PERFORMANCE MADE SMARTER



Communication enabler

4511

– Programming display for system 4000 and 9000 devices
– Modbus RTU protocol interface over RS-485
– Monitor process value from the built-in display
– High 2.5 kV isolation to host unit
– Shielded RJ45 connector on top

Application

- The 4511 detachable display adds Modbus RTU RS-485 serial communications to all current and future 4000/9000 units.
- The unit converts a wide array of sensors and analog device signals measured by the system 4000 like uni- and bipolar mA and voltage signals, potentiometer, Lin. R, RTD and TC, to a Modbus communication line signal.
- When mounted on a system 9000 device any signal coming from or going to I.S. classified area, like AI, AO, DI and DO signals, can be converted to a Modbus network.
- All individual unit operating parameters can easily and quickly be configured by using the Modbus communication or by using the front display menu.
- The easily readable 4511 display can be used to read the process signal, simulate the output signal, indicate sensor errors and internal device errors.

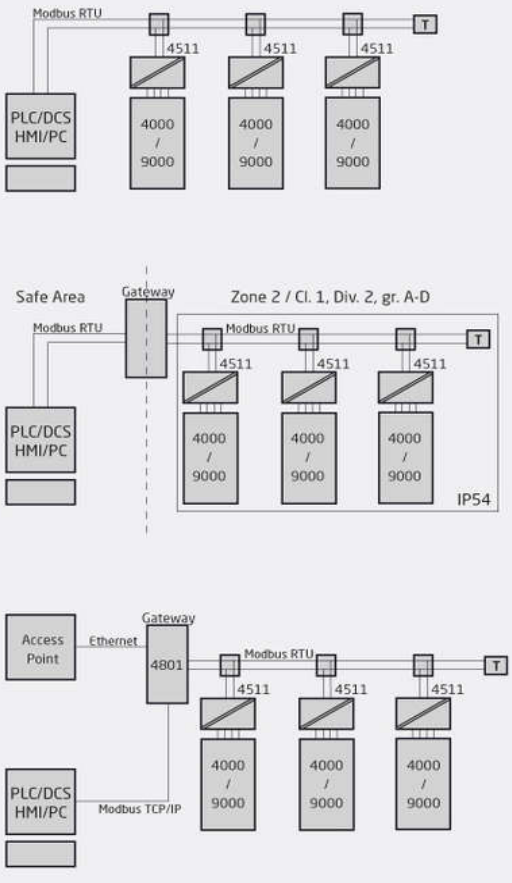
Technical characteristics

- 4511 has full 4501 functionality for unit programming, process signal monitoring and diagnostics handling.
- Modbus RTU protocol is supported using a serial RS-485 communication wiring.
- Multidrop half-duplex connection via shielded RJ45 connector.
- High safe galvanic isolation of 2.5 kVAC between the serial wiring and the connected system 4000/9000 units.
- Modbus parameters such as address, baud rate, stop bit(s), and parity bit are configured from the 4511 display, which also stores parameters.

Mounting / installation / programming

- Mounting in Zone 2 / Div 2.
- The 4511 can be moved from one device to another. The individual system 4000/9000 unit configuration of the first device can be saved and downloaded to subsequent devices.
- Programmed parameters can be protected by a userdefined password.
- When mounted on devices that are installed upside down, a menu item allows the display on the 4511 to be rotated 180° and the up/down buttons to switch function.

Applications



Up to 32 devices per segment without the use of a network repeater

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Order:

Type
4511

Environmental Conditions

Operating temperature	-20°C to +60°C
Storage temperature	-20°C to +85°C
Relative humidity	< 95% RH (non-cond.)
Protection degree	IP20
Installation in	Pollution degree 2 & meas. / overvoltage cat. II

Mechanical specifications

Dimensions (HxWxD)	73.2 x 23.3 x 26.5 mm
Dimensions (HxWxD) w/ 4000/9000 unit	109 x 23.5 x 131 mm
Weight approx	30 g
Connection	RJ45 - shielded

Common specifications

Supply

Max. required power	≤ 0.15 W

Isolation voltage

Isolation voltage, test / working	2.5 kVAC / 250 VAC reinforced isolation

Response time

Response time	< 20 ms
Signal / noise ratio	> 60 dB
Update rate	> 50 Hz
Extended EMC immunity: NAMUR NE21, A criterion, burst	No loss of communication
Signal type	RS-485 half duplex
Serial protocol	Modbus RTU
Modbus mode	RTU - slave
Devices on an RS485 line	Up to 32 (w/o a repeater)
Data rates, baud	2400, 4800, 9600, 19200, 38400, 57600, 115200
Automatic baudrate detection	Yes - can be configured ON or OFF
Parity	Even, Odd, None
Stop bit(s)	1 or 2
Digital addressing	1...247
Response delay	0...1000 ms

Observed authority requirements

EMC	2014/30/EU
LVD	2014/35/EU
EAC	TR-CU 020/2011

Approvals

DNV-GL Marine	Stand. f. Certific. No. 2.4
ATEX 2014/34/EU	DEKRA 13ATEX0098 X
IECEx	DEK 13.0026 X
FM	0003049132-C
UL	UL 61010-1