

Universal Module (230 V) to monitor up to 6 non-motorized fire dampers (end limit switches). 6 digital inputs and 2 digital outputs. It is the perfect solution for bus (Modbus and BACnet) integration into a superior system.

 **ATTENTION: 230 V POWER SUPPLY**



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Technical Data

Electrical Data	Nominal Voltage	230 V AC
	Nominal Voltage Range	-20%... + 20%
	Dimensioning	2 VA
	Power Consumption	2 W
	Connections	6 quick connections (terminals) for digital inputs. 2 quick connections (terminals) for digital outputs

Communication / Modbus



Protocol	Modbus RTU
Medium	RS-485, not electrically isolated
Transmission Formats	Specified by Modbus RTU Standards
Number of Devices per Line	100 (without repeater)
Baud Rates	9'600, 19'200 bps
Address	1..127 (0 reserved for broadcast)
Termination	120Ω line termination. Jumper available on extra pin on PCB. Position of jumper if FSC-UFC230-NM-6 is last Modbus device in line, see electrical installation, page 7
Typical Response Time	<200 ms

	Integration / Modbus Register	We refer to the detailed Modbus register of the FSC-UFC230-NM-6. Available under www.smtec-ag.ch/en/products
	Communication / BACnet Protocol Medium Number of Devices per Line Baud Rates	BACnet MS/TP RS-485, not electrically isolated 65 (without repeater) 9'600, 19'200, 38'400, 76'800 bps (auto detect)
	Address	1..127 (0 reserved for broadcast)
	Termination	120Ω line termination. Jumper available on extra pin on PCB. Position of jumper if FSC-UFC230-NM-6 is last BACnet device in line, see electrical installation, page 7
	Typical Response Time	<100 ms
	Device Instant	Automatically assigned by physical address, writable
	Integration / BACnet Objects, Pics	We refer to the detailed BACnet objects, pics of the FSC-UFC230-NM-6. Available under www.smtec-ag.ch/en/products
Safety	Protection Class	II
	Protection Degree	IP42, housing of non-flammable polycarbonate
	Electromagnetic Tolerance	CE in accordance with 2004/108/EC
	Low Voltage Directive	CE in accordance with 2006/95/EC
	Mode of Operation	Type 1 (EN 60730-1)
	Rated Impulse Voltage	2.5 kV (EN 60730-1)
	Degree of Pollution of Environment	2 (EN 60730-1)
	Ambient Temperature	-20° C to + 50 °C
	Storage Temperature	-20° C to + 80 °C
	Humidity Test	95% RH, non-condensing (EN 60730-1)
	Maintenance	Maintenance free
Mechanical Data (Dimensions / Weight)	Width	120 mm
	Length	153 mm
	Height	57 mm (with bracket)
	Weight	ca. 466 g (with bracket)
	<i>See drawings page 5</i>	

Installation The FSC-UFC230-NM-6 is directly installed at or close to the non-motorized fire damper. The bracket can be pre-installed. The FSC-UFC230-NM-6 can be snapped onto the bracket any time (at the damper manufacturer or at the job site).

Electrical Installation See details page 7.

Safety Notes The FSC-UFC230-NM-6 is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
The company buying and / or mounting the FSC-UFC230-NM-6 on site bears full responsibility for the proper functioning of the whole system. Only authorized specialists may carry out the installation. All applicable legal or institutional installation regulations must be complied with during installation.
The device contains electrical and electronic components and is not allowed to be disposed of as domestic refuse. All locally valid regulations and requirements must be observed.

Product Features / Application The FSC-UFC230-NM-6 is used to monitor up to 6 non-motorized fire dampers and to activate up to 2 outputs (e.g. alarm signals, fire doors). It provides Modbus or BACnet connection, is available in an easy to install housing and mounted at or close to the dampers. With the FSC-UFC230-NM-6 the wiring of each end limit switch to the cabinet is no longer necessary!
The control modes Modbus or BACnet can be chosen through the dip switch terminal. For more details see page 7.

Universal System Link between non-motorized fire dampers and any Modbus or BACnet system. Automatic recognition of the FSC-UFC230-NM-6 in combination with the FSC-M30, FSC-M240, FSC-M240-MX controllers.

Power Supply The FSC-UFC230-NM-6 needs to be powered up with 230 V AC. Up to 6 end limit switches (inputs) and 2 relays (outputs) can be controlled. For more details see page 8.

Communication **Serial Communication – RS-485**
Through Modbus RTU (RS-485) or BACnet MS/TP (RS-485).
We refer to the detailed information in the Modbus register / BACnet object list / pics of the FSC-UFC230-NM-6. Available under www.smtec-ag.ch/en/products.

Additional Connections **Inputs**
2-pole terminals for 6 digital inputs (DI).

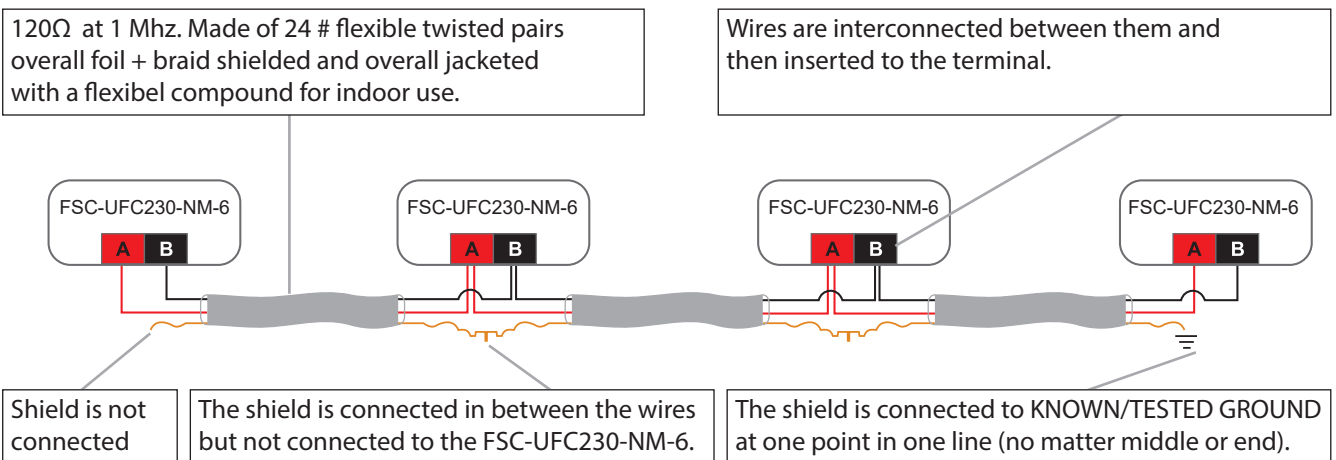
Outputs
2-pole terminals for 2 digital outputs, relays (DO).
Connection for 2 digital outputs, relays (DO). For the direct integration into a superior system. Not in combination with the FSC-M30, FSC-M240, FSC-M240-MX controllers.

Cable Specification



120 Ω with 1 Mhz. Made of 24# flexible twisted pairs overall foil + braidshielded and overall jacketed with a flexible compound for indoor use, or similar. Cable type: Belden 3105a or equivalent.

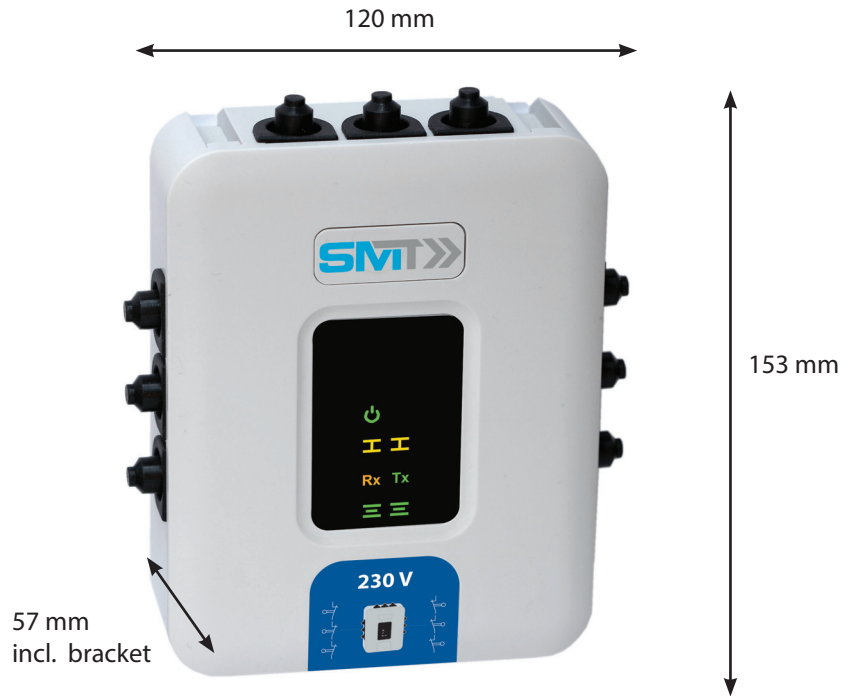
IMPORTANT: SMT takes no responsibility of the functionality of the units / network if a different cable is used to the one specified here.



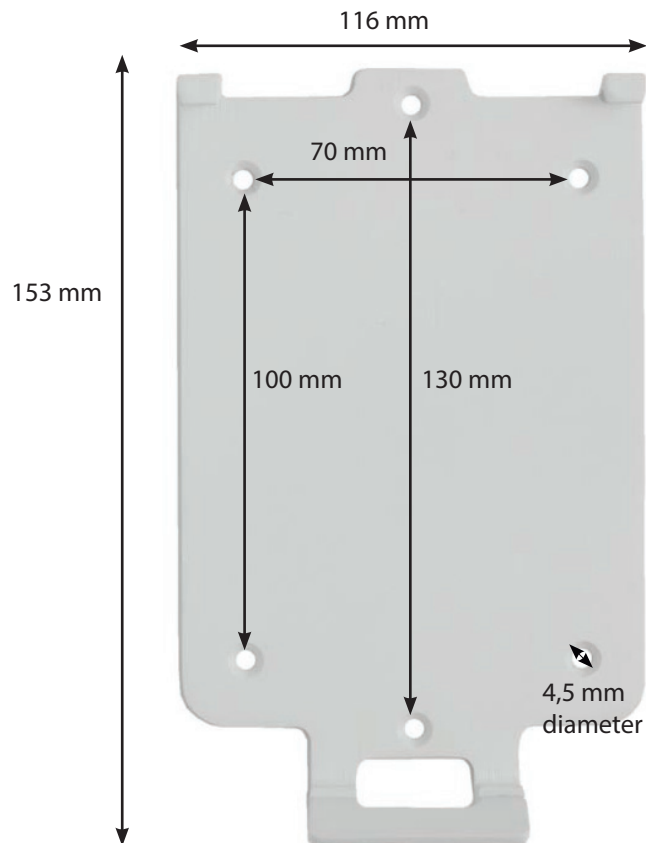
← Up to 1'200 meters and max. 100 FSC-UFC230-NM-6 with Modbus RTU and 65 FSC-UFC230-NM-6 with BACnet MS/TP →

Dimensions

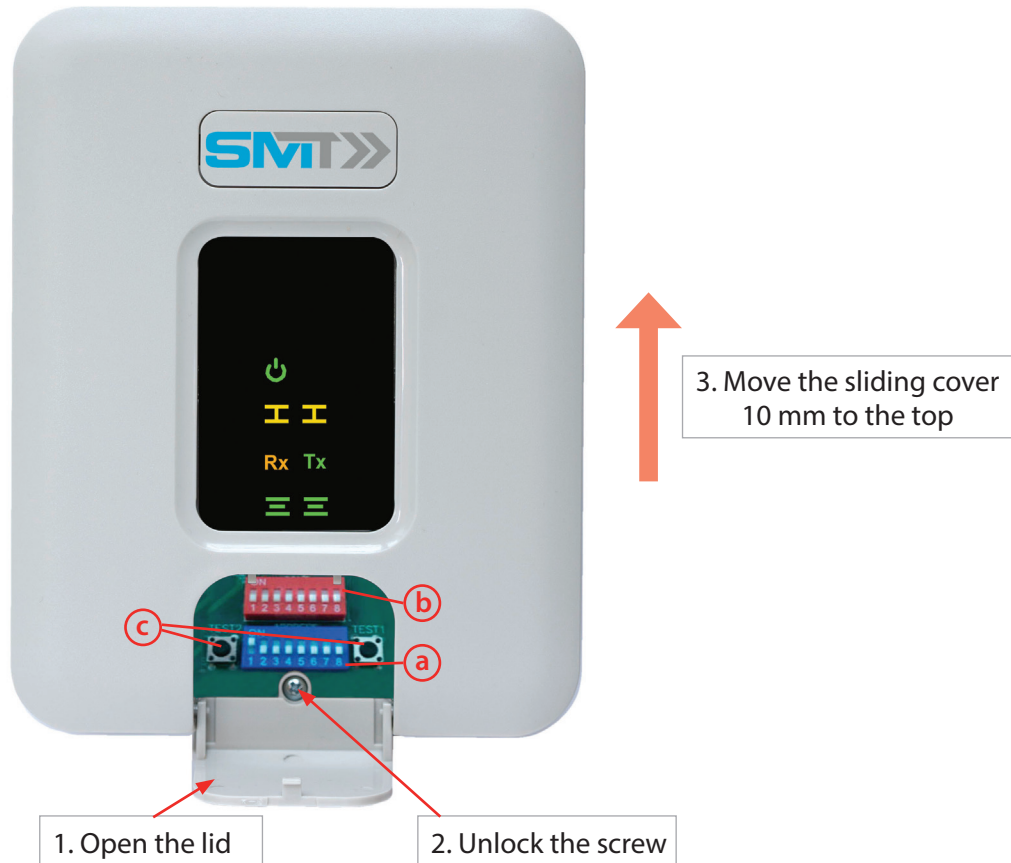
FSC-UFC230-NM-6



Mounting Bracket



Removing the Cover of the Housing



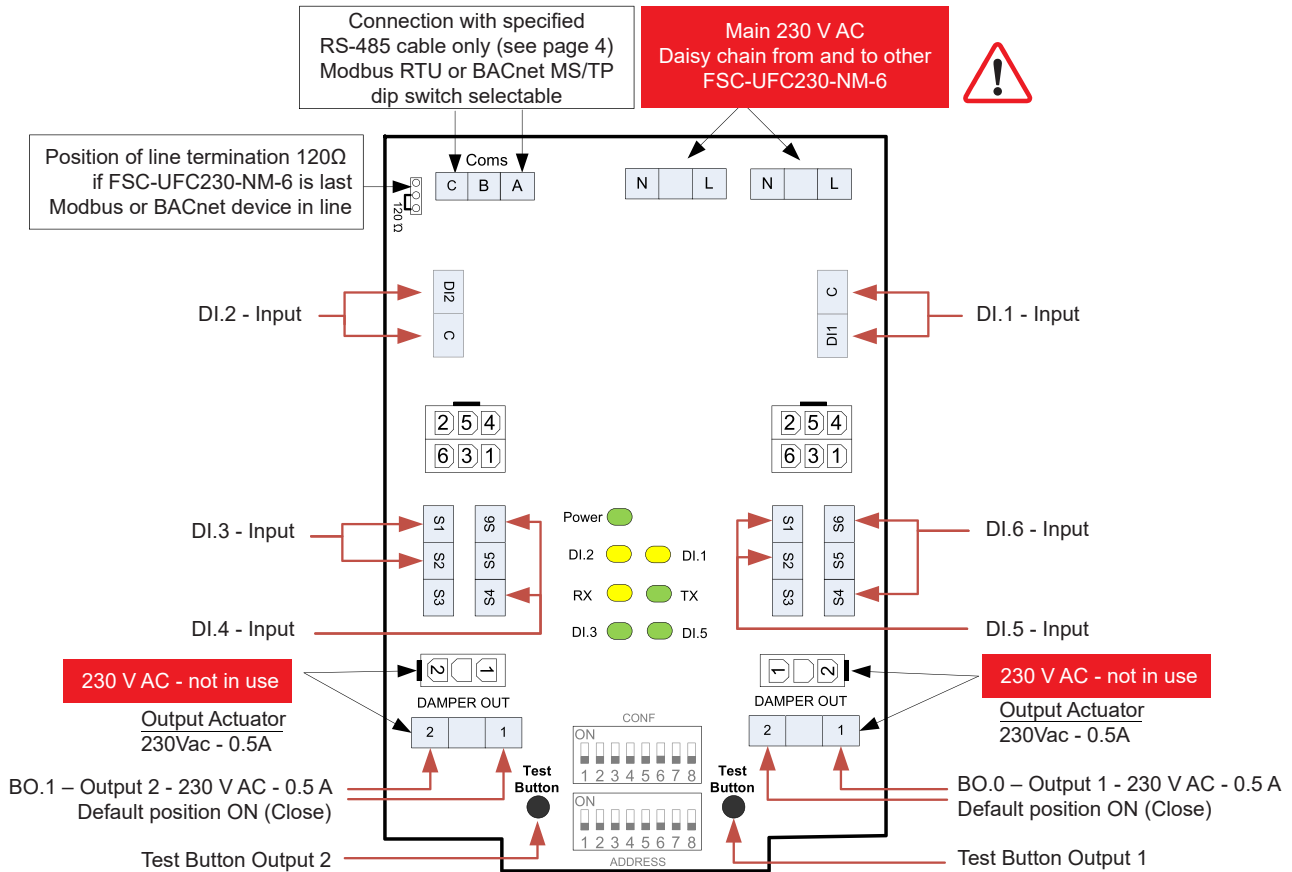
1. Open the small lid on the lower end of the housing by flapping up the cover
2. Unlock the screw which is placed on the lower end in the middle
3. Move the sliding cover 10 mm to the top
4. Remove the cover

Lid for Easy Access to Dip Switch Terminals (Configuration / Addressing) and Test Button

- (a)** The blue coloured dip switch terminal is for the Modbus or BACnet addressing.
- (b)** The red one for the configuration.
- (c)** Test buttons: For detailed explanation of the function of the test button see page 12.

Electrical Installation

General Information



Default position of all inputs is Normally Open (NO). They can be changed to Normally Closed (NC) via software.

Outputs

Connection for 2 digital outputs, relays (DO). For the direct integration into a superior system. Not in combination with the FSC-M30, FSC-M240, FSC-M240-MX controllers.

Power Supply

Main Power - FSC-UFC230-NM-6

The Power supply of the FSC-UFC230-NM-6 is 230V AC.

The actuator has to be 230V AC. There are 2 terminals for the power, in order to make the daisy chain connection for the installer easier.

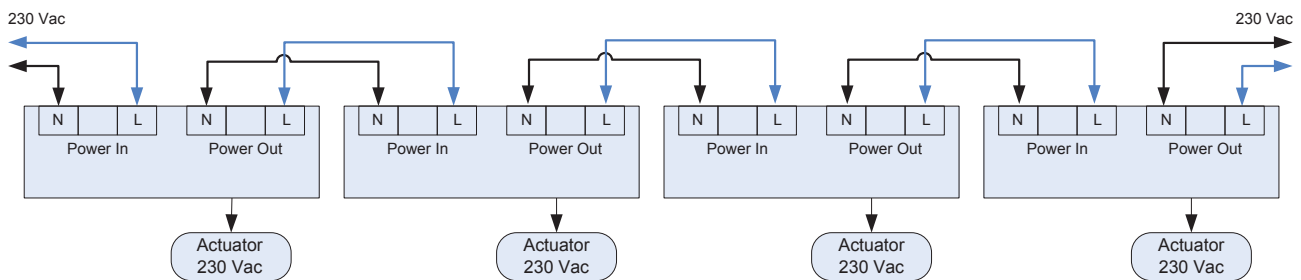


The polarity, phase to phase and com to com, must be respected when connecting to the power supply network and also when connecting multiple FSC-UFC230-NM-6!

IMPORTANT:



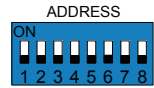
- **The correct wiring is very important in regards to the 230 V power supply! The polarity, phase to phase and com to com, must be respected when connecting to the power supply network and also when connecting multiple FSC-UFC230-NM-6!**
- The wiring of the actuator must be done in the correct way and according to the manufacturer's instructions. Especially when using actuators without plugs it is important to have a close focus on the polarity of the cable connection that means, to consider the correct allocation of phase and com!
- **All connections have to be fixed before putting power to the devices. Beside the risk of electrical shock, it is also possible to destroy the FSC-UFC230-NM-6 when not proper handled.**



Modbus and BACnet Addressing

Integration of the FSC-UFC230-NM-6 in any Modbus oder BACnet controller.

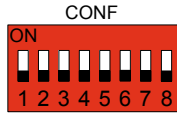
If the FSC-UFC230-NM-6 is used in combination with the FSC-M30, FSC-M240, FSC-M240-MX, the addressing is recommended to be done in consecutive order. Dip switch 8 not in use.



Address	Switches On	Address	Switches On	Address	Switches On	Address	Switches On
0	Broadcast-not in use	33	1+6	66	2+7	99	1+2+6+7
1	1	34	2+6	67	1+2+7	100	3+6+7
2	2	35	1+2+6	68	3+7	101	1+3+6+7
3	1+2	36	3+6	69	1+3+7	102	2+3+6+7
4	3	37	1+3+6	70	2+3+7	103	1+2+3+6+7
5	1+3	38	2+3+6	71	1+2+3+7	104	4+6+7
6	2+3	39	1+2+3+6	72	4+7	105	1+4+6+7
7	1+2+3	40	4+6	73	1+4+7	106	2+4+6+7
8	4	41	1+4+6	74	2+4+7	107	1+2+4+6+7
9	1+4	42	2+4+6	75	1+2+4+7	108	3+4+6+7
10	2+4	43	1+2+4+6	76	3+4+7	109	1+3+4+6+7
11	1+2+4	44	3+4+6	77	1+3+4+7	110	2+3+4+6+7
12	3+4	45	1+3+4+6	78	2+3+4+7	111	1+2+3+4+6+7
13	1+3+4	46	2+3+4+6	79	1+2+3+4+7	112	5+6+7
14	2+3+4	47	1+2+3+4+6	80	5+7	113	1+5+6+7
15	1+2+3+4	48	5+6	81	1+5+7	114	2+5+6+7
16	5	49	1+5+6	82	2+5+7	115	1+2+5+6+7
17	1+5	50	2+5+6	83	1+2+5+7	116	3+5+6+7
18	2+5	51	1+2+5+6	84	3+5+7	117	1+3+5+6+7
19	1+2+5	52	3+5+6	85	1+3+5+7	118	2+3+5+6+7
20	3+5	53	1+3+5+6	86	2+3+5+7	119	1+2+3+5+6+7
21	1+3+5	54	2+3+5+6	87	1+2+3+5+7	120	4+5+6+7
22	2+3+5	55	1+2+3+5+6	88	4+5+7	121	1+4+5+6+7
23	1+2+3+5	56	4+5+6	89	1+4+5+7	122	2+4+5+6+7
24	4+5	57	1+4+5+6	90	2+4+5+7	123	1+2+4+5+6+7
25	1+4+5	58	2+4+5+6	91	1+2+4+5+7	124	3+4+5+6+7
26	2+4+5	59	1+2+4+5+6	92	3+4+5+7	125	1+3+4+5+6+7
27	1+2+4+5	60	3+4+5+6	93	1+3+4+5+7	126	2+3+4+5+6+7
28	3+4+5	61	1+3+4+5+6	94	2+3+4+5+7	127	Reserved factory defaults
29	1+3+4+5	62	2+3+4+5+6	95	1+2+3+4+5+7		
30	2+3+4+5	63	1+2+3+4+5+6	96	6+7		
31	1+2+3+4+5	64	7	97	1+6+7		
32	6	65	1+7	98	2+6+7		

Configuration through Dip Switch

Default Dip Switch Position



Configuration Possibilities

Pin	Off (Default)	On
1	No function	No function
2	No function	No function
3	Modbus RTU	BACnet MS/TP
4	Baud Rate (Off-Default)	
5	Parity (Modbus only)	None Parity (Modbus only)
6	Not In Use=Off	
7	Not In Use=Off	
8	Not In Use=Off	

Information Pin 3:

If the FSC-UFC230-NM-6 is used in connection with the Controllers of SMT (FSC-M30, FSC-M240, FSC-M240-MX), Pin 3 has to be on ON (BACnet).

Baud Rate Selection Modbus

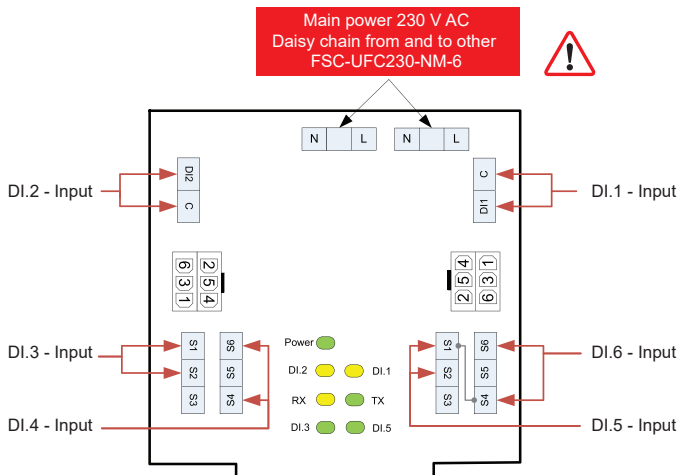
This has to be done when choosing Modbus only.
Single writing!

	9600 (Default)	19200
4	Off	On

Baud Rate Selection BACnet

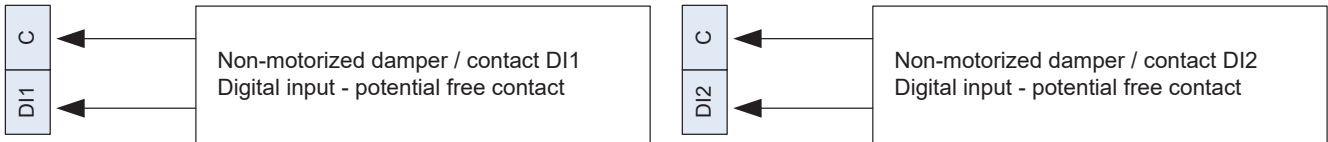
Baud rate in BACnet is automatically detected.
Single writing!

Inputs

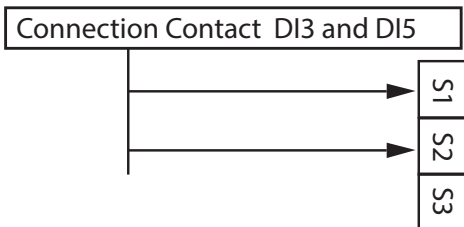


Default position of all inputs is Normally Open (NO). They can be changed to Normally Closed (NC) via software.

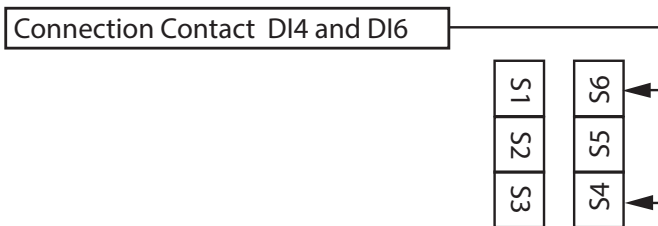
Connection Contact DI1 and DI2, Potential Free Contact



Connection Contact DI3 and DI5

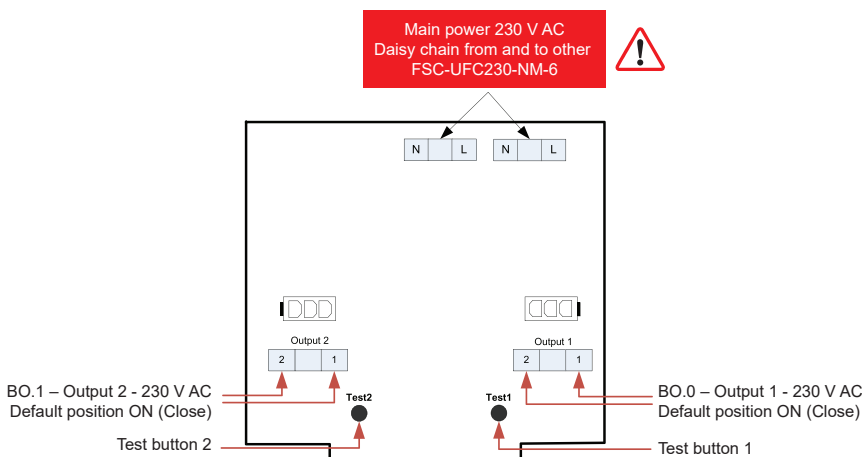


Connection Contact DI4 and DI6



Outputs

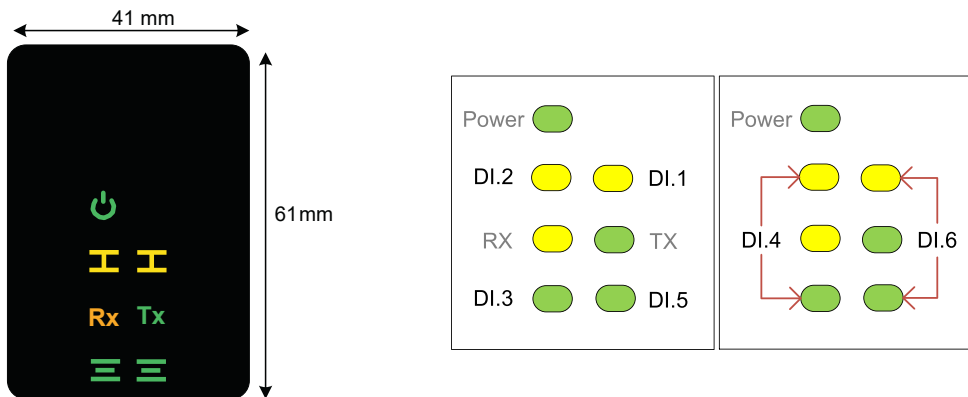
Connection for 2 digital outputs, relays (DO). For the direct integration into a superior system. Not in combination with the FSC-M30, FSC-M240, FSC-M240-MX controllers.



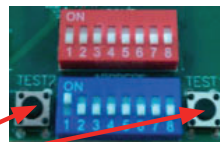
Default: Relais "ON" = Output closed. Output: 230 V AC - 0.5 A

Explanation of LEDs

The LEDs are only visible if they are active. If not active the symbols will not appear.



DI.1, DI.2; DI.3; DI.5	When contact (input) is closed, the corresponding LED is ON
DI.4	When contact (input) is closed, both LEDs DI.2 and DI.3 are ON
DI.6	When contact (input) is closed, both LEDs DI.1 and DI.5 are ON
If more than 1 contact is triggered on the left side	Both LEDs DI.2 and DI.3 are blinking in parallel
If more than 1 contact is triggered on the right side	Both LEDs DI.1 and DI.5 are blinking in parallel



Functionality of Test Buttons

If a FSC-UFC230-NM-6 is connected to a bus network for the first time:

Press the test button for 5 sec.

After that the FSC-UFC230-NM-6 will be recognized as participant in the bus network and integrated. This process can be repeated as often as necessary.