SA3-012M

EN Switching actuator 12-fold

Characteristics

- The actuator is designed for switching to twelve various appliances and loads with potentialless contact.
- SA3-012M is a switching actuator containing 12 independent relays with NO potentialless contacts, with the fact that switches the same potential.
- Maximal loadability of contacts is 8 A/2000 VA/AC1.
- Each of the twelve output contacts are individually controllable and addressable.
- Actuator SA3-012M is powered by an AC voltage 230V. The unit SA3-012M/120V is powered by AC voltage 120V AC.
- BUS is galvanically separated from the internal circuits of unit.
- LED on front panel signalizes state of each output.
- Contact status of each relay can be changed separately and manually by control buttons on a front panel.
- SA3-012M is normally supplied in the option $AgSnO_2$ contact material.
- SA3-012M in design 6-MODULE is designed to be mounted into a switchboard, onto DIN rail EN60715.

General instrucions

CONNECTION INTO THE SYSTEM

Connect the product to the system according to the connection diagram listed with each product. The wires of data BUS of iNELS system are connected to the terminals BUS + (standard red wire for single-pair wiring, red and yellow for two-pair wiring) and BUS- (standard black wire for single-pair wiring, black and white for two-pair wiring), and it is not possible to change the terminals. A twisted pair of wires must be used for the data BUS with a wire diameter at least 0.8 mm. Data communications and power supply to the units are led in a single pair of wires, and you must observe the power cable size with regard to voltage loss on the wire and the maximum power draw. Powering the device is provided by connection to the mains voltage AC 230 V to terminals L and N. The product must remain connected to the mains voltage at all times.

CAPACITY AND CENTRAL UNIT

It is possible to connect to the central unit CU3-01M or CU3-02M two independent BUSes BUS by means of terminals BUS1+, BUS1- and BUS2+, BUS2-. It is possible to connect to each BUS up to 32 units, so it is possible to connect directly to the central unit a total of 64 units. It is necessary to comply with the requirement of a maximum load of one BUS line - maximum up to 1000 mA current. It is the sum of the rated currents of the units connected to the BUS line, other units can be connected using the units MI3-02M, which generate further BUSes BUS. These are connected to the CU3 unit via the system BUS EBM and you can connect a total of 8 units via EBM BUS to the central unit MI3-02M.

COMMUNICATION BUS OF THE SYSTEM

The bus must have a cable created by a twisted pair of wires for data BUS of the system with a minimum wire diameter of 0.8 mm. A shielded cable must be used in case of installation of cables of the BUS in an environment with the possibility of electromagnetic interference (e.g. when running along power lines, near electric machines and devices, during LV passage through a distributor, etc.). We highly recommend using the cable JYSTY 2x2x0,8 for BUS. The BUS cable is installed in accordance with its mechanical properties given by the producer (into a pipe/bar, under plaster, underground, suspended, etc.) To increase the mechanical resistance of cables, we always recommend installing the cable into an electrical insulation pipe of the appropriate diameter. The total length of wires of the BUS for CU3-01M (CU3-02M), or MI3-02M, can be 1,100 m (550 m for each BUS). The topology of the communications BUS is open with the exception of topology of the circuit. It is necessary to use the cable FTP CAT5e or higher for the system BUS EBM – one pair of wires is connected to the terminals EBM+ and EBM- and the second pair of wires can be curled and connected to GND terminal (just on the one side of EBM BUS). The typology of EBM system BUS is strictly linear and must be terminated at both ends with a nominal resistance value of 120Ω. It is the installer's responsibility to follow all instructions in the manual and all installation requirements for the RS485 BUS.

SUPPLYING THE SYSTEM

For supplying power to system units, it is possible to use the power sources of ELKO EP titled PS3-100/iNELS. We recommend backing up the system with backup batteries connected to the source of PS3-100/iNELS (see sample diagram of connecting the control system).

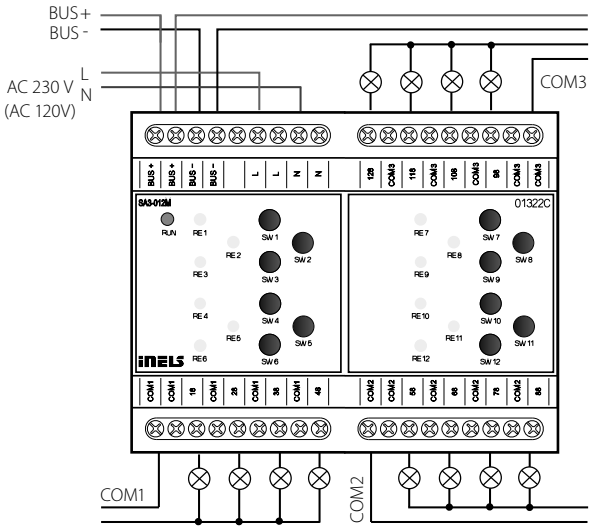
GENERAL INFORMATION

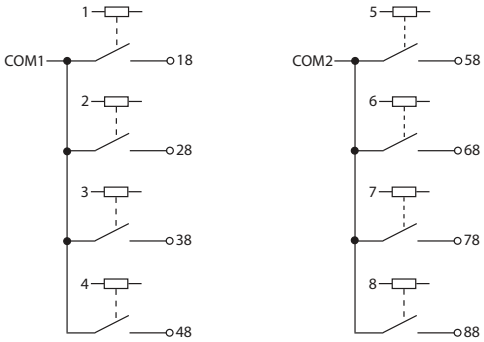
The unit is capable of working as an independent element without a central unit only in very limited scope of its functions. For full utility of the unit, it is necessary for the unit to be connected to the central unit of the system CU3-01M, or to a system that already contains this unit as its expansion to include further system.

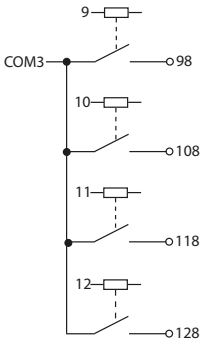
All unit parameters are set through the central unit CU3-01M in the software iDM3.

There are LED diodes on the unit front panel, for indication of supply voltage and communication with the central unit series CU3. In case that the RUN diode flashes at regular intervals, so there is standard communication between the unit and BUS. If the RUN diode lights permanently, so the unit is supplied from BUS, but there is no communication between BUS and unit. In case that RUN diode is OFF, so there is no supply voltage on the terminals BUS+ and BUS-.

Connection







Technical parameters

	SA3-012M
Outputs	
Output:	12 x NO 8 A/AC1
Switched voltage:	250 V AC1, 24 V DC
Switched output:	2000 VA/AC1, 192 W/DC
Peak current:	10 A
Output relays separated from all internal circuits:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolation between relay inputs COM1, COM2 and COM3:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolates. voltage open relay contact:	1 kV
Max. current of one common terminal:	16 A
Minimal switched current:	100 mA / 10 V DC
Switching frequency without load:	300 min^{-1}
Switching frequency with rated load:	15 min^{-1}
Mechanical life:	1x 10^7
Electrical life AC1:	1x 10^5
Output indication:	12x yellow LED
Communication	
Installation BUS:	BUS
The installation BUS is separated from all internal circuits:	reinforced Insulation (Cat. II surges by EN 60664-1)
Status indication unit:	green LED RUN
Power supply	
Voltage of BUS / tolerance / nominal current:	27 V DC, -20 / +10 %, 5 mA
SA3-012M/120V Supply voltage of power section (relay) tolerance / nominal current:	120 V (60 Hz), -15 / +10 %, 40 mA
SA3-012M Supply voltage of power section (relay) tolerance / nominal current:	AC 230 V (50 Hz), -15 / +10 %, 20 mA
Connection	
Terminal:	max. 2.5 mm^2 / 1.5 mm^2 with sleeve
Operating conditions	
Operating temperature:	-20 .. +55 °C
Storing temperature:	-30 .. +70 °C
Protection degree:	IP20 device, IP40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operation position:	any
Installation:	switchboard on DIN rail EN 60715
Design:	6-MODUL
Dimensions and weight	
Dimensions:	90 x 105 x 65 mm
Weight:	307 g

Warning

Before the device is installed and operated, read this instruction manual carefully and with full understanding and Installation Guide System iNELS3. The instruction manual is designated for mounting the device and for the user of such device. It has to be attached to electro-installation documentation. The instruction manual can be also found on a web site www.inels.com. Attention, danger of injury by electrical current! Mounting and connection can be done only by a professional with an adequate electrical qualification, and all has to be done while observing valid regulations. Do not touch parts of the device that are energized. Danger of life-threat! While mounting, servicing, executing any changes, and repairing it is essential to observe safety regulations, norms, directives and special regulations for working with electrical equipment. Before you start working with the device, it is essential to have all wires, connected parts, and terminals de-energized. This instruction manual contains only general directions which need to be applied in a particular installation. In the course of inspections and maintenance, always check (while de-energized) if terminals are tightened.