RFC 430 ETH-IB

Order No.: 2730190

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Remote Field Controller with 1x10/100 Ethernet, INTERBUS-Master, IP20 degree of protection, pluggable parameterization memory (MC FLASH)

Product notes

WEEE/RoHS-compliant since: 12/07/2009

Commercial data

GTIN (EAN)	4 017918 189235
Note	Made-to-order
sales group	K220
Pack	1 pcs.
Customs tariff	85371091
Catalog page information	Page 30 (AX-2009)

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Product description

Remote Field Controllers for Ethernet networks

When it comes to distributed, modular automation, Remote Field Controllers (RFC) with IEC 61131 control system intelligence and network connection are the ideal solution. Remote Field Controllers are compact, industrial PCs that provide networked, PC-based control performance on site with DIN rail mounting.

Integrated Ethernet connection

The integrated Ethernet network connection (via twisted pair) ensures Ethernet connectivity, an increasingly important factor.

The "DIN rail PCs" can be reached via Ethernet and TCP/IP by means of remote operation. Programming, operation, and visualization via the network enable innovative and cost-effective automation solutions.

When using the INTERBUS OPC server, standardized coupling with various visualization packages is also available via Ethernet.

IEC 61131 controller performance

Remote Field Controllers are based on the international PC/104 standard for embedded PC systems. All Remote Field Controllers are seamlessly configured and programmed according to IEC 61131 using the PC WORX automation software. PC WORX can be used locally on the serial interface or via the network (Ethernet).

The powerful processor can be programmed in all five IEC 61131 programming languages and ensures quick control task processing.

Ethernet communication

The integrated communication functions of the RFC ... ETH-IB modules enable direct and time-effective data exchange via Ethernet. The Ethernet TCP/IP protocol is used for universal possibilities to communicate with Remote Field Controllers. The standardized transport protocol TCP/IP is known worldwide and is available for all computer architectures and operating systems.

In the Ethernet network data is available in a standardized format using the INTERBUS OPC server.

Using the TCP/IP Send and Receive communication blocks according to the IEC-61131-5 standard, information between two Remote Field Controllers, e.g. necessary coupling variables, can be exchanged via Ethernet. This enables distributed, modular automation solutions to be configured. Even time synchronization is possible via the Ethernet network.

Technical data

Mechanical design

Format	124 x 185 x 190 mm (W x H x D without fan and without key)
	124 x 210 x 190 mm (W x H x D with fan and without key)
Height	181 mm
Width	122 mm
Depth	182 mm
Weight	1550 g
Note on weight specifications	Without fan module
Weight	1700 g
Note on weight specifications	With fan module
Degree of protection	IP20
Ambient temperature (operation)	0 °C ... 55 °C (from 45°C only with fan module)
Ambient temperature (storage/transport)	-25 °C ... 70 °C

Data interfaces

Interface	INTERBUS 2-wire remote bus
Type of connection	D-SUB-9 female connector
Interface	Parameterization/operation/diagnostics
Type of connection	RS-232-C, D-SUB connector, Ethernet 10/100 (RJ45)
Interface	Host system
Type of connection	Computer and control system, direct twisted pair connection (10Base-T/100Base-T) via RJ45
Interface	Ethernet 10Base-T/100Base-TX
Type of connection	RJ45 female connector
Transmission speed	10/100 MBit/s

IEC 61131 runtime system

Programming tool	PC WORX 2
	PC WORX 3
Processing speed	0.1 ms (1 K mix instructions)
	(1 K bit instructions)
Data memory	4 Mbyte
Retentive data memory	96 kByte (NVRAM)
Number of data blocks	(depends on data memory)
Number of timers, counters	(depends on data memory)
Number of control tasks	16
Realtime clock	Integrated (battery backup)

Power supply

Power supply connection	Screw terminal blocks, plug-in
Typical current consumption	1.5 A
Supply voltage	24 V DC
Supply voltage range	20 V DC ... 30 V DC (including ripple)
Residual ripple	±5%

INTERBUS data

Type	INTERBUS master
Number of devices with parameter channel (PCP)	max. 126
Number of supported devices	512 (of which 254 are remote bus devices/bus segments)
Number of I/O nodes	max. 8192
Battery	Integrated (rechargeable battery buffered)

Number of control tasks	16
Number of timers, counters	(depends on data memory)
Number of data blocks	(depends on data memory)
Number of flags	32618 ... 65236
Data memory	4 Mbyte
Retentive data memory	96 kByte (NVRAM)

Local diagnostics

Monitored function	Higher-level network
Optical representation	Status display via LED
Name	LINK, TRAFFIC

Certificates / Approvals

Certification	CUL, UL

Accessories

Item	Designation	Description

Cable/conductor

2806862	IBS PRG CAB	Connection cable, to connect the controller boards to the PC (RS-232-C), length 3 m

General

2730239	RFC DUAL-FAN	Fan module for Remote Field Controllers RFC 430 ETH-IB / RFC 450 ETH-IB
2737135	SPARE KEYSET	Spare key for the RFC 4xx ETH-IB.

Memory

2729389	IBS MC FLASH 2MB	Program and configuration memory, 2 Mbyte
2729392	IBS MC FLASH 4MB	Program and configuration memory, 4 Mbyte

Software

2985945	AX OPC SERVER	AX OPC SERVER, communication interface for OPC-capable visualization with PC WORX-based controls.

2985275	PC WORX BASIC LIC	Software package for PC-based automation solutions, PC WORX BASIC license, contains all 5 IEC languages, without MSFC compiler, max. 256 byte input and output data, version-specific license key
2985725	PC WORX DEMO	Software package for PC-based automation solutions, PC WORX DEMO, contains all 5 IEC languages, with MSFC compiler, max. 16 bytes input and output data
2985385	PC WORX PRO LIC	Software package for PC-based automation solutions, PC WORX PRO license, contains all 5 IEC languages, with MSFC compiler, max. 128 kB input and output data, version-specific license key
2985495	PC WORX PRO-MSFC LIC	Software package for PC-based automation solutions, PC WORX PRO-MSFC license, contains all 5 IEC languages and MSFC compiler, max. 64 Kbytes IN, 64 Kbytes OUT, version-specific license key

FAQs

- **Can I store the IP address of my controller permanently on the parameterization memory (IBS MC FLASH ...)?**

  Can I store the IP address of my controller permanently on the parameterization memory (IBS MC FLASH ...)?

- **Is it admissible to use a bit function of a library as first command in a POE?**

  Every POE needs a defined entry data type. The command in the first line changes the data type according to the respective command. In the case of a function from a library, the data type cannot be recognized during compilation and the ANY_NUM data type will be assumed erroneously, whereas the function is actually an ANY_BIT function. When downloading such a program, the device firmware 4.6 recognizes the different data type and aborts the download. You can avoid this download abort by inserting a valid command or a dummy in the first line which does not have access to the bit function of the library, e.g.: DUMMY:=DUMMY.

- **Is it possible to implement a bus parameterization with isolated disconnection if an incorrect bus is connected?**

  Yes, it is possible. Before a bus start it however is necessary to activate the configuration frame. Activate configuration frame: Code: 0711 Parameter_Count: 0001 Frame_Reference: 0001 Start bus: Code: 0701

- **Why can't I use the RS-232 (PRG) of the Remote Field Controller 430/450 with PC WORX 3.03?**

  A faulty communication DLL was supplied with PC WORX program version 3.03. When the RS-232 (PRG) is used for programming or for download, the control dialog reports a timeout. However, this is not case when using the Ethernet interface. Other control systems are likewise not affected. The error will be corrected for the next program version of PC WORX. As a remedy, please either use the Ethernet interface or copy the DLL (see attachment) into the following directory: ...\pcworx3\mwt. You can then use the serial interface as usual.

Address

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