

Elexant 650c-Modbus

CONNECT AND PROTECT

Electronic Controller for Roof & Gutter De-Icing and Surface Snow Melting Systems

PRODUCT OVERVIEW



The nVent RAYCHEM Elexant 650c-Modbus controller is designed for operation with nVent RAYCHEM ramp, roof and gutter heating cables.

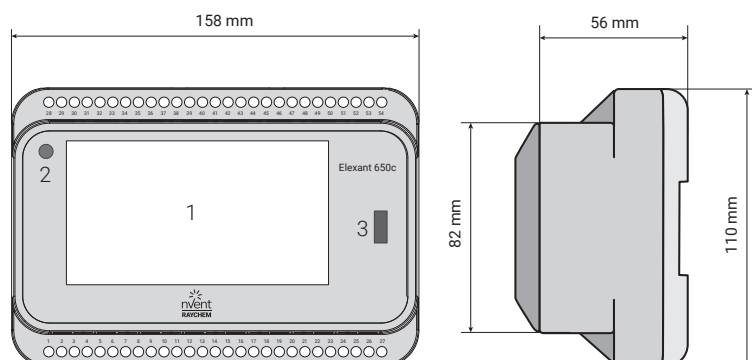
The Modbus connectivity allows for remote monitoring, configuration, and ease of integration in a Building Management System (BMS).

Features

- Intuitive set-up and programming of the unit with a 4.3" colour touch screen
- Moisture and temperature control of roof & gutter de-icing and surface snow melting systems
- Controls 2 independent heating areas
- Temperature with moisture sensing for enhanced energy savings
- Alarm relay with change over contact to signal power, sensor or communication problems (Modbus)
- Ambient temperature monitoring with high and low temperature alarm
- Offsite configurable – can be set up prior to final installation
- DIN rail panel mountable
- The Elexant 650c-Modbus is equipped with a RS485 port for Modbus communication to a BMS system which can be used for configuration, monitoring and alarm purposes
- Ice rain feature – preheating the surface to prevent the issue of freezing rain (for surface snow melting application only)

PRODUCT SPECIFICATIONS

Typical enclosure dimensions and module layout



1. Touch screen, size 4.3"
2. LED: Flashes green in operation mode
3. USB Port

Enclosure

Dimensions	158 mm x 110 mm x 56 mm
Ingress protection class	IP20
Material	PPE
Mounting option	DIN-Rail mountable 35 mm, in panel
Storage temperature	–20°C to +50°C
Flammability class	D category (DIN EN60730/VDE0631-1)

Technical details

Supply voltage	230 VAC –15/+10%; 50/60 Hz
Power consumption	Max. 25 VA
Output relay / contactor / heating cable	2 x 4 A / 230 VAC
Power supply terminals	3 x 1.5 mm ²
Heating cables contactor terminals	2 x 2 x 1.5 mm ²
Alarm terminals	3 x 1.5 mm ²
Sensor terminals	2 x 2 x 1.5 mm ²
Modbus terminals	3 x 1.5 mm ²
Alarm relay	Single pole double throw relay, voltage – free, rating 2 A/250 VAC
Real time clock	Automatic summer/winter time and leap year correction
Clock back up	3 years
Clock accuracy	Typ. +/-10 minutes per year
Keylock	Password protection for parameter settings
USB Port	For preset-up in power off mode and firmware upgrade
Settings	All settings are stored in non-volatile memory, except date and time
Exposure temperature in operation	0°C to +40°C

Sensor

	Roofs and gutters	Surfaces	With SM-TF130-DI Module	
	E650C-R *	E650C-G *	GM-TA-AS *	NTC-SENSOR-10M *
Temperature sensor type	NTC	NTC	NTC 2 KOhm / 25°C, 2 wire	NTC 2 KOhm / 25°C, 2 wire
Sensor cable length	6 m	20 m	Sensor in a box (no cable attached)	10 m
Temperature range	–30°C to +30°C (for moisture measurement)	–30°C to +30°C (for moisture measurement)	–30°C to +40°C	–40°C to +90°C

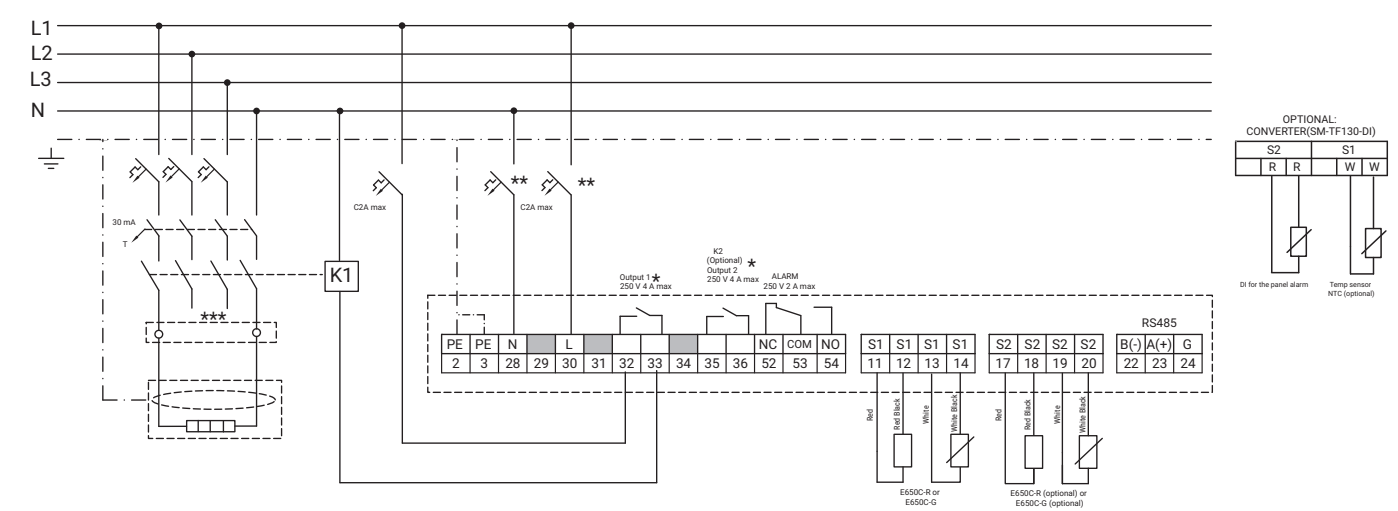
*Not included in the box

Monitoring

Snow sensing threshold min. and max. temperature	Adjustable range 0°C to +5°C Adjustable range –30°C to –5°C or OFF
Sensor alarm	Sensor open circuit Sensor short circuit
Parameter input	Each parameter input and event will be logged in non-volatile memory

Electrical scheme

Standard: Moisture sensors



Communication

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

APPROVALS

For use in non-hazardous areas

Product certification	  
Electromagnetic Compatibility (EMC)	EN 61000-6-3, EN 61000-6-2

ORDERING INFORMATION

Catalog description	ELEXANT 650c-Modbus
Part number	1244-022835
EAN code	5414506025002
Weight	550 g
In package	1 control unit with manual / no sensors included

Accessories

Product name	Product description	PCN number	EAN number
E650C-G	Moisture and temperature sensor for surface snow melting, 20 m with housing and protective cover	1244-022794	5414506024661
E650C-G-HOUSING	Spare housing and protective cover for surface snow melting sensor	1244-022796	5414506024685
E650C-R	Moisture and temperature sensor for roof and gutter de-icing, 6 m with zinc mounting bracket	1244-022795	5414506024678
E650C-R-BRACKET-ZN	Spare mounting bracket for roof and gutter de-icing sensor, zinc	1244-022798	5414506024708
E650C-R-BRACKET-CU	Spare mounting bracket for roof and gutter de-icing sensor, copper	1244-022799	5414506024715
SM-TF130-DI	External module for the ice rain feature and panel alarm digital input	1244-022836	5414506025019
GM-TA-AS	Spare ambient NTC sensor in enclosure	1244-017965	5414506018387
SENSOR-NTC-10M	Spare ambient NTC sensor – 10 m	1244-015847	5414506015119
nVent RAYCHEM PB-POWERBANK	Powerbank for pre-configuration of Elexant 650c-Modbus without mains voltage	1244-020365	5414506020458

Important: The nVent RAYCHEM Elexant 650c-Modbus controller is for use with the nVent RAYCHEM heating cables only. The warranty and system listing will be invalidated if the Elexant 650c-Modbus controller is used with other heating cables.

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