

Panels for pipe freeze protection and temperature maintenance and for connection to Building Management System (BMS)

DESCRIPTION



The nVent RAYCHEM SBS control panel range provides a complete solution for nVent RAYCHEM self-regulating heating cables for pipe freeze protection and temperature maintenance. It offers control with a pipe line sensor and / or a PASC (Proportional Ambient Sensing Control) option.

The models in this series control up to 12 heating circuits. To ensure safe operation, the control panel is equipped with circuit breakers (C-type) and 30mA residual current protection for safe operation. The pre-installed Elexant 450c control unit can operate 2 zones with different parameters independently of one another. The Elexant 450c is also allowing flexible Modbus connectivity for remote monitoring, configuration, and ease of integration in a Building Management System (BMS).

The control panel is pre-wired and only needs to be connected to a main power supply (400 VAC, 3P/N/PE).

ADVANTAGES

- Fast connection of multiple heating circuits directly to the control panel
- No additional connections or junction boxes required
- Connection of 3–12 heating circuits to a single control panel
- Circuit over-current and RCD protection integrated directly into the control panel
- No separate safety devices required
- Complete system directly from the manufacturer
- The system and components have been selected for optimal use as a pipe freeze protection and temperature maintenance system.
- Collective error / alarm
- The panel is equipped with a RS485 port for Modbus communication to a BMS system which can be used for configuration, monitoring and alarm purposes.

TECHNICAL DATA

Control setting	Each Elexant 450c controller can control up to 2 separate groups of 3 circuits with independent parameters and control mode. The pre-installed Elexant 450c-Modbus electronic control with max. 2 sensors makes 2 zone control possible: – Ambient temperature-dependent control in the PASC operation mode and / or – Control with pipe line sensor
Voltage Operation panel	400 VAC 3P/N/PE
Voltage Heating circuit	230 VAC
Sensor	NTC-Type is used as ambient temperature sensor (PASC) and/or pipe line sensor
Approvals	CE (approval according to IEC 61439)
Main switch	According to selected model (32–100 A)
RCD	30 mA
Circuit breaker	16A, C-type, per heating circuit
Alarm feature	1 potential free alarm contact in panel; 1 alarm light in the door
Operation mode switch	Auto/Manual Auto = Control in function (standard mode) Manual = all heating circuits switched on (uncontrolled operation)

COMMUNICATION (ELEXANT 450C-MODBUS)

Communication port	RS-485
Type	2-wire RS-485
Cable	One shielded twisted pair (not included)
Length	1,200 m (4,000 ft.) maximum
Quantity	Up to 247 devices per port
Data rate	2400, 4800, 9600, 19200 baud
Parity	None, even, odd
Stop bits	1, 2
Protocol	Modbus RTU

RELATED PRODUCTS

The control panel SBS-FP-xx-16A-MODBUS can be operated with the following nVent RAYCHEM freeze protection heating cables:

10XL2-ZH – 204 meter per heating circuit

15XL2-ZH – 153 meter per heating circuit

26XL2-ZH – 116 meter per heating circuit

31XL2-ZH – 91 meter per heating circuit

FS-C10-2X – 150 meter per heating circuit

(Startup temperature of +5°C minimum. For heating circuits with longer lengths or lower startup temperatures, please contact nVent)

INSTALLATION

The panel is supplied with complete circuit and connection diagrams. A qualified electrician must carry out all work on electrical systems in compliance with the applicable regulations and standards.

TECHNICAL DATA PANEL

Color	Textured paint, RAL 7035, light-grey
Enclosure	Sheet steel wall-mounted enclosure; IP65 (For indoor installation)
Installation location	Exposure temperatures +10°C to +35°C
Power supply	3-phase 400 VAC with N and PE
Heating cable	230 VAC with N and PE : 3 terminals per heating circuit for max. 10 mm ²

Panel type			SBS-FP-3x16A -MODBUS	SBS-FP-6x16A -MODBUS	SBS-FP-9x16A -MODBUS	SBS-FP-12x16A -MODBUS
Max. quantity of heating circuits			3	6	9	12
Quantity of contactors			2	2	3	4
Max. quantity of controllers Elexant 450c			1	1	2	2
Max. power output		kW	11	22	33	44
Circuit breaker on-site		max. A	3 pole x 25A	3 pole x 32A	3 pole x 63A	3 pole x 80A
Enclosure mounting			Wall-mounted	Wall-mounted	Wall-mounted	Wall-mounted
Dimension	Width	mm	600	600	800	800
	Height	mm	600	600	800	800
	Depth	mm	210	210	210	210
Weight	Approx.	kg	32	32	54	56

REFERENCE DATA

Product name	Item number	Product description
SBS-FP-3x16A-MODBUS	1244-022628	Control panel for max. 3 heating circuits (Including 1 controller Elexant 450c with Modbus connectivity)
SBS-FP-6x16A-MODBUS	1244-022629	Control panel for max. 6 heating circuits (Including 1 controller Elexant 450c with Modbus connectivity)
SBS-FP-9x16A-MODBUS	1244-022630	Control panel for max. 9 heating circuits (Including 1 controller Elexant 450c with Modbus connectivity)
SBS-FP-12x16A-MODBUS	1244-022631	Control panel for max. 12 heating circuits (Including 1 controller Elexant 450c with Modbus connectivity)
SBS-FP-MONT-ELEXANT-450c	1244-022471	Optional additional electronic controller Elexant 450c for SBS-FP-9x16A-MODBUS or SBS-FP-12x16A-MODBUS, with installation in the control panel; can operate 2-heating zones independently (Controller must be ordered separately)
SENSOR-NTC-10M	1244-015847	Additional sensor for 2nd heating zone (to be ordered separately)
GM-TA-AS	1244-017965	Ambient sensor in plastic enclosure, NTC type

Note: customized panels can be ordered, please contact nVent.

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