



Catalog

CRE **Resistive** **Epoxi Sensor**

Voltage Detectors
for DC Catenary

CRE + RL

Epoxy Resistive Voltage Sensor

+

Reed Relay Output

- ✓ Catenary Voltage Detector **V_{DC}**
- ✓ Models from **750 V_{DC}** to **4.000 V_{DC}**
- ✓ **Brass** terminals and **Epoxy** construction
- ✓ Outdoor models made with **Cycloaliphatic Epoxy** resin
- ✓ Leakage Line of **305mm**
- ✓ **Self-powered** from the catenary voltage itself
- ✓ **Vertical mounting** adaptable to any installation

Reed Relay

✓ **Reed Relay** housed inside a cylindrical die-cast aluminum box with epoxy resin with potential-free switching contact output:

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

Applications

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

- Conventional trains
- Subways
- Trams



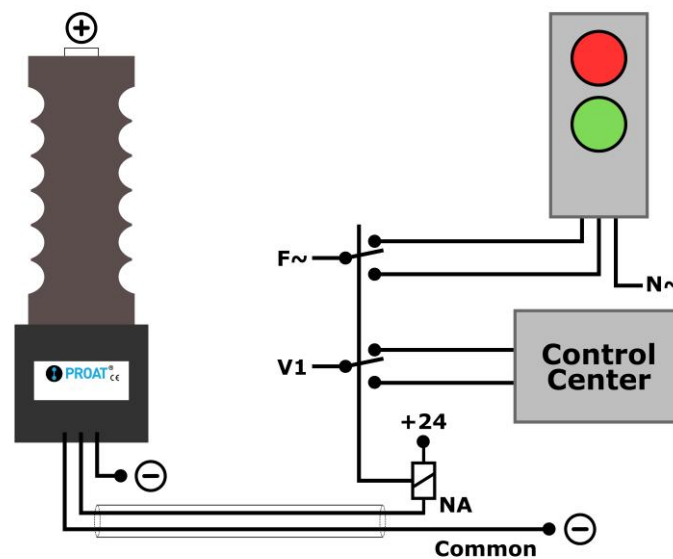
Models

Model	Material	Nominal Voltage V_N	Mechanical Charge	Leakage Line	Test Voltage 10s	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 output terminals for external connection:

- Negative from catenary
- Three reed relay switching contacts



Example of connection with semaphore

Technical data - RL

Reed Relay

Specifications	
Contact Type	SPDT
Switching Capacity:	<60 VA
Switching Voltage:	<400 V _{AC} / V _{DC}
Switching Current:	<1.0 A
Transport/Carrying Current:	<2.0 A
Insulation Resistance:	>10 ⁹ Ω
Operating Temperature:	-40° a +125°

CRE + PTC-M1

Epoxy Resistive Sensor

+

Direct Current Voltage Presence Detector

- ✓ Catenary Voltage Presence Detector **V_{DC}**
- ✓ Models from **750 V_{DC}** to **4.000 V_{DC}**
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PTC-M1 – Direct Current 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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Allows remote signaling in an electrical panel, for disconnectors or circuit breakers.



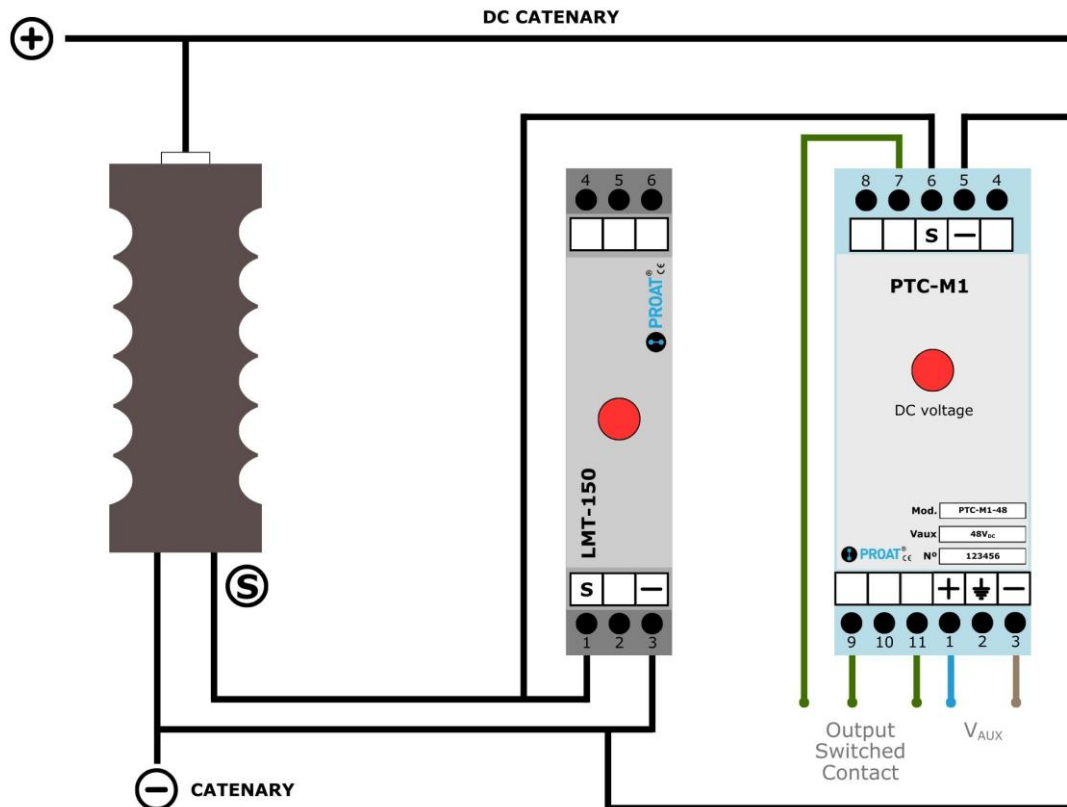
Models

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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 Limiter

The function of the LMT-150 limiter is to prevent the output voltage from remaining at non-hazardous levels (<150 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 Characteristics– PTC-M1

- DIN rail installation
- UNDECAL base terminals
- Self-extinguishing plastic enclosure, class V0



❸ Technical data – PTC-M1

MODEL	PTC-M1
Technical data	
Input Voltage	0-150 V _{DC}
Presence detection level	30%
Quiescent consumption	1 W
Fault consumption	<2 W
Standards complied with	
Insulation Test Voltage	
High-frequency disturbances	
Fast Transients	
Voltage Impulse	
Relay Contact Characteristics	
Continuous Current	5 A
Switching Voltage	<230 V _{AC}
Switching Power	<2000 VA