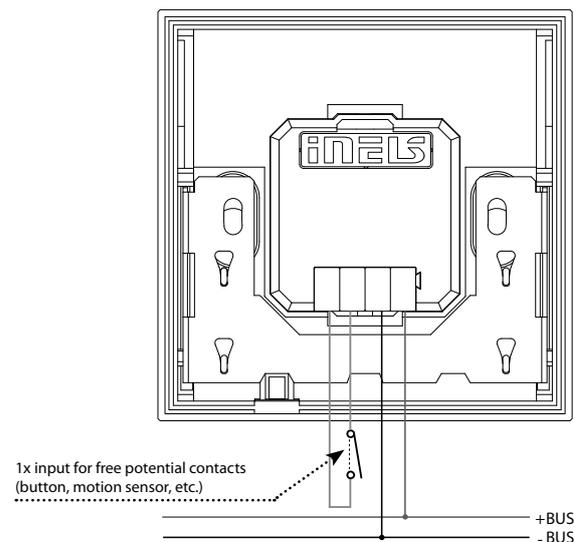
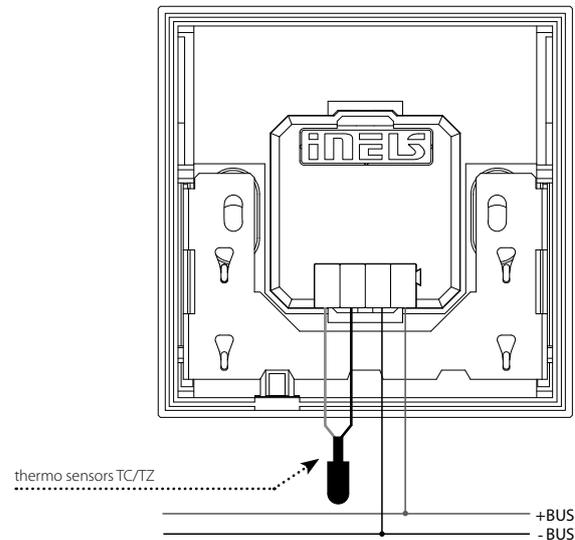


Characteristics

- Metal switch buttons MSB3-40/XX, MSB3-60/XX and MSB3-90/XX are part of a comprehensive range of iNELS control units and can be advantageously used in all projects.
- MSB3 comes with premium metal plates in the antique copper, satin brass, brushed silver, and graphite black finish.
- MSB3-40/XX is equipped with four, MSB3-60/XX six and MSB3-90/XX nine touch buttons whose functions can easily modify by the software.
- The metal switch button are equipped with an integrated temperature sensor. It is also equipped with analog-to-digital input (AIN/DIN), which can be used to connect potential-free contact or external temperature sensor TC/TZ (for example temperature measurement of the floor).
- Advantages over conventional switches/buttons are saving space, signalling the state of any system output, the ability to measure temperature as well as the ability to connect external buttons or detectors.
- Each button can control any actuator (appliance) in the system. Also, you can assign each button a different function or macro (set of functions). It is therefore possible to use one button to control several appliances at once.
- Metal switch button is a design component of the iNELS system and is available in antique copper, satin brass, brushed silver, and graphite black versions.
- Individual buttons can be illuminated in white.
- MSB3-40/XX, MSB3-60/XX and MSB3-90/XX are designed for mounting into an installation box.
- All versions are in the size of the standard module (94x94 mm).

Connection



General instructions

CONNECTION TO THE SYSTEM, INSTALLATION BUS

iNELS3 peripheral units are connected to the system through the BUS installation. Installation BUS conductors are connected to the terminal units to BUS+ and BUS- terminals, wires cannot be interchanged. For installation of BUS it is necessary to use a cable with a twisted pair of wires with a diameter of at least 0.8 mm, the recommended cable is iNELS BUS Cable, whose features best meet the requirements of the BUS installation. Bearing in mind that in terms of all the properties it is possible in most cases also use the cable JYSTY 1x2x0.8 or JYSTY 2x2x0.8, however it is not recommended as the best option. In the case of a cable with two pairs of twisted wires it is not possible to use the second pair of the other for modulated signal due to the speed of communications; it is not possible within one cable to use one pair for one segment BUS and the second pair for the second segment BUS. For installation of BUS it is vital to ensure that it is kept at a distance from the power lines of at least 30 cm and must be installed in accordance with its mechanical properties. To increase mechanical resistance of cables we recommend installation into a conduit of suitable diameter. BUS topology installation is free except for the ring, wherein each end of the bus must terminate at the terminals BUS + and BUS- peripheral unit. While maintaining all the above requirements, the maximum length of one segment of the installation BUS can reach up to 300 m. Due to the data communication and supply of units in one pair of wires, it is necessary to keep in mind the diameter of wires with regards to voltage loss on the lead and the maximum current drawn. The maximum length of the BUS applies provided that they comply with the tolerance of the supply voltage.

CAPACITY AND CENTRAL UNIT

It is possible to connect to the central unit CU3-01M/02M or miniCU CU3-07/08/09/10M independent BUSes by means of terminals BUS1+, BUS1- or 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. When connecting units which draw greater than 1A, BPS3-01M with 3A sampling can be used. 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 (for CU3-01M/02M), which generate further BUSes. These are connected to the CU3-01M/02M unit via the system BUS EBM and you can connect a total of 8 units via EBM BUS to the central unit MI3-02M.

SUPPLYING THE SYSTEM

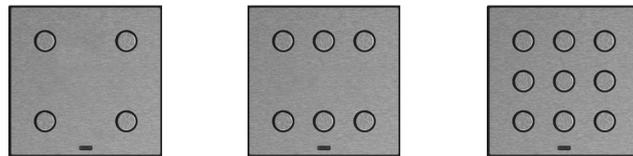
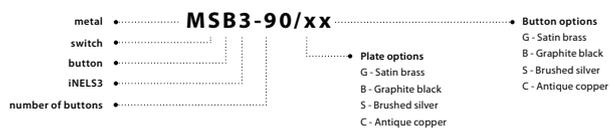
For supplying power to system units, it is recommended to use the power source of ELKO EP titled PSM3-30/iNELS, PSM3-60/iNELS, PSM3-100/iNELS or PS3-100/iNELS. We recommend backing up the system with backup batteries.

GENERAL INFORMATION

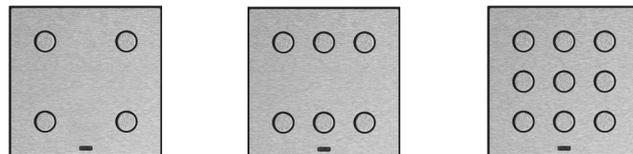
To operate the unit, it is necessary that the unit is connected to a central unit CU3 series, connected to the central unit of the system CU3, or to a system that already contains this unit as its expansion to include further system. All unit parameters are set through the central unit CU3-0XM in the software iDM3. There is LED diode on the PCB 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-.

	MSB3-40	MSB3-60	MSB3-90
Inputs			
Temperature measuring:	YES, built-in temperature sensor		
Scope and accuracy of temp. measurement:	0 to +55 °C; 0.3 °C from the range		
Humidity measurement:	YES		
Humidity measurement range:	0 to 99 % RH		
Inputs:	AIN/DIN		
External temperature sensor:	YES, the connection between AIN1/DIN1 and AIN2/DIN2		
Resolution:	by setting 10-bit		
Ext. input connection:	max.30m line		
Type of external sensor:	TC/TZ		
Temperature measurement range:	-20 °C to +120 °C		
Temperature measurement accuracy:	0.5 °C from the range		
Buttons			
Number of control buttons:	4	6	9
Type:	push button		
Indication:	round illumination around the button		
Outputs			
Acoustic output:	piezo-changer		
Communication			
Installation BUS:	BUS		
Power supply			
Supply voltage/tolerance:	27 V DC, -20/+10 %		
Dissipated power:	max. 0.5 W		
Rated current:	20-38 mA	20-45 mA	20-50 mA
	(at 27 V DC), from BUS		
Connection			
Terminals:	EIB ø 0.6 - 0.8 mm ²		
Operating conditions			
Relative humidity:	max. 80 %		
Operating temperature:	-20 to +55 °C		
Storing temperature:	-30 to +70 °C		
Protection degree:	IP20		
Overvoltage category:	II.		
Pollution degree:	2		
Operation position:	any		
Installation:	on the wall, observing the conditions for correct installation of the sensor		
Dimensions and weight			
Dimensions:	94 x 94 x 40 mm		
Weight:	154 g		

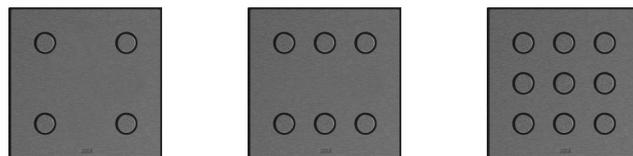
Terminology



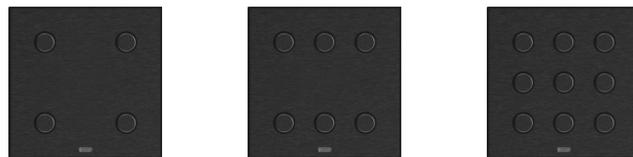
MSB3- XX/SS = Brushed silver plate + Brushed silver button



MSB3- XX/GG = Satin brass plate + Satin Brass button



MSB3- XX/CC = Antique copper plate + Antique copper button



MSB3- XX/BB = Graphite black plate + Graphite black button

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.