

ANALOG THRESHOLD DETECTOR THRESHOLD RELAY

LOREME
DSL35

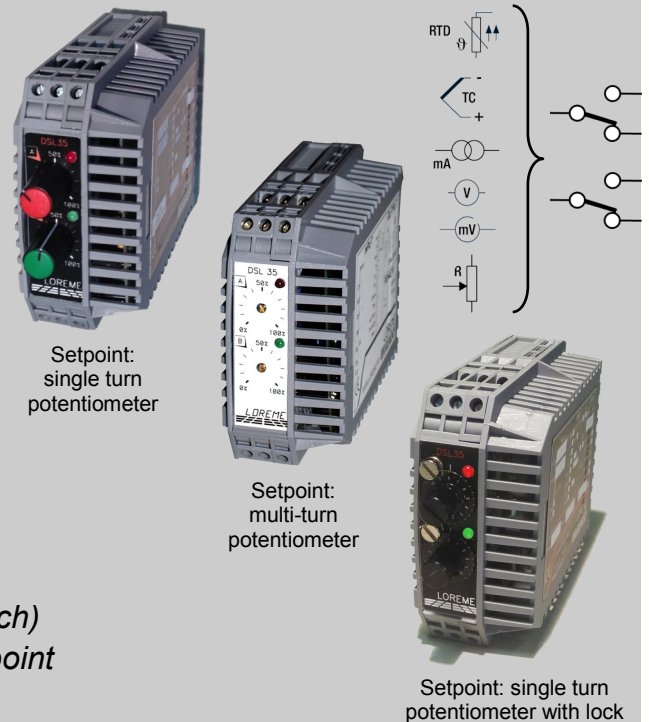
• All process and temperature inputs

Volt, mV, mA, Aac, Adc, RMS, TRMS
with or without sensor supply,
potentiometer, frequency,
thermocouple, PT100, CTN, CTP,
Namur proximity sensor (IEC 60497-5-6)
Capacitive divisor, strain gauge

• Special inputs

Sum, average, difference between 2 inputs
Max or min value selection between 2 inputs

- **DSL1-35:** 1 threshold / 1 relay (SPDT contact)
- **DSL2-35:** 2 thresholds / 2 relays (SPDT contact)
- Fast version < 3 ms ref: **DSL35T**
- Electromechanical relay or solid state output
- Positive or negative safety (selection with internal switch)
- Internal (potentiometer) or external (volt, mA, pot) setpoint
- AC or DC Power supply. from 5Vdc up to 400Vac.



The threshold relay DSL35 allows, for an input value coming from various types of sensors, to define one (DSL1/35) or two independent thresholds (DSL2/35). Its design for protection application or simple regulation.

Standard inputs:

(type and input range to be define)

- thermocouples, all type : B, E, J, K, R, S, T, ...
- linearized platinum probes sensor (Pt100, Pt1000, ...) 2, 3 or 4 wires,
- voltage (mV, V, Ac and Dc), RMS,
- Voltage with high impedance for capacitive divisor
- current (mA, A, Ac and Dc), RMS,
- resistance 2, 3 or 4 wires,
- 3-wires potentiometer (potentiometer reference 0.2, 1, 10 V),
- 4-wires strain gauge, commutable sensitivity, 5 V power supply,
- sensor power supply, 4/20 mA transmitter in loop powered mode,
- NTC, PTC input,...
- Proximity sensor NAMUR (IEC 60497-5-6)
- Current up to 3000 A with external Hall effect sensor.

Special inputs:

- sum of 2 non-isolated inputs (mA, V, Tc, Pt100 2 wires),
 - difference of 2 non-isolated inputs (mA, V, Tc, Pt100 2 wires),
 - average of 2 non-isolated inputs (mA, V, Tc, Pt100 2 wires),
 - selection of max or min value on 2 inputs (mV, V, mA),
 - any others on request.
- (the inputs are non isolated each other)

Features:

- Led for relay state indication (led on = excited coil).
- Triggering threshold adjustment (to be defined):
 - 1) Internal with potentiometer (standard)
 - manual adjustment on free button 3/4 turn (by default),
 - manual adjustment on button 3/4 turn with axis lock screw
 - screen driver adjustment on split button 10 turns.
 - 2) External by 0...10 V voltage or remote potentiometer.
- "standard" hysteresis 0.5 % of full scale (others on request).
- Configuration of each threshold in positive or negative safety (by internal switch on the printed circuit beside the relays).
- Symmetrical and asymmetrical DIN rail mounting.
- Connection with screw terminal bloc (section wires up to 2.5 mm²).
- Conformal coating
- Protection rating (enclosure/terminal) : IP20

Version and order code:

[Request a quote](#)

- **DSL1-35:** 1 threshold / 1 relay changeover contact
- **DSL1-35/2R:** 1 threshold / 2 relays changeover contact
- **DSL2-35:** 2 thresholds / 2 relays changeover contact
- **Option /Ts:** Fast version <3ms, 1 NO solid state relay (300Vac-dc 0.1A or 60Vdc 0.5A to define at order)
- **Option /Te:** Fast version <10ms, electromechanical relay, (changeover contact)
- **Option /cext:** External setpoint (0-10V or external potentiometer to define at order)
- **Option-c10 :** setpoint adjustment by screwdriver on split axe 10 turns
- **Option-cb :** setpoint adjustment by button 3/4 turn with lock

Special versions (available with 1 or 2 threshold) :

- DSL35-SVL:** Min or Max value selector between 2 inputs (selection type and input to be define at order)
- DSL35-DiF:** Difference between 2 inputs (signed difference or absolute value be define at order)
- DSL35-SOM:** Sum or average of 2 inputs

INPUT	
TYPE	RANGE
Voltage mV, V, (ac or dc)	5 mV ... 1000 V to be define
Impedance	> 1 MOhms
Current mA, A, ac, dc	10 μ A ... 5 A to be define
Input impedance: 50 Ohms (mA) / 0.25 Ohms (1 A) / 0.05 Ohms (5 A)	

Pt100, Pt1000 (2, 3 or 4 wires)	-200 °C / 800 °C
Thermocouple	30°C span mini
	- B, E, J, K, R, S, T, ...
cold junction compensation	100 °C span mini
	-20 to 60 °C

THRESHOLD	
Setting accuracy	+/- 1 % (pot. 3/4 turn)
	+/-0.2% (pot. 10 turns)
Tripping repeatability	0.1 %
Standard response time	< 250 ms typical (Tc, RTD)
Fast version response time	< 3 ms typical (mA, Volt)

RELAY	
free potential change over contact	2500 Vac isolation
AC switching power	6 A / 440 V / 1500 VA
Type of load	lifetime (nbr of operation)
5 A, 250 Vac, resistive	1x10 ⁵
2 A, 250 Vac, cos phi 0.4	2x10 ⁵
1 A, 24 Vdc, L / R=48 ms	2x10 ⁵
6 A, 250 Vac, resistive	7x10 ⁴
Min. load	100 mA, 12 Vac/dc
Input withstand voltage	6000 V (1.2 / 50us)

AUXILIARY	
Nominal sensor power supply	19 Vdc (smoothed), 22mA
Strain gauge power supply	5 Vdc (regulated), 20mA
Potentiometer reference (depending on potentiometer)	200 mV, 1 V, 10 V

POWER SUPPLY (to specified at order)

400 Vac 50-60 Hz +/- 10 %, 2.3 VA
230 Vac 50-60 Hz +/- 10 %, 2.3 VA
115 Vac 50-60 Hz +/- 10 %, 2.3 VA
20 to 70 Vac / Vdc, 2 VA
80 to 265 Vac / Vdc, 2 VA
5 - 18Vdc or 9 - 30 Vdc, 2 W
Reverse polarity protected

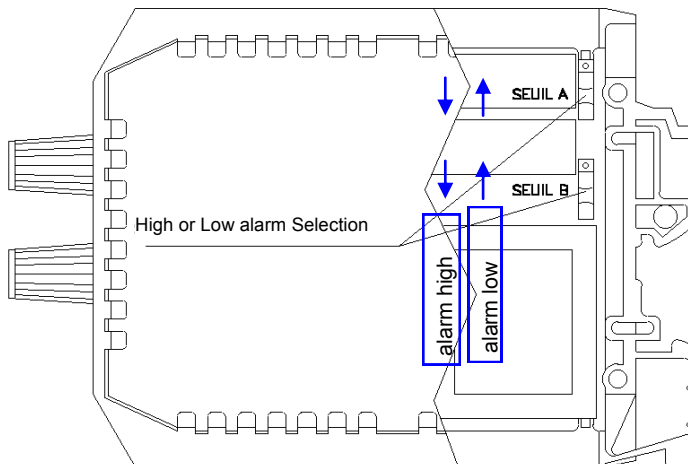
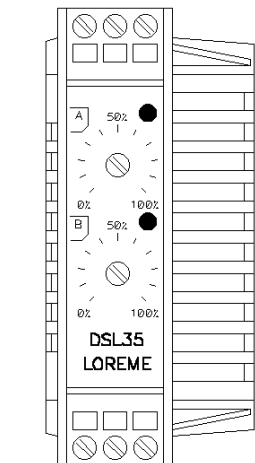
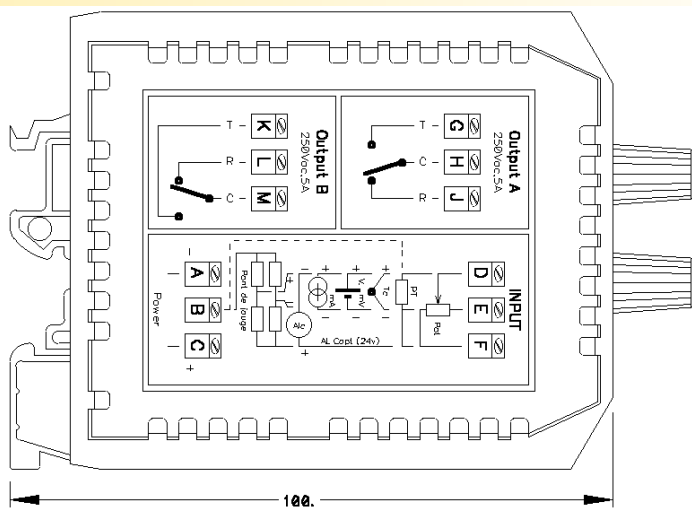
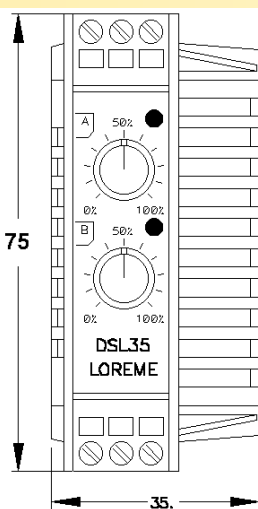
ENVIRONMENT

Operating Temperature	-25 to 60 °C
Storage Temperature	-40 to 85 °C
Influence	0.02 % / °C (% of full scale)
Humidity	85 % (not condensed)
Dielectric strength	1500 Vac continuous
Protection rating	IP20
Weight	210 g
MTBF (MIL HDBK 217F)	> 2 000 000 Hrs @ 25°C
Life time	> 150 000 Hrs @ 30°C

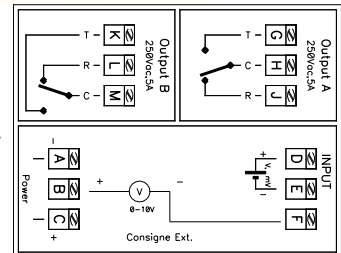
Shock CEI 60068-2-27 (operational)	15 G / 11 ms
Bump CEI 60068-2-29 (transportation)	40 G / 6 ms
Vibrations CEI 60068-2-6 (operational)	1 G / 10 - 150 Hz
Vibrations CEI 60068-2-6 (transportation)	2 G / 10 - 150 Hz

Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

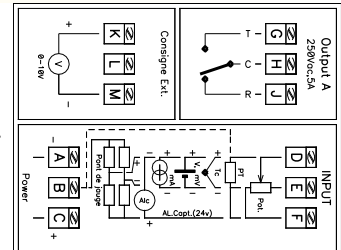
Immunity standard for industrial environments EN 61000-6-2		Emission standard for industrial environments EN 61000-6-4
EN 61000-4-2 ESD	EN 61000-4-8 AC MF	EN 55011
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	group 1 class A
EN 61000-4-4 EFT	EN 61000-4-11 AC dips	
EN 61000-4-5 CWG	EN 61000-4-12 ring wave	
EN 61000-4-6 RF	EN 61000-4-29 DC dips	

**WIRING AND OUTLINE DIMENSIONS:**

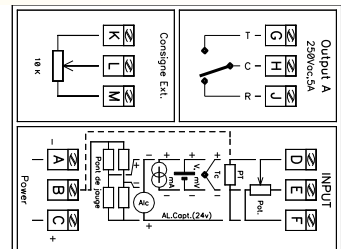
2 thresholds version with external setpoint 0..10V



1 threshold version with external setpoint 0..10V



1 threshold version with external potentiometer



2 current 4-20mA inputs version

