Remote I/O

IS1+ Remote I/O CPU module
For Zone 2
9442/35-10-00 Art. No. 246854

- Supports PROFIBUS DP, PROFINET, Modbus TCP+RTU and EtherNet/IP™; incl. HART transmission and redundancy
- RS-485 (max. 12 Mbps) and Ethernet 100BASE-TX (max. 100 Mbps) interfaces
- Extensive diagnostics based on NE 107
- Supports FDT/DTM, OPC UA and web servers for integration in asset management systems
- Extended ambient temperature range from -40 to +75 °C

MY R. STAHL **9442A**

The 9442/35 CPU module functions as a gateway between the IS1+ Remote I/O system and the automation system. All supported communication protocols are in the CPU module and can be configured by the user. In addition to the process values, other information such as diagnostics, parameterisation and configuration is transmitted via the CPU module. The 9496 socket and the 9494 BusRail are used for communicating with the I/O modules. Integration in control systems and plant asset management tools is based on standards such as GSD, EDS, web servers and FDT/DTM.

Technical Data

Explosion Protection	
Application range (zones)	2
Application range (Zone) note	Zone 22 is only permissible when a suitable enclosure is used.
Ex interface zone	2
IECEx gas certificate	IECEx PTB 17.0031X
IECEx gas explosion protection	Ex ec ia [ia Ga] IIC T4 Gc
ATEX gas certificate	PTB 17 ATEX 2019 X
ATEX gas explosion protection	Ⓔx II 3 (1) G Ex ec ia [ia Ga] IIC T4 Gc
FMus certificate	FM17US0332X
cFM certificate	FM16CA0134X
Marking cFMus	NI, Class I, Div. 2, Groups A,B,C,D; Class I, Zone 2, AEx/Ex ec ia [ia Ga] IIC T4 Gc Ta = -40°C ... +75°C See Doc. 9442 6 031 002 1
Certificates	ATEX (PTB), Canada (FM), China (NEPSI), IECEx (PTB), Korea (KTL), USA (FM)
Ship approval	ABS, BVIS, EU RO MR (DNV), KR, LR
Declaration of Conformity	ATEX (EUK), China (CCC)
Installation	Zone 2
Electrical Data	
Protocol setting	Via rotary switch S1 On the 9496/35 socket
Redundancy	Full redundancy Line redundancy Supply redundancy
RS485 interface connection	Sub-D plug, 9-pole
RS485 interface	As per PROFIBUS specification

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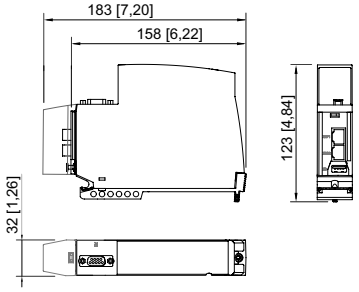
Electrical Data	
RS-485 interface protocol	Modbus RTU Profibus DP V0 Profibus DP V1 HART
Line termination RS485	Powered resistor (end-of-line resistor in the Sub-D plug, see accessories)
Address setting RS485	Using the S2 and S3 rotary switches on the 9496/35 socket
Address range RS485	1 – 99
Copper RS485 transmission length/rate	1200 m at 9.6 to 93.75 kbps 1000 m at 187.5 kbps 400 m at 500 kbps 200 m at 1.5 Mbps 100 m at 12 Mbps
Transfer length/rate FO RS485	Approx. 2000 m at 1.5 Mbit/s
Max. voltage Um RS485	≤ 30 V DC
Max. voltage U_m RS485 note	With 9186 FO fieldbus isolating repeater, see accessories
Ethernet interface connection	2 x RJ45 (EIA/TIA 568B) socket
USB version	USB 2.0
Interface RJ45	100BASE-TX Unmanaged switch function
RJ45 protocols	MODBUS TCP EtherNet/IP™ PROFINET
IP address setting	Using a web server or IS1+ detect software (default: 192.168.1.101)
Transfer rate RJ45	Max. 10/100 Mbps Auto-negotiation
Transfer length copper RJ45	100 m
Transfer length FO RJ45	2000 m multi mode 30 km single mode
Transmission distance FO RJ45 note	With media converter/9721 switch, see accessories
Max. voltage Um RJ45	≤ 30 V DC
USB interface	Type A socket
USB address setting	Identical to RS485 address
USB transfer rate	Max. 480 Mbps
Max. USB current	250 mA
Max. voltage Um USB	≤ 30 V DC
USB protocols	Service bus
Auxiliary Power	
Power supply	Via socket 9496 and PM 9445/35
Max. current consumption	0.3 A
Max. power dissipation	5 W
Galvanic Isolation	
Auxiliary power/CPU	≥ 1500 V AC
CPU/CPU (redundancy)	≥ 1500 V AC
Device Specific Data	
Software	IS1 device DTM IS Wizard Web server
LED module requires maintenance	"M/S" LED, blue

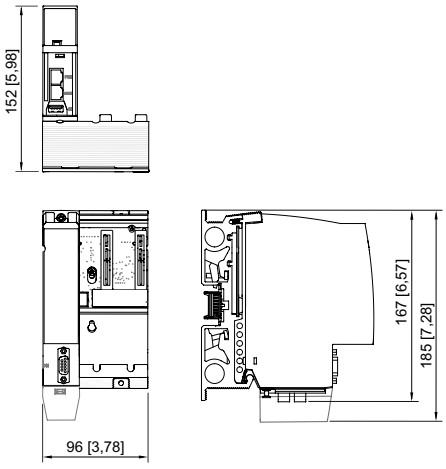
Device Specific Data	
LED operating conditions	"PWR" LED, green
Diagnostic/parameterisation functions	- Use the web server or IS1+ detect software to set the IP address (for Ethernet) - Web server - Load or read back configuration data and parameters in IS1+ field stations - Read inputs - Read and write outputs - Transmit diagnostics data (e.g. configuration error, hardware error, signal error) - Transmit HART commands from/to HART field devices - Firmware downloads using the web server
Diagnostic/parameterisation connectable software packages	- IS Wizard (via USB ServiceBus) - R. STAHL DTM devices with fdt frames (e.g. fdtContainer from M+M; Pactware) - AMS from Emerson Process Management - PDM from Siemens - PRM and Fieldmate from Yokogawa - FieldCare from Endress+Hauser - FDM from Honeywell
Retrievable parameters	Hardware revision Manufacturer Serial number Software revision Type
LED data traffic automatic system	"AS EXCH" LED, green
LED configuration	"CFG ERR" LED, red
LED data traffic RS485	"RXTX X1 RS-485" LED, green
LED port connection RJ45 port 1	"LINK X2 LAN P1" LED, yellow
LED data traffic RJ45 port 1	"RXTX X2 LAN P1" LED, green
LED port connection RJ45 port 2	"LINK X2 LAN P2" LED, yellow
LED data traffic RJ45 port 2	"RXTX X2 LAN P2" LED, green
LED USB data traffic	"RXTX X3 USB" LED, green
Diagnostics	
LED group error	"ERR" LED, red
Ambient Conditions	
Ambient temperature	-40 °C ... 65 °C (without mounting plate) -40 °C ... 70 °C (With 3 mm sheet steel mounting plate) -40 °C ... 75 °C (With 6 mm aluminium mounting plate)
Ambient temperature	-40°F ... +149°F (without mounting plate) -40°F ... +158°F(With 3 mm sheet steel mounting plate) -40°F ... +167°F(With 6 mm aluminium mounting plate)
Ambient temperature note	Mounting on a BusRail (DIN mounting rail) -40 – 70 °C with four additional safety screws on a galvanised sheet steel mounting plate of at least 3 mm -40 – 75 °C with four additional safety screws on a coated aluminium mounting plate of at least 6 mm (EN-AW6082 or comparable thermal conductivity)
Storage temperature	-40 °C ... 80 °C
Storage temperature	-40°F ... +176°F
Max. operating altitude	< 2000 m
Max. relative humidity	95% (without condensation)
Shock (semi-sinusoidal)	(IEC EN 60068-2-27) 15 g (3 shocks per axis and direction)

Ambient Conditions	
Vibration (sinusoidal)	(IEC EN 60068-2-6) Frequency range 2 to 13.2 Hz Amplitude 1 mm (peak value) Frequency range 13.2 to 100 HzAcceleration amplitude 0.7 g
Mechanical Data	
Degree of protection (IP) (IEC 60529)	IP30
Module enclosure	Polyamide 6GF Seawater-resistant aluminium
Fire resistance (UL 94)	V2
Pollutant class	Corresponds to G3
Width	32 mm
Width, inches	1.26 in
Depth	123 mm
Length	152 mm
Length, inches	5.98 in
Mounting depth, inches	4.84 in
Weight	1 kg
Weight	2.2 lb
Mounting / Installation	
Mounting orientation	Horizontal Vertical
Module fuse	Torx T20 screws
Note	Only connect the 9442/35 CPU to the 9496/35 socket

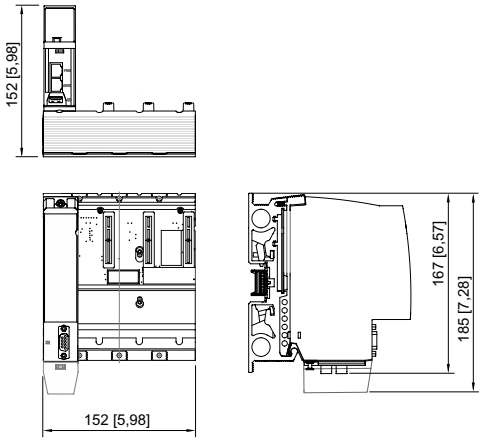
Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



9442/35 CPU module



9442/35 CPU module and 9496/35-03-00 socket



9442/35 CPU modules + 9496/35-04-00 socket

Accessories

Series 9496/35 – socket for CPU & power modules		**Art. No.**
	Zone 2 3 slots for mounting 1 x CPU and 2 x power module or 2 x CPU and 1 x power module Dimensions approx. L = 167 mm, W = 96 mm, H = 50.6 mm	246871

	Zone 2 4 slots for mounting 2 x CPU and 2 x power module Dimensions approx. L = 167 mm, W = 152 mm, H = 50.6 mm	262392

Fieldbus isolating repeater Series 9185/12		**Art. No.**
	Equipment for installation in safe areas or Zone 2/Div. 2 For fieldbuses with RS-485 interface Suitable for PROFIBUS DP, Modbus, R. STAHL ServiceBus RS-232, RS-422, RS-485 interface with the automation system Transmission rate automatically set with PROFIBUS DP Adjustable transmission rate (1.2 kbps to 1.5 Mbps) 24 V AC/DC auxiliary power For further information, see the Series 9185/12 data sheet	227600

RS485 media converter		**Art. No.**
	Media converter for installation in Zone 2. For fieldbuses (PROFIBUS DP, Modbus RTU) using optical intrinsically safe "Ex op is" fibre optic in Zone 1. Compatible with Series 9786 devices. Point-to-point, linear structure or optical ring. With diagnostics function including error signalling. Simple parameterisation using a rotary switch. Data rates from 9.6 kbps to 1.5 Mbps possible. For further information, see the data sheet for the Series 9786 media converter.	308563

FO fieldbus isolating repeater, Zone 2/Div. 2		**Art. No.**
	Isolating repeater for installation in Zone 2/Div. 2 For fieldbuses using optical intrinsically safe "Ex op is" fibre optic in Zone 1/Div. 1 Point-to-point or linear structure Comprehensive diagnostics function and fault message contact Suitable for PROFIBUS DP up to 1.5 Mbps For further information, see the data sheet for Series 9186 FO fieldbus isolating repeaters	160625

FX op is/TX SC media converter for Zone 2		**Art. No.**
	Media converter from 10/100 BASE-TX (1 x RJ45 port) to 100 BASE-FX "Ex op is" (1 x FO port SC); multi-mode (up to 4 km range); MY R. STAHL: 9721A	220381
	Media converter from 10/100 BASE-TX (1 x RJ45 port) to 100 BASE-FX "Ex op is" (1 x FO port SC); single-mode (up to 30 km range); MY R. STAHL: 9721A	220382

Unmanaged switch FX op is/TX SC for Zone 2		**Art. No.**
	Unmanaged switch FX op is auf TX; SC plug connector FO cable 4 multi-mode (MM), 2 RJ45, installation in Zone 2	243427

DTM IS1+ devices for PROFIBUS DP and Ethernet		**Art. No.**
	Parameterisation and configuration of the IS1+ system Communication with HART-capable field devices Supports all common FDT frame applications (e.g. FieldCare, PactWare™) Condition monitoring Scan function for automatic topology generation Download from r-stahl.com	

IS1 DTM devices Series 9499/DTM		**Art. No.**
	- Parameterisation and configuration of the IS1+ system - Communication with HART-capable field devices - Supports all common FDT frame applications (e.g. FieldCare, PactWare™) - Condition monitoring - Scan function for automatic topology generation - Download from r-stahl.com	
	9499/DTM-IS1-02 Com/Device/HART 30 Free-of-charge software licence for up to 30 HART devices	251237
	9499/DTM-IS1-04 Com/Device/HART 300 Software licence for up to 300 HART devices	251239
	9499/DTM-IS1-06 Com/Device/HART unltd. Software licence for an unlimited number of HART devices	251240

IS1 PCS7 APL field device library		**Art. No.**
APL SIEMENS	Simple integration of IS1+ systems in SIEMENS PCS7 (V9 SP2 to V9.1 SP2): - PROFIBUS DP with CPM 9440 from GSD 3.12; CPU 9442 from GSD 5.14 - PROFINET with CPU 9441 from GSDML-V2.3-Stahl-RIO-20140206; CPU 9442 from GSDML-V2.34-Stahl-RIO9442-20200427 Further information and ordering only available from Siemens: www.siemens.com/mvdi	

AOI tool		**Art. No.**
AOI ROCKWELL	Simple integration of IS1+ systems in Rockwell ControlLogix and CompactLogix via EtherNet/IP and AOI (add-on instructions). Note: The 9499/DTM-IS1 DTM is also required. This can be downloaded from r-stahl.com	

USB RS485 converter		**Art. No.**
	USB RS485 converter for installation in Zone 2. Interference-resistant, bidirectional conversion of USB data to serial RS485 data with power supply via the USB port. Can be used for various different applications, e.g. if PCs do not have RS485 interfaces. For further information, see the Series 9787 data sheet – MY R. STAHL 9787A	266011

Sub-D plug, RS-485		**Art. No.**
	9-pin for connecting fieldbus or ServiceBus to CPU & power module Type 9440/15, 9185 field-busisolatingrepeater and 9786/15-12 media converter. The end-of-line resistor is installed and switchable. For non-intrinsically safe RS-485. Ambient temperature: -40 °C to +75 °C	105715

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