



LDE-LME 1/16 DIN Temperature Controllers

TECHNICAL SPECIFICATION

Case:	ABS grey color (RAL 7043);
Self-extinguishing degree:	V-0 according to UL 749C. Front protection: designed and tested for IP65* and NEMA 4X* for indoor locations (panel gasket installed). *Tests performed in accordance with CEI 70-1 and NEMA 250-1991 STD.
Installation:	panel mounting by means of mounting bracket. Instrument removable from case. Rear terminal block:
Rear terminal block:	15 screw terminals (M3 screw, for cables from ϕ 0.25 to ϕ 2.5 mm ² or from AWG 22 to AWG 14) with connection diagrams and safety rear cover.
Dimensions:	48 x 48 mm, depth 105 mm (DIN 43700).
Weight:	250 g max.
Power supply:	<ul style="list-style-type: none"> • 100 Vac to 240 Vac 50/60Hz (-15% to +10% of the nominal value). • 24 Vac/Vdc (\pm10% of the nominal value). Power consumption: 6 VA max.
Insulating voltage:	2300 V RMS according to EN 61010-1.
Display update time:	500 ms.
Sampling time:	500 ms.
Common mode rejection ratio:	120 dB at 50/60 Hz.
Normal mode rejection ratio:	60 dB at 50/60 Hz.
Electromagnetic compatibility and safety requirements:	this instrument is marked CE and conforms to council directives 89/336/EEC (reference harmonized standard EN-50081-2 and EN-50082-2) and to council directives 73/23/EEC and 93/68/EEC (reference harmonized standard EN61010-1).
Installation category:	II.
Temperature drift:	< 200 ppm/°C of the F.S.V. (RJ excluded) < 400 ppm/°C for RTD or TC type T.
Operating temperature:	from 0 to 50 °C.
Storage temperature:	from -20 to +85°C.
Humidity:	from 20% to 85% RH, non-condensing.

Measuring Inputs

☑ Thermocouples

Burnout: open input circuit detection (wires or sensor) via overrange or underrange indication.

Cold junction: automatic compensation from 0 and 50°C ambient.

Cold junction compensation error: 0.1°C/°C.

☑ RTD

Type: PT100 3 wire connection.

Measuring current: 135 µA.

Line resistance: automatic compensation up to 20 Ω/wire with an error $< \pm 0.1\%$ of the input span for the range -19.9 to 99.9°C. (No measurable error for other ranges.)

Engineering units: programmable °C or °F.

EBurnout: detection of the sensor and of one or more wires open circuit. Shows short circuit when sensor resistance is lower than 15 Ω.

Logic Input

Type: Dry contact (no voltage)

Functions: - Setpoint select (SP1/SP2)
- Timer mode 1 - reset
- Timer mode 2 - start
- Timer mode 3 - start
- Timer mode 4 - start

Control Action

Algorithm: PID + SMART Tune.

Types: - one control output (heating)

- two control outputs (heating and cooling).

Output types: relay or SSR.

Output action: time proportional.

Proportional band: from 1.0% (heating) or 1.5% (heating and cooling) to 100% of the input span. If Pb=0 the control algorithm becomes ON/OFF.

Hysteresis: (in ON/OFF control): from 0.1% to 10.0% of the input span.

Integral time: from 1 second to 20 minutes.

Derivative time: from 0 to 10 minutes.

Integral preload: - for one control output, from 0 to 100% of the output range
- for two control outputs, from -100% to 100% of the output range.

Heating cycle: from 1 to 200 seconds.

Cooling cycle: from 1 to 200 seconds.

Relative cooling gain: from 0.20 to 1.00.

Overlap/deadband: from - 20% to 50%.

Outputs

☐Output 1

Output 1 - Relay

Relay type: SPDT.

Contact rating: 3A @ 250 Vac on resistive load.

Output 1 - SSR

Type: non-isolated.

- Logic level 1: 14 Vdc @ 20 mA max. 24 Vdc @ 1 mA.

- Logic level 0: < 0.5 Vdc.

☐Output 2

Type: relay

Contact type: SPST.

Contact rating: 2A @ 250 Vac on resistive load.

☐Output 3

Type: relay

Contact type: SPST.

Contact rating: 2A @ 250 Vac on resistive load.

Alarms

Action: direct or reverse.

Function: programmable as process, band or deviation alarm.

Reset: programmable as automatic or manual reset.

Masking: programmable as masked or standard alarm.

Hysteresis: from 0.1% to 10.0% of the input span.

☐Process alarm

Operating mode: "high" or "low."

Threshold: in engineering units within the input range.

☐Band alarm

Operating mode: inside or outside band.

Threshold: from 0 to 500 units.

☐Deviation alarm

Operating mode: "high" or "low."

Threshold: from -199 to +500 units.

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