



EP8102

Dual Basic Serial PIFA

Communication PIFA with two serial ports, selectable between RS232, RS485 (EXOline), and hEXOline. The PIFA is intended for mounting in an EXOflex house.

- Output +12 V, 700 mA for powering transmitters, radio modems etc.
- Can be supplemented with option card for modem, EIB, SIOX etc.
- Can be supplemented with external M-Bus/SIOX-connection
- Serial ports for external modem support etc.

EP8102 is a PIFA with two serial ports. One 12 V DC output can be used for powering external equipment, e.g. modems, sensors etc.

EXOflex

EXOflex is a general system for control, regulation, supervision and communication in general automation installations. The system offers great possibilities when constructing many different types of control and regulation systems: outstations in distributed systems, controllers in building automation systems, service gateways in LANs and on the Internet, etc.

The system is of a modular design and provides unique opportunities for adapting the number and type of inputs and outputs required, as well as the type of communication needed.

EXOflex consists of a housing and a selection of PIFA units. One power-PIFA must always be present in each house.

Installation

EP8102 can only be mounted in an EXOflex processor house. See "Rules for mounting" on page 2. It is of a standard design and size and can quickly and simply be slotted into place.

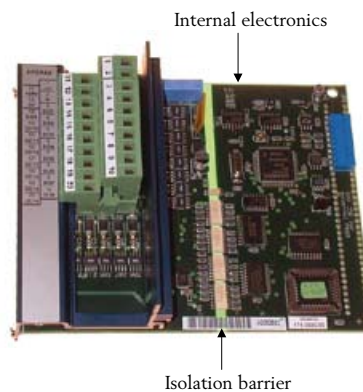


All electrical connections to external equipment are easily attainable on plug-in screw connectors.

For more information on how to install PIFA:s, see the instruction for EH11-S...41-S / EH10-S...40-S / ECX2.

EP8102 handles difficult electrical environments

The communication ports are galvanically insulated from each other and from the internal control logic circuits by a protective barrier, which is bridged by optocouplers. If necessary, the isolation from other circuits can be retained by using a separate power supply. Each process connection has active transient protection, which is led to a special EMI ground (disturbance protection ground) or to protective ground. This provides for optimal handling of difficult electrical environments.



The principles of the isolation barrier

Prepared for redundant power supply

The parts of the PIFA closest to the process get their power from an external source, which is normally the same as the source supplying the whole EXOflex unit with power. To handle power outage situations, it could also be power supplied from an alternative source, e. g. 9035 with external battery. See the product sheets for EP1011 and 9035.

Communication Ports

Port 2 and Port 3 are *not* handled by independent PIFA's via EFX, but directly by EXOreal. Port connections cannot be used in expansion houses.

RS232

The RS232 interface is selected via the hardware if you connect the signal SEL2 to GND2 or SEL3 to GND3 for the respective port.

Port 2 has the signals RxD, TxD, RTS, CTS.

Port 3 has a complete set of control signals for RS232, i.e. RxD, TxD, RTS, CTS, DTR, DSR, RI and DCD, as well as advanced modem support. Only Port 3 should be used for dial-up modems.

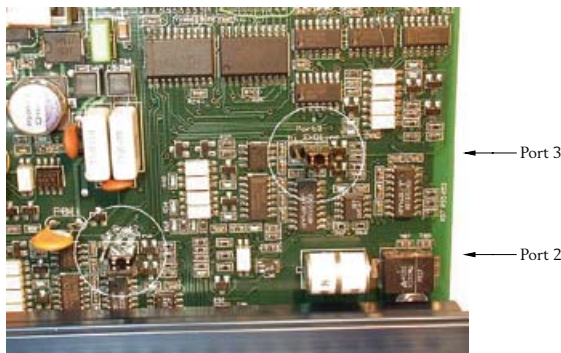
EXOline/hlEXOline

hlEXOline is obtained by changing a jumper setting on EP8102. EXOline is default.

When using more than one serial PIFA in a processor house, Port 2 (from the main processor) will be available in all positions, but not at the same time. One position at a time can be selected in the controller software. A recommended application for this is large meter reading systems.

Options for EP8102

In addition to the capabilities of EP8102, you can also add an option card for each port and position (2-8). When using an option card, software is used to connect a port to the card. *See the product sheets for modem 9011, the SIOX option 9020F, the EIB option 9017, and the Foxboro option 9015.*



The jumper switches for selecting EXOline/hlEXOline.

Rules for mounting

The internal port connections (Port 2, Port 3) in an EXOflex processor house go to different positions (2-8).

Port 3 is available in position 2 in the processor section.

Port 2 is available in any position. See below:

P1 1	P2 3	P2 5	P2 7
Processor			
P2, P3 2	P2 4	P2 6	P2 8

Internal Port 2, 3 connections.

Technical data

Supply voltage	24 V DC
tolerance	18...30 V DC
power consumption	max load: 600 mA, no load: 50 mA
Internal power consumption	5 V, 40 mA
CE	This product conforms with the requirements of European EMC standards CENELEC EN 61000-6-1 and EN 61000-6-3 and carries the CE-mark.

Communication ports 2 and 3

Type	EXOline (RS485), hEXOline or RS232, standard EXOline
Speed	configurable, max 19200 bps, standard 9600 bps
Galvanic isolation from the rest of the electronics, common mode voltage	max 250 V

Communication port 2

Control signals, RS232	RxD, TxD, RTS and CTS
Control signals, RS485	E
Connector EXOline, hEXOline and RS232	Terminal block

Communication port 3

Control signals, RS232	RxD, TxD, RTS, CTS, DTR, DSR, RI and DCD
Control signals, RS485	E
Connector EXOline, hEXOline and RS232	Terminal block

12V DC output

Tolerance	±10%
Current limit, electronically fused	700 mA

Option interface on port 3

EP8102 will be supplied with connection instructions for modem 9011. When installing another option, the instructions supplied with that option will apply. Stick the new instructions over the old ones. Jumper settings are specified in the text on the circuit board.

Connections

The RS232 Port

The designations below follow the RS232 standard's DTE terminology.

Pin no	Signal	Function	Direction
Port 2			
21	TxD2	Transmit data	Out
22	RxD2	Receive data	In
23	RTS2	Request to send	Out
24	CTS2	Clear to send	In
25	GND2	Signal Ground	
26	SEL2	Select RS232 interface. The RS232 interface is selected via the hardware if you connect the signal SEL2 to GND2.	
Port 3			
27	TxD3	Transmit Data	Out
28	RxD3	Receive Data	In
29	RTS3	Request To Send	Out
30	CTS3	Clear To Send	In
31	GND3	Signal Ground	
32	SEL3	Select RS232 interface. The RS232 interface is selected via the hardware if you connect the signal SEL3 to GND3.	
33	DTR3	Data Terminal Ready	Out
34	DSR3	Data Set Ready	In
35	DCD3	Data Carrier Detect	In
36	RI3	Ring Indication	In

Standard connection. Connections for EP8102 with the PTT modem 9011 on Port 3

Pin no	Signal	Detailed function	Group function
1	EMI ground	This terminal is connected internally to the PIFA's frame and to internal protective circuits. It should be connected to the ground rail with a separate, heavy wire.	
2	+12 V DC		+12 V DC output
3	Gnd3	Signal Ground	
4	B2		EXOline connection, Port 2 Galvanically insulated from all other circuits.
5	A2		
6	N2	The 0 V reference. This should be connected to the screen of the communication cable, which in turn should be grounded at one point at least.	
7	E2		
8	B3		EXOline connection, Port 3 Galvanically insulated from all other circuits.
9	A3		
10	N3	The 0 V reference. This should be connected to the screen of the communication cable, which in turn should be grounded at one point at least.	
11	E3		
12	nc		Modem 9011
13	nc		
14	EMI ground	This terminal is connected internally to the PIFA's frame and to internal protective circuits. It should be connected to the ground rail with a separate, heavy wire.	
15	R	Ring, connect to analog PSTN	
16	T	Tip, connect to analog PSTN	
17	A	Secondary Ring, connect to phone	
18	A1	Secondary Tip, connect to phone	
19	+24 V DC		Inputs for +24 V DC power supply
20	0 V	Power supply 0 V. The 0 V-connection is normally grounded at the supply source, so as to define the potential to earth reference and to compensate for disturbances and transients from I/O signals.	
21	TxD2	<i>See "The RS232 Port" on page 4.</i>	RS232 connection, Port 2 This connection is galvanically insulated from the internal circuits. GND2 is the signal zero. Use screened cable and earth it at one point.
22	RxD2		
23	RTS2		
24	CTS2		
25	GND2		
26	SEL2		
27	TxD3	<i>See "The RS232 Port" on page 4.</i>	RS232 connection, Port 3 This connection is galvanically insulated from the internal circuits. GND3 is the signal zero. Use screened cable and earth it at one point.
28	RxD3		
29	RTS3		
30	CTS3		
31	GND3		
32	SEL3		
33	DTR3		
34	DSR3		
35	DCD3		
36	RI3		

Option EIB. Connections for EP8102 with the EIB option 9017 on Port 3

Pin no	Signal	Detailed function	Group function
1	EMI ground	This terminal is connected internally to the PIFA's frame and to internal protective circuits. It should be connected to the ground rail with a separate, heavy wire.	
2	+12 V DC		+12 V DC output
3	Gnd3	Signal Ground	
4	B2		EXOline connection, Port 2 Galvanically insulated from all other circuits.
5	A2		
6	N2	The 0 V reference. This should be connected to the screen of the communication cable, which in turn should be grounded at one point at least.	
7	E2		
8	B3		EXOline connection, Port 3 Galvanically insulated from all other circuits.
9	A3		
10	N3	The 0 V reference. This should be connected to the screen of the communication cable, which in turn should be grounded at one point at least.	
11	E3		
12	DTR		Option 9017
13	Gnd	Signal Ground	
14	EMI ground	This terminal is connected internally to the PIFA's frame and to internal protective circuits. It should be connected to the ground rail with a separate, heavy wire.	
15	TxD	Transmit Data (Out)	
16	RxD	Receive Data (In)	
17	RTS	Request To Send (Out)	
18	CTS	Clear To Send (In)	
19	+24 V DC		Inputs for +24 V DC power supply
20	0 V	Power supply 0 V. The 0 V-connection is normally grounded at the supply source, so as to define the potential to earth reference and to compensate for disturbances and transients from I/O signals.	
21	TxD2	<i>See "The RS232 Port" on page 4.</i>	RS232 connection, Port 2 This connection is galvanically insulated from the internal circuits. GND2 is the signal zero. Use screened cable and earth it at one point.
22	RxD2		
23	RTS2		
24	CTS2		
25	GND2		
26	SEL2		
27	TxD3	<i>See "The RS232 Port" on page 4.</i>	RS232 connection, Port 3 This connection is galvanically insulated from the internal circuits. GND3 is the signal zero. Use screened cable and earth it at one point.
28	RxD3		
29	RTS3		
30	CTS3		
31	GND3		
32	SEL3		
33	DTR3		
34	DSR3		
35	DCCD3		
36	RI3		

Option SIOX. Connections for EP8102 with the SIOX option 9020F on Port 3

Pin no	Signal	Detailed function	Group function
1	EMI ground	This terminal is connected internally to the PIFA's frame and to internal protective circuits. It should be connected to the ground rail with a separate, heavy wire.	
2	+12 V DC		+12 V DC output
3	Gnd3	Signal Ground	
4	B2		EXOline connection, Port 2 Galvanically insulated from all other circuits.
5	A2		
6	N2	The 0 V reference. This should be connected to the screen of the communication cable, which in turn should be grounded at one point at least.	
7	E2		
8	B3		EXOline connection, Port 3 Galvanically insulated from all other circuits.
9	A3		
10	N3	The 0 V reference. This should be connected to the screen of the communication cable, which in turn should be grounded at one point at least.	
11	E3		
12	nc		Option 9020F
13	nc		
14	EMI ground	This terminal is connected internally to the PIFA's frame and to internal protective circuits. It should be connected to the ground rail with a separate, heavy wire.	
15	nc		
16	S	Meter signal	
17	N	Meter signal	
18	+24 V DC		
19	+24 V DC		Inputs for +24 V DC power supply
20	0 V	Power supply 0 V. The 0 V-connection is normally grounded at the supply source, so as to define the potential to earth reference and to compensate for disturbances and transients from I/O signals.	
21	TxD2	<i>See "The RS232 Port" on page 4.</i>	RS232 connection, Port 2 This connection is galvanically insulated from the internal circuits. GND2 is the signal zero. Use screened cable and earth it at one point.
22	RxD2		
23	RTS2		
24	CTS2		
25	GND2		
26	SEL2		
27	TxD3	<i>See "The RS232 Port" on page 4.</i>	RS232 connection, Port 3 This connection is galvanically insulated from the internal circuits. GND3 is the signal zero. Use screened cable and earth it at one point.
28	RxD3		
29	RTS3		
30	CTS3		
31	GND3		
32	SEL3		
33	DTR3		
34	DSR3		
35	DCD3		
36	RI3		

Option Foxboro. Connections for EP8102 with the Foxboro option 9015 on Port 3.

Pin no	Signal	Detailed function	Group function
1	EMI ground	This terminal is connected internally to the PIFA's frame and to internal protective circuits. It should be connected to the ground rail with a separate, heavy wire.	
2	+12 V DC		+12 V DC output
3	Gnd3	Signal Ground	
4	B2		EXOline connection, Port 2 Galvanically insulated from all other circuits.
5	A2		
6	N2	The 0 V reference. This should be connected to the screen of the communication cable, which in turn should be grounded at one point at least.	
7	E2		
8	B3		EXOline connection, Port 3 Galvanically insulated from all other circuits.
9	A3		
10	N3	The 0 V reference. This should be connected to the screen of the communication cable, which in turn should be grounded at one point at least.	
11	E3		
12	nc		Option 9015
13	Gnd	Signal Ground	
14	EMI ground	This terminal is connected internally to the PIFA's frame and to internal protective circuits. It should be connected to the ground rail with a separate, heavy wire.	
15	TxD	Transmit Data (Out)	
16	RxD	Receive Data (In)	
17	RTS	Request To Send (Out)	
18	CTS	Clear To Send (In)	
19	+24 V DC		Inputs for +24 V DC power supply
20	0 V	Power supply 0 V. The 0 V-connection is normally grounded at the supply source, so as to define the potential to earth reference and to compensate for disturbances and transients from I/O signals.	
21	TxD2	<i>See "The RS232 Port" on page 4.</i>	RS232 connection, Port 2 This connection is galvanically insulated from the internal circuits. GND2 is the signal zero. Use screened cable and earth it at one point.
22	RxD2		
23	RTS2		
24	CTS2		
25	GND2		
26	SEL2		
27	TxD3	<i>See "The RS232 Port" on page 4.</i>	RS232 connection, Port 3 This connection is galvanically insulated from the internal circuits. GND3 is the signal zero. Use screened cable and earth it at one point.
28	RxD3		
29	RTS3		
30	CTS3		
31	GND3		
32	SEL3		
33	DTR3		
34	DSR3		
35	DCD3		
36	RI3		

Product documentation

Document	Type
EH11-S...41-S / EH10-S...40-S / ECX2 EXO System Manual	Instruction for EXOflex houses and the EXOflex processor ECX2 Manual covering the EXO System

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