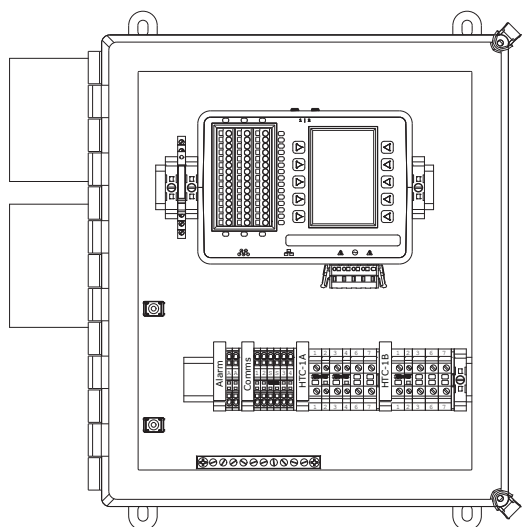


Dual-Circuit Heat-Tracing Controller

PRODUCT OVERVIEW



Elexant 7300i-E4FWL-1ST1-SS3102-A shown

The Raychem Elexant 7300i is Chemelex's next-generation dual-circuit controller for electric heat tracing control and monitoring. The Elexant 7300i builds upon Raychem 920 functionality but with a modern and intuitive graphical local user interface. Available in two variants – the ST1 (single-phase) and ST3 (three-phase).

Control

The Elexant 7300i supports two independent heat-tracing circuits per controller. Each circuit supports On/Off (deadband), Proportional, Always On, Always Off, PASC, & Proportional Ambient control modes with up to two directly connected Pt100 RTD temperature sensors per circuit.

Monitoring

A variety of parameters are measured, including current (up to 63 A), line voltage (up to 690 Vac), and ground fault (up to 250 mA) to ensure system integrity. The system can be set to periodically check the heating cable for faults, alerting maintenance personnel of a heat-tracing problem. A dry contact relay is provided for alarm annunciation back to a distributed control system (DCS). Comprehensive maintenance data is stored in non-volatile memory.

Ground-Fault Protection

National electrical codes require ground-fault equipment protection on all heat-tracing circuits. The Elexant 7300i incorporates UL1053-compliant ground-fault protection with separate alarm and trip functions, and configurable thresholds across the 10-250 mA range. Heat-tracing circuits equipped with Elexant 7300i controllers do not require additional ground-fault detection equipment, simplifying installation and reducing costs.

Installation

The standard Elexant 7300i unit comes ready to install right from the box, eliminating the need for custom panel design or field assembly.

The TYPE 4X-rated FRP enclosures are approved for use in indoor and outdoor locations. Wiring is as simple as connecting the incoming and outgoing power wiring (up to 690 Vac) and an RTD.

User Interface

The intuitive, graphical local user interface provides clear per-circuit status, control temperature, setpoint, output state, and active alarms at a glance. No specialized tools are required for commissioning, configuration, or troubleshooting. Settings are stored in non-volatile memory. The user-interface is also multilingual (English & French supported).

Communications

The controller includes one RS-485 port supporting Modbus RTU and features a Raychem 920 Modbus emulation mode for easy system upgrades. Raychem Elexant 7300i units may be networked to Modbus compatible devices such as a DCS, PLC, or a host PC running Windows-based Raychem Supervisor software for central programming, status review, and alarm annunciation. When in Raychem 920 Modbus emulation mode, the Elexant 7300i will appear as a Raychem 920 controller to upstream devices.

GENERAL

Area of use	Nonhazardous and Division 2 hazardous locations
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APPROVALS

Product certification

cULus

Class I, Division 2, Group A, B, C, D T3

Class I, Zone 2, AEx ec IIC T3 Gc

Ex ec IIC T3 Gc

IECEX (PENDING)

IECEX UL 26.0018X

Ex ec IIC T3 Gc

UL 26 ATEX 3522X

 II 3 G Ex ec IIC T3 Gc

More details about product certification, approvals, and conditions of safe use, are available in the Installation Manual at www.chemelex.com/raychem

SUPPLY VOLTAGE

Electrical Data

Power	100-277Vac +/- 10% 50/60Hz
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Enclosure

Protection	Type 4X / IP65
Materials	Fiberglass reinforced plastic

Ambient Operating Temperature	-40°C to +55°C
Ambient Storage Temperature	-60°C to +70°C
Relative Humidity	5% to 90%, non-condensing

Environmental

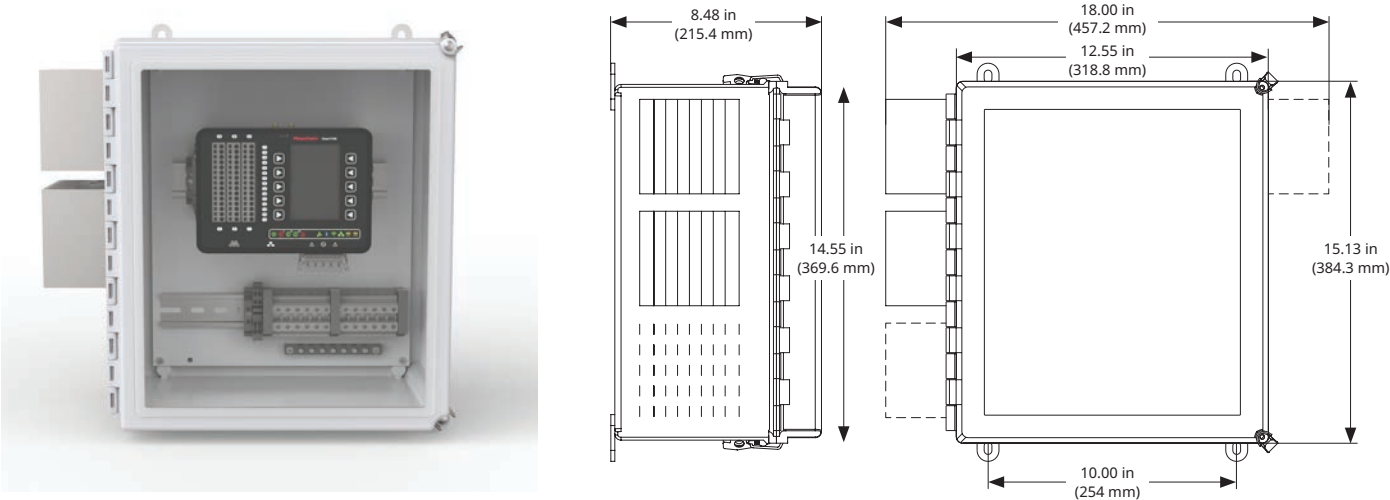
Compliance	EN/IEC 61326-1, Class B IEC 62443 (cybersecurity, product requirement level) - pending RoHS, WEEE, REACH, TSCA, Prop 65
Max Altitude	2,000 m (6,562 ft)

Control

Control Algorithms	On/Off (deadband), Proportional, Always On, Always Off, Proportional Ambient
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PRODUCT SPECIFICATIONS

Dimensions (2-circuit 1-pole SSR 920 equivalent)



Elexant 7300i-E4FWL-1ST1-SS3102-A (1 pole model shown)
Elexant 7300i-E4FWL-1ST1-SS3202-A (2 pole model) shown with dashed lines.

Monitoring (Each Control Point)

Temperature	Low and High alarm range -200°C to 700°C (-328°F to 1292°F)
Ground Fault	Alarm range 20-250 mA per circuit. Configurable threshold, independently enable/disable, latching configurable. Trip range 20-250mA per circuit. Configurable threshold, independently enable/disable, UL1053 compliant.
Heater Current	Low & High alarm range 0.3A to 100A per circuit
Voltage	Low & High alarm range 10 to 330Vac 50/60Hz
Autocycle	Periodic and on-demand autocycle for circuit integrity verification. Diagnostic test interval adjustable from 1 to 45000 minutes or 1-750 hours.

Temperature Sensor Inputs

Quantity	4 total (2 per circuit, 2 circuits)
Sensor Input Type	100 Ω platinum RTD — 3-wire, α = 0.00385 ohms/ohm/°C Multisensor logic: average, lowest, primary/failover per circuit

Alarm Outputs

Dry Contact Relay	250 Vac/dc, 6 A maximum, 48 VA maximum resistive switching
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Configuration

Method	3.5" diagonal graphical LCD
Units	°C or °F
Status LEDs	Module Status, Circuit 1 Status, Circuit 2 Status, Bluetooth Status, RS-485 Status
Memory	Non-volatile Settings retained through power loss Stored maintenance data: energy, max power, max ground fault, current, voltage, temperature min/max, hours in use, hours running, heater on time, contactor count
Alarm Conditions	High/low temperature, high/low current, ground fault alarm, ground fault trip, RTD failure, high limit cutout, loss of programmed values, output failure
Equipment Protection	Ground fault trip High limit cutout with configurable setpoint Output limiting (SSR): power, current, duty-cycle Autocycle for circuit integrity verification

Connection Terminals

Power Supply Input & Heating Cable Output	Screw terminal, 20 to 6 AWG
Ground	14 -4 AWG ground bar
RTD / Alarm / Communications	Cage Clamp, 22 to 6 AWG

Communications

RS-485 / Protocol	Isolated 2-wire RS-485, Modbus RTU
Maximum Quantity Devices	Up to 247 devices per port
Protocol	Modbus RTU
Parity	None, even, odd
Stop Bits	1, 2
Bluetooth	Bluetooth Low Energy (BLE) 5.1 Encrypted connection. Password protected device configuration. Secure local interaction and firmware updates Bluetooth can be disabled via configuration when not required.

ORDERING INFORMATION

Name	Description	Part Number	Weight lbs [kg]
Elexant 7300i-E4FWL-1ST1-SS3102-A	Elexant 7300i controller – 2 Pt. In 14"x12"x8" FWL enclosure 1P 30A 277V SSR/pt. Fiberglass enclosure with window and quick-release latches, Elexant 7300i module. Controls two circuits, each with a 1 pole switch.	2000007009	27
Elexant 7300i-E4FWL-1ST1-SS3202-A	Elexant 7300i controller – 2 Pt. In 14"x12"x8" FWL enclosure 2P 30A 277V SSR/pt. Fiberglass enclosure with window and quick-release latches, Elexant 7300i module. Controls two circuits, each with a 2 pole switch.	2000007010	31
Elexant 7300i-E8FWL-2ST1-SS3104-A	Elexant 7300i controller - 4 Pt. In 18"x16"x8" FWL enclosure 1P 30A 277V SSR/pt. Fiberglass enclosure with window and quick release latches, two Elexant 7300i modules. Controls four circuits, each with a 1 pole switch.	2000007011	38
Elexant 7300i-E10FWQ1-3ST1-SS3108-A	Elexant 7300i controller - 8 Pt. In 30"x24"x12" FWL enclosure 1P 30A 277V SSR/pt. Fiberglass enclosure with window and quarter turn latch, three Elexant 7300i modules. Controls eight circuits, each with a 1 pole switch.	2000007012	147
Elexant 7300i-ST1	1 Phase Elexant 7300i-ST1 Module	2000006771	3
Elexant 7300i-ST3	3 Phase Elexant 7300i-ST3 Module	2000006772	3

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