

Datasheet

Switching actuator PA-21S-230-16-1RM

V 1

PEAR Automation PA-21S-230-16-1RM switching actuators are KNX-certified DIN-rail mountable devices with 8 identical potential free relay contacts and 4 channel-independent logic channels which can be controlled separately with KNX messages.

The devices impress by their optimal use of resources in hard- and software and a full functionality. There is only a space requirement of the PA-21S-230-16-1RM of 12 horizontal pitches without any waiver on performance in terms of wiring comfort or quality. With the use of the 4 additional channel-independent logic channels there is the possibility to use digital links, analogue value comparison, time delays, message filters, generating of forced guidance messages, etc.

Part of the functionality of the output channels is:

- adjustable behaviour at power breakdown/return
- 2 free linkable central functions
- an active status object
- disable function and forced guidance
- staircase timer function and ON-/OFF delay
- 5 storable 8-bit scenes per channel
- channel-based logic functions

All base functions are configurable with a variety of further configuration possibilities to get the best for the respective application. The product database can be downloaded at www.pear-automation.at.

The installation takes place on 35mm DIN rails in power distributions.

Technical data

Device

		PA-21S-230-16-1RM
Outputs	Number of potential free channels Nominal voltage Nominal current per channel Power dissipation load side max.	21 230V AC / 50Hz 16A <6,5W
Application power supply	Voltage range Active power consumption	230V ±10% / 50Hz ±10% <500mW
KNX	Physics Number of devices on 1 line Bus voltage Current consumption	TP1 max. 256 21...30V DC <12mA
Switching frequency	Max. number of switches among the whole device per minute with homogeneously distribution after device start-up time ¹⁾	500
Reaction time		approx. 25ms
Electrical connection	KNX	KNX bus terminal WAGO 243-211 (included in delivery)
Electrical connection	Switching channels Application power supply	Screw terminal Screw terminal
	1 x solid core 2 x solid core Stranded core with wire-end sleeve TWIN wire-end sleeve Strip length min. tightening torque	0,33...4mm ² 0,33...2,5mm ² 0,25...4mm ² 0,25...2,5mm ² 8mm 0,5 Nm max.
Degree of protection	According to EN 60529	IP20
Protection class	According to EN 61140	II
Overvoltage category	According to EN 60664-1	III
Pollution degree	According to EN 60664-1	2
Acceptable mains supply systems		TN, TT ²⁾
Weight	Without packaging	622g
Dimensions	Width x depth x height Width in HP (à 18mm)	210 x 58 x 90mm 12
Housing colour		Grey

Environment conditions

		PA-21S-230-16-1RM
Temperature range	Operation Storage Transport	0...45°C -25...55°C -25...75°C
Maximal operation height		2000m NN
Air humidity		<85% non-condensing

Prevent from direct sunlight!

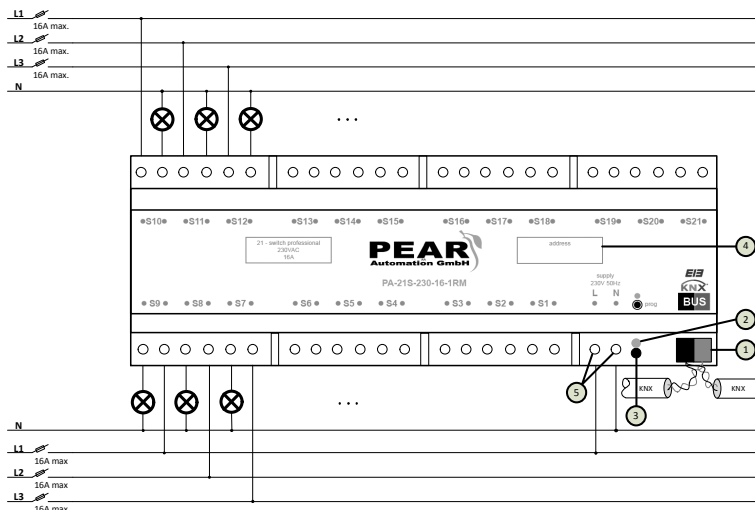
- 1) If the value is exceeded, switching operation will be done after a delay.
2) IT-Networks are not permitted!



Output channels

		PA-21S-230-16-1RM
Continuous current	Per channel	max. 16A
Max. switching voltage		277V AC
Operating principle		Potential free
Relay principle		Latching
Principle of shutoff	At contact opening	Micro shutoff
Inrush current peaks	10µs 10ms	500A 170A
Electrical fuse	Characteristics, ampere	max. C16
Switching of sockets		Acceptable
Switchable loads	Purely resistive AC1 ¹⁾ , cosφ=0,8 AC3 ¹⁾ , cosφ=0,45 Conventional light bulbs, HV-halogen Fluorescent lamp load uncompensated Fluorescent lamp load parallel compensated EB	3680W 3680W 1800W 2500W 2500W 2500W, 200µF To be calculated ²⁾
Life expectancy	Mechanic 3680W purely resistive 3680W AC1 1800W AC3	>3 x 10 ⁶ switching operations >1 x 10 ⁵ switching operations >1,5 x 10 ⁴ switching operations >1 x 10 ⁵ switching operations
Minimum switching load	24 VDC	100mA
Forward resistance ³⁾	Of relays at closed state, from terminal to terminal	< 55mΩ

Wiring diagram



Device connections

- 1 ... KNX bus terminal
- 2 ... Programming-LED green
- 3 ... Programming switch
- 4 ... Labelling area for physical address
- 5 ... Application power supply

- 1) According to EN 60947-4-1
- 2) The maximum number of EBs depends on inrush peak current of the connected EBs. The combined inrush peak currents of all parallel installed EBs should not exceed the maximum inrush peak current of the relay contacts after taking pulse duration into account. The values of the actuator are stated in the table of this chapter – the values from the EBs to be connected will be stated in their data sheets. In common this number of EBs are no problem:
 - 18W: 20 pieces
 - 24W: 20 pieces
 - 36W: 12 pieces
 - 58W: 10 pieces
- 3) The value can be taken for the calculation of the loop impedance of a circuit. The stated value correlates to the worst-case, calculated by the worst-cases of each relevant component. The typical value is much lower at approx. 2,5...3mΩ.