



Catalog

CRE

**Resistive
Epoxi Sensor**

DC Voltage Detectors

CRE + RL

Epoxy Resistive Sensor + Reed Relay Output

- ✓ **DC** Catenary Voltage Detector
- ✓ Models from **750 V_{DC}** to **4000 V_{DC}**
- ✓ **Brass** terminals and **Epoxy** construction
- ✓ Outdoor models made of **Cycloaliphatic Epoxy** resin
- ✓ Creepage distance: **305 mm**
- ✓ **Self-powered** from the catenary voltage
- ✓ **Vertical mounting** adaptable to any installation

Reed Relay

✓ **Reed relay** housed in a cylindrical aluminium enclosure and encapsulated in epoxy resin with potential-free changeover contact output:

- Activation at **> 40%** of nominal voltage
- Deactivation at **< 30%** of the nominal voltage
- Response time: **15 ms**
- Consumption: **3 mA** a 4000 V_{DC}

Applications

Detection of **DC voltage** presence in railway installations:

- Conventional trains
- Metro systems
- Trams



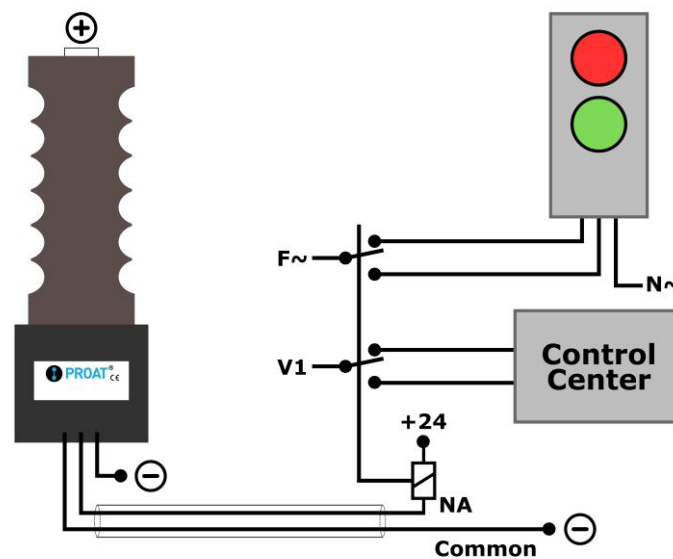
Models

Model	Material	Nominal Voltage V_N	Mechanical Load	Creepage distance	Test Voltage 10 s	Weight
CRE-750 + RL	Epoxy	750 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-750-EXT + RL	Cycloaliphatic Epoxy	750 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-1500 + RL	Epoxy	1500 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-1500-EXT + RL	Cycloaliphatic Epoxy	1500 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-4000 + RL	Epoxy	4000 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-4000-EXT + RL	Cycloaliphatic Epoxy	4000 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg

Connection

Four terminals for external connection:

- Catenary negative
- Three terminals for the reed relay changeover contact



Example of connection to a signal light

Technical data - RL

Reed Relay

Specifications	
Contact Type	SPDT
Switching Capacity	< 60 VA
Switching Voltage	< 400 V _{AC} / V _{DC}
Switching Current	< 1 A
Carrying Current	< 2 A
Insulation Resistance	> 10 ⁹ Ω
Operating Temperature	-40°C a +125°C

CRE + PTC-M1

Epoxy Resistive Sensor

+

DC Voltage Detector

- ✓ **DC Catenary** Voltage Presence Detector
- ✓ Models from **750 V_{DC}** to **4000 V_{DC}**
- ✓ **Brass** terminals and **Epoxy** construction
- ✓ Outdoor models made of cycloaliphatic Epoxy resin
- ✓ Creepage distance: **305 mm**
- ✓ **Vertical mounting** adaptable to any installation



PTC-M1 – DC Voltage Presence Detector

- ✓ **PTC-M1** amplifies the signal from a Resistive Sensor. Input **150 V_{DC}**, activation at **> 30%**
- ✓ Output: **potential-free switching contact**
- ✓ Voltage indication with **Red LED** diode
- ✓ Auxiliary voltage **120-230 V_{DC} | 120-230 V_{AC}** or **48 V_{DC}** depending on model
- ✓ Contacts on **11-pin** socket, **DIN rail** mounting

Applications

Detection of **DC voltage presence** in railway installations:

- Conventional trains
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- Trams

Allows remote signaling in an electrical panel, for disconnectors or circuit breakers.



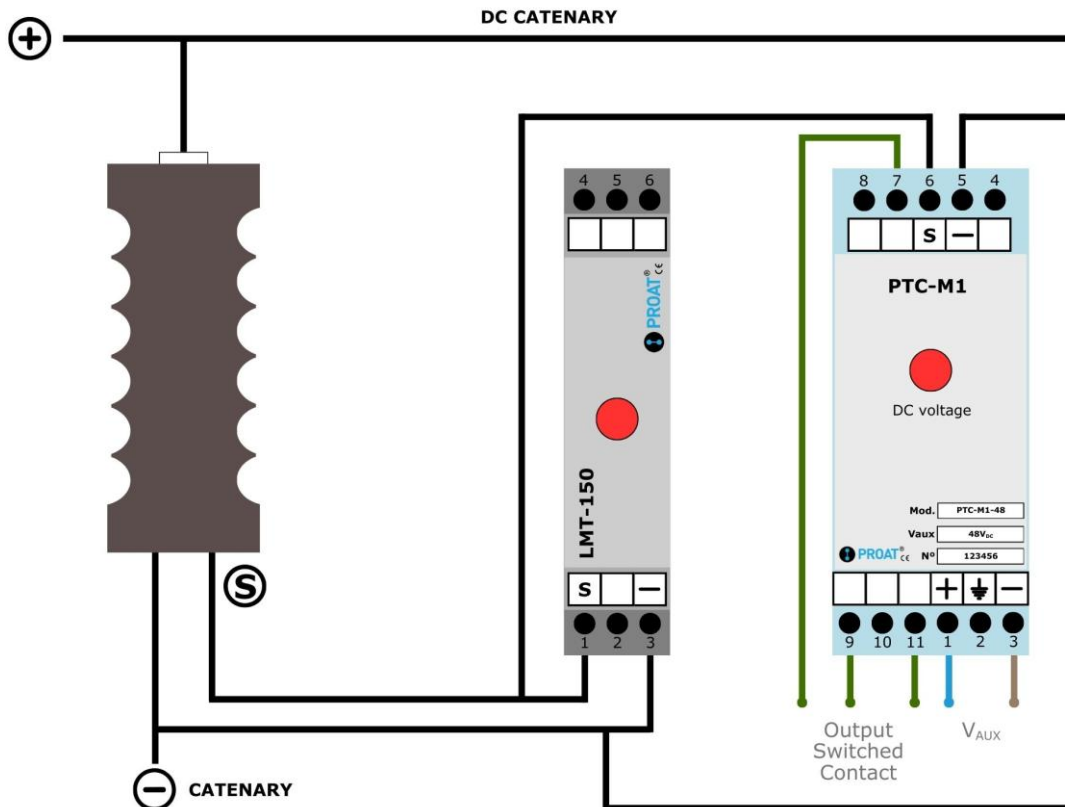
Models

Model	Material	Nominal Voltage V_N	Mechanical Load	Creepage distance	Test Voltage 10s	Weight
CRE-750	Epoxy	750 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-750-EXT	Cycloaliphatic Epoxy	750 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-1500	Epoxy	1500 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-1500-EXT	Cycloaliphatic Epoxy	1500 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-4000	Epoxy	4000 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg
CRE-4000-EXT	Cycloaliphatic Epoxy	4000 V _{DC}	4000 N	305 mm	2 * V _N	1.5 kg

Model	Auxiliary Voltage
PTC-M1	120-230 V _{DC} 120-230 V _{AC}
PTC-M1-48	48 V _{DC}

Example of order: CRE-750 + PTC-M1

Connection



❶ LMT-150 Voltage Limiter

The function of the LMT-150 voltage limiter is to prevent the output voltage from reaching hazardous levels ($>150\text{ V}$) when the PTC-M1 is disconnected from the base.

A red LED indicates the presence of voltage in the catenary.

Model	LED
LMT-150	No
LMT-150-L	Yes



❷ Constructive Features – PTC-M1

- DIN rail installation
- Terminals on UNDECAL base
- Contacts on an 11-pin socket
- Enclosure dimensions: $80\text{ mm} \times 77\text{ mm} \times 42\text{ mm}$
- UNDECAL base dimensions: $64\text{ mm} \times 38\text{ mm} \times 23\text{ mm}$
- Self-extinguishing plastic enclosure, class V0



❸ Technical data – PTC-M1

PTC-M1	
Specifications	
Input voltage	$0\text{--}150\text{ V}_{\text{DC}}$
Presence detection level	$100\text{ V} \pm 20\%$
Response time	30 ms
Standby power consumption	1 W
Fault power consumption	$< 2\text{ W}$
Standards compliance	
Insulation test voltage	
High-frequency disturbances	
Electrical fast transients	
Voltage impulse	
Relay contact characteristics	
Continuous current	5 A
Switching voltage	$< 230\text{ V}_{\text{AC}}$
Switching capacity	$< 2000\text{ VA}$

