

SES — “Smart End Seal” for power line-based control and monitoring systems

The SES series of transmitters comes in two types: temperature/continuity transmitter (SES-RTD) and continuity transmitter (SES-CONT). These transmitters are used in freeze protection and process temperature maintenance applications. The system is unique in that the heating cable bus wires and power cables carry the monitoring signals. No additional field wire is necessary.

The SES-RTD transmitter (typically placed at the end of a heater circuit) replaces conventional RTD sensing elements and associated wiring, sending temperature and continuity information to the central microprocessor-based controller. The

SES-CONT provides heater continuity only. The SES is designed for use only with Raychem® brand BTV, QTVR, XTV, and VPL parallel heating cables.

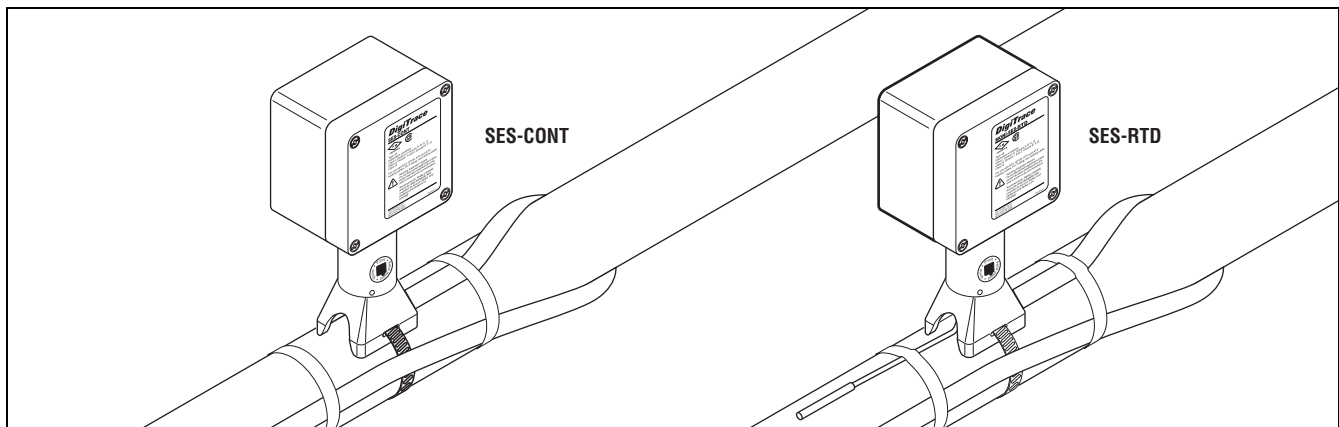
The SES requires a programmable controller (200N), a power line carrier interface (PLI), and an optional power-switching contactor panel. Up to 127 strategically placed SES transmitters communicate with one PLI (one PLI per heat-tracing transformer). A total of four PLIs can be connected.

Systems Requirement

The SES system requires a dedicated heat-tracing transformer (only the heat-tracing

can be connected to the transformer) and MoniTrace® 700-FEF front end filter to provide electrical noise isolation between the plant environment and the heat-tracing power in network environment. This ensures that transmission between the PLI and the SES transmitters is reliable and error-free.

Note: The PLI technology is noise sensitive. Installing this in close proximity to high power/noise sources such as variable frequency drives, will interfere with the PLI operation.



Specifications

Function	SES-CONT: Digital continuity transmitter SES-RTD: Digital temperature and continuity transmitter
Address	Switch selectable with three rotary switches, 127 addresses, 1–127
Cables supported	BTV, QTVR, XTV, VPL
Operating voltage	SES-CONT-1, SES-RTD-1 90–132 Vac SES-CONT-2, SES-RTD-2 185–304 Vac
Ambient operating range	–40°F to 140°F (–40°C to 60°C)
Enclosure rating	NEMA 4X
Storage temperature range	–40°F to 167°F (–40°C to 75°C)
Temperature measurement range	–60°F to 420°F (–51°C to 215°C)
Temperature accuracy	± 3°F (± 2% of actual, ±3°F minimum)
Relative humidity	5% to 90%, noncondensing

Approvals

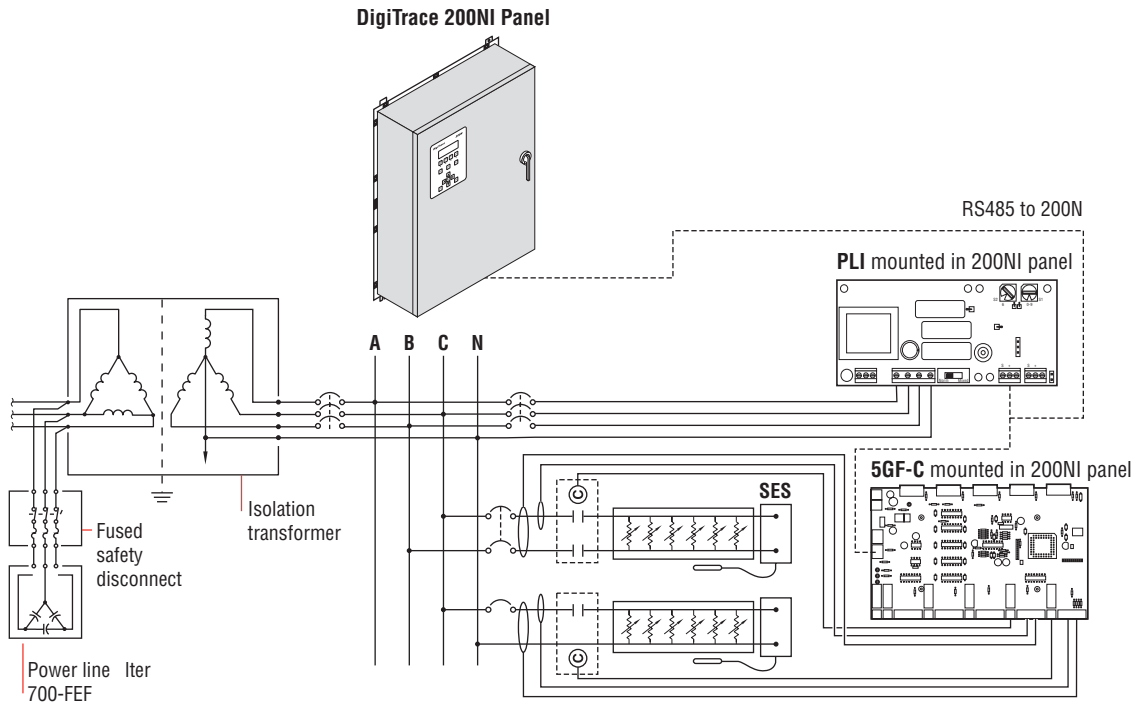
Hazardous Locations



Class I, Div. 2, Groups A, B, C, D
 Class II, Div. 1 and 2, Groups E, F, G
 Class III

Line-Sensing Control and Monitoring

Individual control with 5GF-C, PLI, and SES for ground-fault trip/monitoring and temperature/heater current monitoring



Ordering Details

Description	Catalog number	Part number	Weight (lbs)
120 V temperature/continuity transmitter with enclosure	SES-RTD-1	265212	3.2
208-277 V temperature/continuity transmitter with enclosure	SES-RTD-2	677596	3.2
120 V continuity transmitter with enclosure	SES-CONT-1	293536	3.0
208-277 V continuity transmitter with enclosure	SES-CONT-2	398720	3.0
Spare parts			
120 V replacement transmitter board	SES-TT-1	815918	0.8
208-277 V replacement transmitter board	SES-TT-2	771274	0.8
Replacement RTD and stand assembly	SES-RTD-Replace	693618	0.8