	
Dimensions (L x W x H)	216mm x 147mm x 85.5mm
Weight	930 g
IP Rating	IP66/IP67

ELECTRICAL DATA	
Power Supply	IS: 10-17Vdc Non-IS: 10-24Vdc
Current Consumption	<50mA@15V
Battery Backup	Optional

ENVIRONMENTAL DATA	
Operation Temperature	-20 ~ +40°C
Humidity	90% Non-Condensing

*Ethernet or WiFi options are for Non-IS applications only

Technical data are limit values.

If the product is integrated into systems or operated in combination with other devices, its permissible operating values can deviate from these limit values. Subject to technical modifications without prior notice.

Rev. F

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