EP7601 / EX7601

EP7601 - Access Control PIFA
EX7601 - Access Control Unit

EP7601 is a PIFA for use in access control systems for controlling and monitoring of a door environment.

EX7601 is an external PIFA-unit with IP44 plastic casing for use in access control systems for controlling and monitoring of a door environment.

- **2 sabotage-monitored inputs for monitoring of door contacts etc.**
- **1 digital input for a micro switch in a door unit (for generating sabotage alarms)**
- **1 insulated digital input for door maneuver (push-button functionality)**
- **1 insulated digital input**

- **2 relay outputs for controlling securing plates and alarm bypass**
- **3 digital outputs for LEDs**
- **2 outputs for activation of a buzzer**
- **2 communication ports for connection of card readers**
- **Outputs for power supplying card readers**

EP7601 is a PIFA primarily designed for use in access control systems for controlling and monitoring of a door environment. In access control applications the unit is used together with some of the controller functions for **EXOsecure 3.0**.

EP7601 can also be used for controlling and monitoring in other types of projects.

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

EP7601 can be installed directly in an EXOflex housing. 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.

The PIFA may also be installed in a separate housing intended for mounting near the door environment. This external version of EP7601 is called ***EX7601***.

EX7601

EX7601 is functionally more or less identical to EP7601. However, EX7601 is enclosed in an IP44-classed plastic casing. Sabotage protection is fitted as standard.

See also Technical data for EX7601 on page 4.

≈REGIN

THE CHALLENGER IN BUILDING AUTOMATION

Connections

EP7601 has:

- 2 sabotage-monitored inputs for monitoring of door contacts etc.
- 1 digital input for a micro switch in a door unit. Is used for generating sabotage alarms at attempts of breaking the door open.
- 1 insulated digital input for door maneuver, e.g. push-button functionality.
- 1 insulated digital input for general use.
- 2 relay outputs for controlling securing plates in doors, etc. The outputs can be connected to a relay switch which is either normally open or closed (NO, NC, C). For automatic doors and turnstiles the same output is used, but with the difference that the output is pulsed.
- 3, from the rest of the electronics galvanically separated, digital outputs for LED indication in certain card readers.
- 2, from the rest of the electronics galvanically separated, outputs for activation of an external buzzer for indication of, for example, a door that is open or has been broken open, and forewarning of function for buying time.
- 2, from the rest of the electronics galvanically separated, communication ports for connecting card readers with open collector output, so called Data & Clock outputs. The hardware is prepared for connection of other types of card readers through option cards.
- 12 or 5 V DC current-limited outputs for power supply of card readers and for power supply of digital outputs for LED indication in card readers.
- 24 V DC current-limited output for power supply of digital outputs, e.g. for buzzer control and buy-time function.
- 1 communication port for connecting to the Processor unit through the EFX channel (only for EX7601).

Digital in- and outputs, and relay outputs have LED indications in the panel.

Power supply

The EMI earth must be connected to the earth rail or equivalent, to prevent disturbances.

The 0 V connection must also be grounded. This is normally done at the power unit's negative pole.

Address Settings for EX7601

The address settings for EX7601 are made using dipswitches, according to the table below. The ON position is indicated on the dipswitch.

Address	Dipswitch					
	1	2	3	4	5	6
0	Address 0 cannot be used					
1	Address 1 should not be used					
2	On	On	On	Off	On	On
3	On	On	On	On	Off	On
4	On	On	On	Off	Off	On
5	Off	On	On	On	On	On
6	Off	On	On	Off	On	On
7	Off	On	On	On	Off	On
8	Off	On	On	Off	Off	On
9	On	Off	On	On	On	On
10	On	Off	On	Off	On	On
11	On	Off	On	On	Off	On
12	On	Off	On	Off	Off	On
13	Off	Off	On	On	On	On
14	Off	Off	On	Off	On	On
15	Off	Off	On	On	Off	On
16	Off	Off	On	Off	Off	On
17	On	On	Off	On	On	On
18	On	On	Off	Off	On	On
19	On	On	Off	On	Off	On
20	On	On	Off	Off	Off	On
21	Off	On	Off	On	On	On
22	Off	On	Off	Off	On	On
23	Off	On	Off	On	Off	On
24	Off	On	Off	Off	Off	On
25	On	Off	Off	On	On	On
26	On	Off	Off	Off	On	On
27	On	Off	Off	On	Off	On
28	On	Off	Off	Off	Off	On
29	Off	Off	Off	On	On	On
30	Off	Off	Off	Off	On	On
31	Off	Off	Off	On	Off	On

When setting the address you have to consider the addresses of the other PIFA units, also the ones in the EXOflex housing.

Technical data

Main Power Supply, Terminals 19 & 20	24 V AC or DC
tolerance	20...30 V
power consumption at maximum load	electronically fused to 2.5 A
power consumption without load	50 mA
Internal power consumption	5 V, 100 mA, only for EP7601

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.

Digital inputs, DI1-2

Type	Standard DI

Internal digital input, DI3

Type	for 24 V DC floating switch in cabinet, cable length max 3 m
Current when closed connection	5.2 mA

Sabotage-monitored inputs, SAI1-2

Type	Secure AI, galvanically connected to +-**C**, any other floating
Max input voltage	15 V DC
Measuring range	0.5...12 V DC

Relay outputs, DO1-2

Type	Alternating, NO, NC, CO
Contact data	
Maximum switching voltage	48 V AC/DC
Minimum switching voltage	12 V AC/DC
Maximum continuous current	6 A
Maximum inrush current	30 A
Minimum switching current	10 mA
AC-connection	
Maximum switching power, resistive load	300 VA
Maximum switching power for DC connection and resistive load	
48 V switching voltage	20 W
24 V switching voltage	140 W
Insulation, coil-contact	4000 V_{RMS}
Transient protection	Varistor, 250 V_{RMS}

Optoisolated, galvanically floating, digital outputs, DO3-4

Type	current-sourcing, externally power supplied through *DO3-4 in+* and *DO3-4 in-*
Output voltage	depending on the external power supply
driving capacity/level	max 500 mA and depending on chosen power supply
Common mode voltage	±100 V
DO3-4 in+, *DO3-4 in-*	max input voltage 32 V DC

Optoisolated, galvanically floating, digital outputs, DO5-7

Type	current-sourcing, externally power supplied through *DO5-7 in+* and *DO5-7 in-*
Output voltage	depending on the external power supply
driving capacity/level	max 500 mA and depending on chosen power supply
Common mode voltage	±100 V
DO5-7 in+, *DO5-7 in-*	max input voltage 32 V DC

Contin. Technical data

Available output voltages

Output voltage 1	+12 V DC ±5 %, from terminal 30 (**12 V out**) and 32 (**0 V**)
Output voltage 2	+5.5 V DC ±2 % from terminal 31 (**5 V out**) and 32 (**0 V**)
Usage	Primarily for power supplying **DO5**, **DO6**, **DO7** and CR
Type	Galvanically floating outputs with common 0 V (terminal 32)
current limit, 12 V	500 mA
current limit, 5 V	500 mA
Common mode-voltage	±100 V
Output voltage 3	24 V DC, from terminal 2 (**+C**) and 3 (**-C**)
Usage	Primarily for power supplying **DO3** and **DO4**
Type	Galvanically connected with terminal 25. All other galvanically floating
tolerance	±5 %
current limit	100 mA
Common mode voltage	+-100 V

Communication ports, galvanically floating, for card reader, CR

Number of ports	2
Type	Open Collector, Clock & Data
Insulation	Galvanically connected to **Output voltage 1** and **2**, all other floating
Communication speed standard	max 9600 bps
Common mode voltage	±100 V
Option	contact Regin
Power back-up	See model EP1011 and 9035

Technical data for EX7601

Main Power Supply, Terminals 19 & 20	24 V AC or DC
tolerance	20...30 V
power consumption at maximum load	electronically fused to 1 A
power consumption without load	110 mA

Port for Communicating with Processor, EFX channel

Type	RS485
Communication speed	115200 bps

Casing

|	
Dimensions	180 x 135 x 60 mm (L x W x H)
Material	ABS
Color	Gray
Cable inlets	1 of type FEM 3-5, 3 of type FEM 7-10
Mounting	Wall mounted
Protection class	IP44

Connections

Pin no	Signal	Detailed function	Group function	LED indication Signal / color	Functionality description when used with access control block
1	EMI ground	Function 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	+C	+24 V DC. Output for analog inputs AI and digital inputs DI. Fused for 100 mA, for powering of digital outputs. Is normally connected to DO3-4 IN+ (terminal 10) if 24 V DC level is required on DO3-4			
3	-C	Zero reference for +C. Is normally connected to DO3-4 IN- (terminal 11) and to DI- (terminal 21)			
4	NO	DO1	Digital output 1	DO1, yellow	Used for controlling securing plates in doors, alternately for turnstiles.
5	NC	Relay output with NO, NC and CO.			
6	CO				
7	NO	DO2	Digital output 2	DO2, yellow	Used for: 1. Bypass function 2. Alarm output for buy time 3. Alarm output for on/off alarm 4. Turnstile output 2 (push button/CR2)
8	NC	Relay output with NO, NC and CO.			
9	CO				
10	DO3-4 in+	Plus input for external power supply for DO3 and 4			
11	DO3-4 in–	Reference input for external power supply for DO3 and 4			
12	DO3	Digital output 3		DO3, yellow	Warning output for buy-time function
13	DO4	Digital output 4		DO4, yellow	Buzzer control for open, or broke open, door
14	DO5-7 in+	Plus input for external power supply for DO5, 6, and 7			
15	DO5-7 in–	Reference input for external power supply for DO5, 6 and 7.			
16	DO5	Digital output 5		DO5, yellow	Output for LED control in card readers, red (orange)
17	DO6	Digital output 6		DO6, yellow	Output for LED control in card readers, green (orange)
18	DO7	Digital output 7		DO7, yellow	Output for LED control in card readers, yellow
19	24 V in + ~ (phase)	24 V AC/DC input for main power supply + input for DC feed Phase for AC-feed	Inputs for +24 V DC power supply	P, yellow (only EX7601)	
20	24 V in – ~ (neutral)	24 V AC/DC input for main power supply + input for DC feed Zero for AC feed			
21	DI–	Reference input for power supply of DI1, 2, and 3. Is normally connected to –C, terminal 3			
22	DI1	Digital input 1		DI1, yellow	Input for push button
23	DI2	Digital input 2		DI2, yellow	Extra input
24	DI3	Digital input 3. Maximum cable length 3 m.			Input for sabotage alarm in door unit. Only for "internal use". Is connected to a micro switch in the lid of the door unit or in a cabinet door.
25, normally not used!	SAI–	Zero reference for SAI1 and SAI2. Is not used in access control applications!			

26	15:1	Power supply output			For door sensor 1
27	SAI1	Sabotage-secured input			For door sensor 1
28	15:2	Power supply output			For door sensor 2
29	SAI2	Sabotage-secured input			For door sensor 2
30	12 V out	12 V DC power supply output			For card reader
31	5 V out	5 V DC power supply output			For card reader
32	0 V	Zero reference for 12 V out (terminal 30) and 5 V out (terminal 31)			
33	Rx1		CR1	Rx, CR1 / yellow	Input for data signal from card reader 1, CR1. The signal is often called DATA in Omron-compatible readers.
34	Clk1			Clk, CR1 / yellow	Input for clock signal from card reader 1, CR1. The signal is often called CLOCK in Omron-compatible readers.
35	Rx2		CR2	Rx, CR2 / yellow	Input for data signal from card reader 2, CR2. The signal is often called DATA in Omron-compatible readers.
36	Clk2			Clk, CR2 / yellow	Input for clock signal from card reader 2, CR2. The signal is often called CLOCK in Omron-compatible readers.

In addition to the terminals found on EP7601, EX7601 has another four terminals for the EFX channel.

Pin no	Signal	Detailed function	Group function	LED indication. Signal / color.	Functionality description
37	B		EFX		EFX: B
38	A			EFX/yellow	EFX: A
39	N	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.			EFX: N
40	E				EFX: E

Wiring example
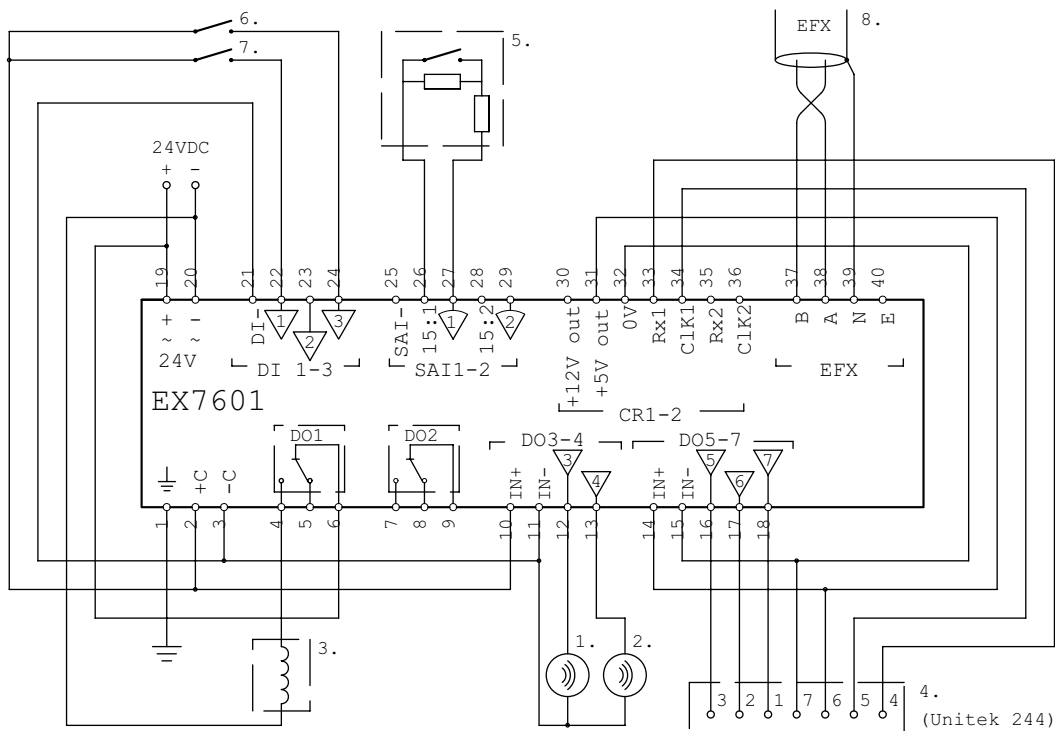
Wiring example with 24 V DC power supply and 5 V connected Unitek reader

The following functions are found in the wiring example:

1. Buzzer for buy time
2. Buzzer open or forced open door
3. Securing plate
4. Connection of Unitek 244 card reader
5. Door switch
6. Micro switch
7. Push button
8. Communication

Product documentation

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

≈REGIN
THE CHALLENGER IN BUILDING AUTOMATION