

UNIVERSAL ANALOG THRESHOLD DETECTOR THRESHOLD RELAY

DSL35

LOREME

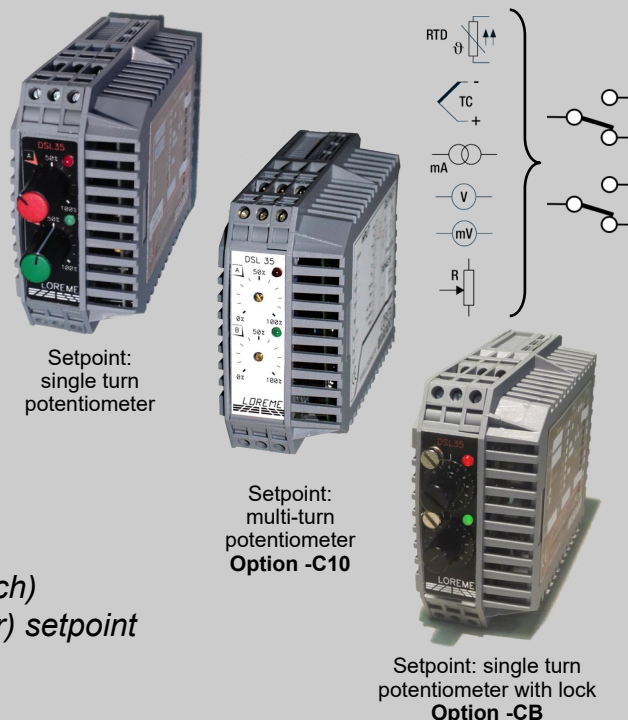
• Process and temperature inputs

Volt, mV, uA, mA, Aac, Adc, RMS, TRMS
Supply for 4-20mA sensor,
Potentiometer, frequency, ohms
Thermocouple, PT100, CTN, CTP,
Namur proximity sensor (IEC 60497-5-6)
Capacitive divisor, strain gauge

• Special inputs

Sum, average or 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 relay output
- Positive or negative safety (selection with internal switch)
- Internal (potentiometer) or external (volt, potentiometer) 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 or two independent thresholds. 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 (uA, mA, A, Ac and Dc), RMS,
- resistance in 2, 3 or 4 wires,
- 3-wires potentiometer (potentiometer reference 0.2V, 1V, 10 V),
- 4-wires strain gauge, commutable sensitivity, 5 V 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.

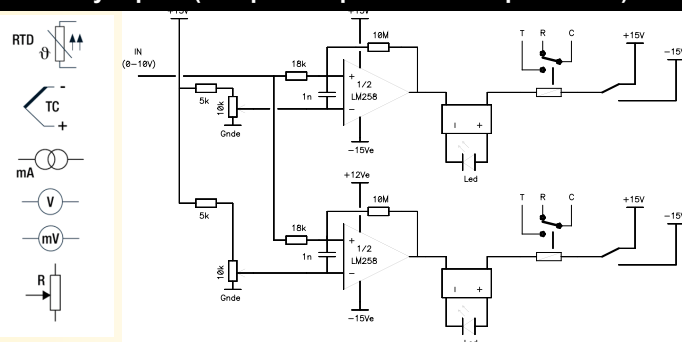
Special inputs:

- 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 relay).
 - 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
 - manual adjustment on 10 turns potentiometer with screwdriver.
 - 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 PCB 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

Synoptic: (comparator part without input circuit)



Version and order code:

- 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 be defined at order)
Option /Te: Fast version <10ms, electromechanical relay, (changeover contact)
Option /cext: External setpoint (0-10V or external potentiometer to be defined at order)
Option-c10 : setpoint adjustment by screwdriver on 10 turns split axe
Option-cb : setpoint adjustment by button 3/4 turn with lock

Special versions (available with 1 or 2 threshold) :

- DSLx35-SVL-MIN** selection of min value between 2 inputs (x= 1 or 2 threshold)
DSLx35-SVL-MAX selection of max value between 2 inputs (x= 1 or 2 threshold)
DSLx35-DiF: Signed difference between 2 inputs (x= 1 or 2 threshold)
DSLx35-DiF-ABS: Absolute difference between 2 inputs (x= 1 or 2 threshold)
DSLx35-SOM: Sum or average of 2 inputs (x= 1 or 2 threshold)

INPUT	
TYPE	RANGE
Voltage mV, V, (ac or dc)	5 mV ... 1000 V to be defined
Impedance	> 1 MOhms
Current mA, A, (ac or dc)	10 µA ... 5 A to be defined
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 30°C span mini
Thermocouple	- B, E, J, K, R, S, T, ... 100 °C span mini
cold junction compensation	-20 to 60 °C
THRESHOLD	
Setting accuracy	+/- 1 % (potentiometer 3/4 turn) +/-0.2% (potentiometer 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

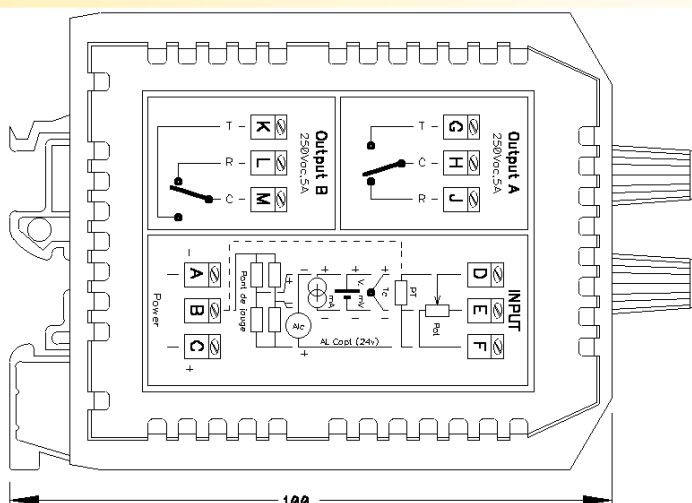
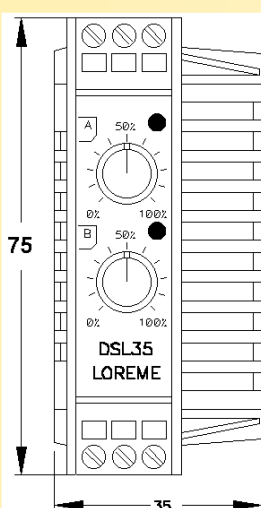
POWER SUPPLY (to specified at order)	
230 Vac 50-60 Hz +/- 10 %, 2.3 VA	
115 Vac 50-60 Hz +/- 10 %, 2.3 VA	
20 to 70 Vac / Vdc, 2 VA	
80 to 265 Vac / Vdc, 2 VA	
5 - 18Vdc or 9 - 30 Vdc, 2 W	
Reverse polarity protected	
ENVIRONMENT	
Operating Temperature	-25 to 60 °C
Storage Temperature	-40 to 85 °C
Influence	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

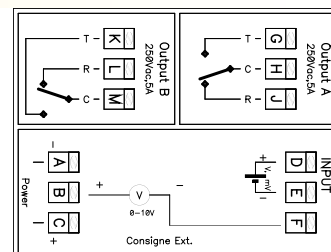
Immunity standard for industrial environments EN 61000-6-2		Emission standard for industrial environments EN 61000-6-4
EN 61000-4-2 ESD	EN 61000-4-8 AC MF	EN 55011
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	group 1 class A
EN 61000-4-4 EFT	EN 61000-4-11 AC dips	
EN 61000-4-5 CWG	EN 61000-4-12 ring wave	
EN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



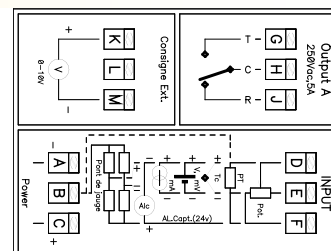
WIRING AND OUTLINE DIMENSIONS:



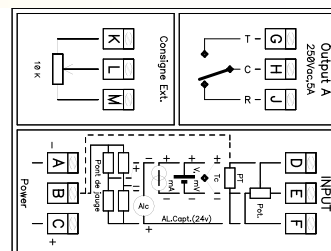
2 thresholds version with external setpoint 0..10V



1 threshold version with external setpoint 0..10V



1 threshold version with external potentiometer



2 current 4-20mA inputs version

