SBS-SMDI-E650c

Panels for Roof and Gutter De-Icing and Surface Snow Melting 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 roof and gutter de-icing and surface snow melting.

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 30 mA residual current protection for safe operation. The pre-installed Elexant 650c-Modbus control unit can operate 2 zones with different parameters independently of one another. The Elexant 650c-Modbus 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). Sensors are to be ordered separately.

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 roof and gutter de-icing and surface snow melting
- 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 650c-Modbus controller can control up to 2 separate groups of 3 circuits with independent parameters and control mode.
Panel supply voltage	400 VAC 3P/N/PE
Heater circuit supply voltage	230 VAC
Sensor	Moisture and temperature gutter and ground snow sensors (ordered separately)
Approvals	CE (IEC61439-2), UKCA
Main switch	According to selected model (32–100 A)
RCD	30 mA
Line circuit breakers	According to selected model, C-type, per heating circuit
Panel material	Coated metal
IP rating	IP65
Ambient temperatures	+10°C to +35°C
Colour	RAL 7035 (Light Grey)

Installation location	Indoor
Alarm function	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 (ELEXANT650C-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-SMDI-E650c can be operated with the following nVent RAYCHEM roof and gutter de-icing and surface snow melting heating cables:

EM2-XR Self-regulating heater cable (90 W/m @ 0°C)

IceStop GM-2X (T)

WINTERGARD Cable & Mat

FroStop Black

Customized versions of the SBS-SMDI-E650c panels can be also operated with the GM2-CW and EM2-MI cables.

TECHNICAL DATA PANEL

Panel type			SBS-SMDI-E650c-3xXXA	SBS-SMDI-E650c-6xXXA	SBS-SMDI-E650c-9xXXA	SBS-SMDI-E650c-12xXXA
Max. quantity of heating circuits			3	6	9	12
Quantity of contactors			2	2	3	4
Max. quantity of Elexant 650c-Modbus controllers			1	1	2	2
Max. power output		kW	28	43	75	86
Circuit breaker on-site		max. A	3 pole x 40 A	3 pole x 80 A	3 pole x 100 A	3 pole x 132 A
Enclosure mounting			Wall-mounted	Wall-mounted	Wall-mounted	Wall-mounted
Dimension	Width	mm	400	600	600 (SBS-SMDI-E650c-9x32A - 800)	800
	Height	mm	600	600	600 (SBS-SMDI-E650c-9x32A - 800)	800
	Depth	mm	210	210	210	210
Weight	Approx.	kg	32	32	54	56

REFERENCE DATA

Product name	Item number	Product description	EAN numbers
SBS-SMDI-E650C-3X16A	2000003965	Control panel for max. 3 heating circuits, 16 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025040
SBS-SMDI-E650C-6X16A	2000003966	Control panel for max. 6 heating circuits, 16 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025057
SBS-SMDI-E650C-9X16A	2000003967	Control panel for max. 9 heating circuits, 16 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025064
SBS-SMDI-E650C-12X16A	2000003968	Control panel for max. 12 heating circuits, 16 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025071
SBS-SMDI-E650C-3X32A	2000003961	Control panel for max. 3 heating circuits, 32 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025088
SBS-SMDI-E650C-6X32A	2000003962	Control panel for max. 6 heating circuits, 32 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025095
SBS-SMDI-E650C-9X32A	2000003963	Control panel for max. 9 heating circuits, 32 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025101
SBS-SMDI-E650C-12X32A	2000003964	Control panel for max. 12 heating circuits, 32 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025118
SBS-SMDI-E650C-3X20A	2000003969	Control panel for max. 3 heating circuits, 20 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025125
SBS-SMDI-E650C-6X20A	2000003970	Control panel for max. 6 heating circuits, 20 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025132
SBS-SMDI-E650C-9X20A	2000003971	Control panel for max. 9 heating circuits, 20 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025149
SBS-SMDI-E650C-12X20A	2000003972	Control panel for max. 12 heating circuits, 20 A (including 1 controller Elexant 650c-Modbus with Modbus connectivity)	5414506025156
SBS-MONT-ELEXANT-650C	2000004520	Optional additional electronic controller Elexant 650c-Modbus for SBS-SMDI-E650c-9XXXA or SBS-SMDI-E650c-12XXXA, with installation in the control panel; can operate 2–heating zones independently (This item must be ordered separately)	5414506025231
SENSOR-NTC-10M	1244-015847	Additional sensor without enclosure, 10 m, NTC type	5414506015119
GM-TA-AS	1244-017965	Ambient sensor in plastic enclosure, NTC type	5414506018387
E650C-G	1244-022794	Moisture and temperature sensor for surface snow melting, 20 m, with housing and protective cover	5414506024661
E650C-G-HOUSING	1244-022796	Spare housing and protective cover for surface snow melting sensor	5414506024685
E650C-R	1244-022795	Moisture and temperature sensor for roof and gutter de-icing, 6 m, with zinc mounting bracket	5414506024678
E650C-R-BRACKET-ZN	1244-022798	Spare mounting bracket for roof and gutter de-icing sensor, zinc	5414506024708
E650C-R-BRACKET-CU	1244-022799	Spare mounting bracket for roof and gutter de-icing sensor, copper	5414506024715
SM-TF130-DI	1244-022836	External module for the ice rain feature and panel alarm digital input	5414506025019
GM-SEAL-02	1244-012310	Adhesive for roof and gutter brackets, polyurethane glue, 300 ml bottle	5414506014440

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

MOST COMMON POSSIBLE ADDITIONAL OPTIONS

- Installation outdoors
- Installation of a heater
- Rain sheet cover
- Lightning protection

INSTALLATION INSTRUCTION

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.

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