

MAIN HOME SCREEN
(Shows set point temperatures and heating cable on/off)

- This system is in screen lock
- The set point is 40F
- The heating cable is not on
- Sensor 1 is at 53F
- Sensor 2 is at 52F



SYSTEM STATUS SCREEN
(Settings, electrical and temperature information)

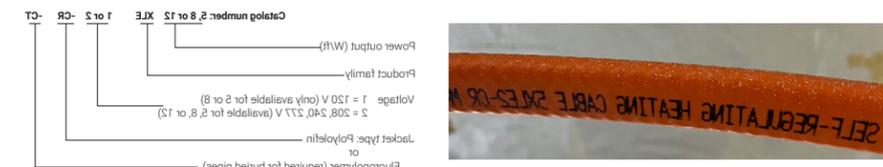
Load current (the heating cable is of so the is 0mA)

EQUIPMENT CHECK

If you get a message "Is an external contactor being used?" your heating cable is NOT connected. Check the wiring between the controller and the heating cable power connection kit. Go here for more information
<https://www.youtube.com/watch?v=kYHuGvbacG0&t=38s>
<https://cdcommercialservices.com/resources>

VOLTAGE

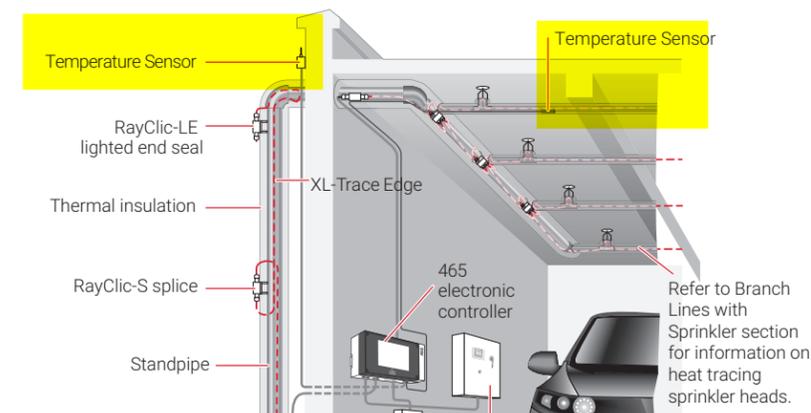
Be sure to check the design voltage and match this to the heating cable on site". The model number is listed at one meter intervals on the heating cable.



See XLTrace for Fire Installation and Design Guide here:
https://cdn.chemelx.com/Product%20Documents/Design%20Guides-Forms/RA_YCHEM-DG-H58489-XLTraceEdgeFS-EN.pdf

TEMPERATURE SENSORS

NFPA and the Design Guide says that an electric heating cable system protecting fire protection pipe should have (1) ambient temperature sensor and (1) low pipe temperature. Be sure which temperature sensor is which. Assigning the wrong one could lead to freezing.



CONTROL MODE

NFPA says that heating cable systems controlling fire protection pipes should be switched on and off based on ambient temperature.



TITLE: Raychem 465 Start up		
SCALE: NONE	DATE: 2/16/26	REV: A

465 Controller Startup

Selections choices by Application / Number of Sensors

Controller Startup Steps	Selection Action	SINGLE SENSOR			TWO SENSORS		
		Applications→ Ambient FP	Pipe sense FP	Pipe sense Grease	Ambient FP	Pipe sense FP Including Fire Protection	Pipe sense Grease
START UP SCREEN							
ENGLISH / FRENCH	ENGLISH	ENGLISH	ENGLISH	ENGLISH	ENGLISH	ENGLISH	ENGLISH
METRIC / IMPERIAL	IMPERIAL	IMPERIAL	IMPERIAL	IMPERIAL	IMPERIAL	IMPERIAL	IMPERIAL
EQUIPMENT CHECK							
HEATING CABLE OK?	If no test heating cable at power connection						
SENSOR 1	If no check connection						
SENSOR 2	If no check connection						
CANADA / UNITED STATES	UNITED STATES	UNITED STATES	UNITED STATES	UNITED STATES	UNITED STATES	UNITED STATES	UNITED STATES
DATE	Enter current date	DATE	DATE	DATE	DATE	DATE	DATE
24/12 HOUR TIME	12 HOUR	13 HOUR	14 HOUR	15 HOUR	13 HOUR	14 HOUR	15 HOUR
TIME	Enter current time	TIME	TIME	TIME	TIME	TIME	TIME
VOLTAGE	Select voltage based on design. Confirm heating cable and supply voltage match the design	VOLTAGE	VOLTAGE	VOLTAGE	VOLTAGE	VOLTAGE	VOLTAGE
HEATING CABLE MODEL	Select designed/installed heating cable (not that cables will be grayed out based on voltage selected above)	HEATING CABLE MODEL	HEATING CABLE MODEL	HEATING CABLE MODEL	HEATING CABLE MODEL	HEATING CABLE MODEL	HEATING CABLE MODEL
TEMPERATURE SENSORS							
TS1	Select type based on design.	Select Ambient	Select pipe Sense	Select pipe Sense	Select Ambient	Select pipe Sense	Select pipe Sense
TS2	Select type based on design.	select no boxes	select no boxes	select no boxes	Select line sensing	Select line sensing	Select line sensing
CONTROL MODE	Select type based on design.	Ambient on/off	Line	Line	Ambient on/off	Ambient on/off	Ambient on/off
EDIT PARAMETERS	This screen allows you to adjust parameters based on application			Change set point to 110, change low temp to 55			Change set point to 110, change low temp to 55

Confirm that the controller supply voltage matches the design.
 Confirm that the heating cable has been tested and passed all tests before starting controller.



TITLE: 465 Selections by Application		
SCALE: NONE	DATE: 2/16/26	REV: A

XL-Trace Edge is designed to maintain fire supply lines at 40°F (4°C) in areas subject to freezing.

Aboveground Supply Piping

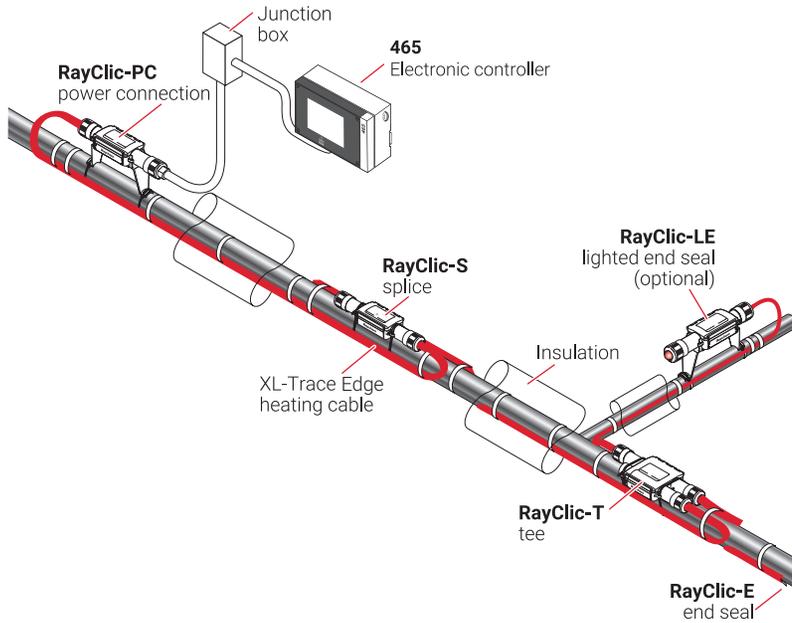


Fig. 4 Typical aboveground supply piping system

Application Requirements

The system complies with nVent requirements for aboveground general water piping when:

- The heating cable is permanently secured to insulated metal pipes with GT-66 glass tape or to plastic pipes using AT-180 aluminum tape.
- 465, C910-485, or ACS-30 controllers with integrated ground fault protection and alarm contacts are used and are connected to a fire control panel.
- The heating cable is installed per manufacturer's instructions with approved nVent RAYCHEM connection kits. See Table 11 on page 25 and the XL-Trace Edge System Installation and Operation Manual (H58033).

From Raychem sprinkler design guide page 6 which can be found here: <https://cdn.chemex.com/Product%20Documents/Design%20Guides-Forms/RAYCHEM-DG-H58489-XLTraceEdgeFS-EN.pdf>

You can find the 465 installation manual here: <https://cdn.chemex.com/Product%20Documents/Installation%20Manuals/RAYCHEM-IM-H60742-465Controller-ML.pdf>

2.6 Supervisory relay connections

The 465 controller includes terminals for one supervisory relay as shown in figure 2.5. It can support both AC and DC power source (please refer to the max voltage and current specifications for the relay above). It may be wired for normally open (N.O.) or normally closed (N.C.) operation.

The contractor shall connect the supervisory indicator to NO, COM to have the relay signal a supervisory condition when it's open. In normal operation the NO contact is closed. In case of power loss or supervisory condition the NO contact is open.

The contractor shall connect the supervisory indicator to NC, COM to have the relay signal a supervisory condition when it's closed. In normal operation the NC contact is open. In case of power loss or supervisory condition the NC contact is closed.

The supervisory relay is used to provide supervisory signal to a fire alarm system for any of the following conditions:

- Ground fault current
- Low system temperature
- High system temperature
- Temperature sensor failure
- Internal error
- Loss of continuity
- Loss of incoming supply voltage

Note: The supervisory relay is intended to be used for switching low-voltage, low-current signals. Do not use this relay to directly switch line voltages.



Provide one sensor in the cold space for control and one on the pipe, under the insulation opposite the heating cable, for low temperature alarm.

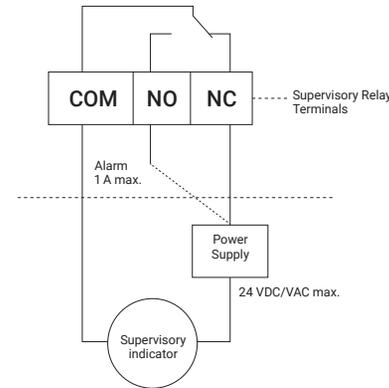


Figure 2.5 Supervisory relay wiring

Connect the alarm contacts to the fire supervisory system



TITLE: 465 Wiring for Fire Protection Lines		
SCALE NONE	DATE 2/15/26	REV. B