



Catalog

FACDC-2M

AC+DC Isolation Monitor

FACDC-2M

AC+DC Insolation Monitor with Dual Monitoring with Automatic Reset and Real-Time Display

- ✓ Detects **symmetrical and asymmetrical** isolation faults in single-phase and three-phase AC+DC systems on both sides of the switch
- ✓ **2 independent potential-free** commuted contacts with programmable trip levels and time delays: Alarm M1 and Alarm M2
- ✓ **Alarm M1:** threshold adjustable from 5 to 1000 kΩ and response time delay from 10 to 30 seconds
- ✓ **Alarm M2:** threshold adjustable from 5 to 1000 kΩ and response time delay from 10 to 30 seconds
- ✓ **Automatic reset** when measurements are within normal parameters and there is no insulation fault
- ✓ **Real-time display** of the installation's isolation level. Measuring range: 1 kΩ - 2000 kΩ
- ✓ **Switch status** displayed on the device screen
- ✓ For IT systems up to **800 V_{AC} – 1500 V_{DC}**, depending on the model
- ✓ **Modbus** Communications



Applications

Monitoring of possible isolation failures in AC+DC systems isolated from IT ground:

- Photovoltaic Installations (Inverters)
- Power Plants
- Rectifier Systems
- Lighting Installations
- AC+DC Auxiliary Power Systems



6 Function Features

- 2 output relays with independent potential-free commuted contacts, with programmable actuation levels and timings: Alarm M1 and Alarm M2.
- Programming adjustment values using the **SET-MENU** buttons on the front of the device:
 - Alarm M1 Actuation Level
 - Alarm M2 Actuation Level
 - Alarm M1 Time Delay
 - Alarm M2 Time Delay
 - Automatic reset time
 - Parasitic Capacity
 - Alarm memory – Yes/No
 - Modbus ID
 - Language: Spanish/English
- Real-time display of ground resistance measurements
- 2x8-character front display
- **TEST** button to simulate ground faults (+) and (-)
- **RESET** button to reset the device and clear the fault
- LEDs to signal Alarm M1 and Alarm M2 faults
- Electrically isolated RS-485 interface with Modbus-RTU protocol, depending on the model:
 - Configured Parameters
 - Instantaneous insulation measurement
 - Relay status
 - View ModBus map

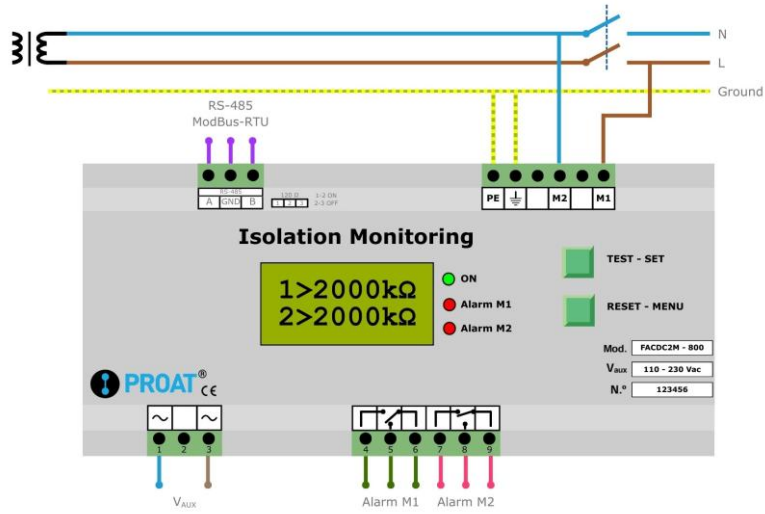
6 Models

Model	Nominal Voltage U_N	Operating Range	Alarm Level	Power Voltage	DIN Size	Communications
FACDC-2M-700	700 V _{AC} 1080 V _{DC}	0-700 V _{AC} 0-1080 V _{DC}	5-1000 kΩ y 5-1000 kΩ	86-264V _{AC} 90-370V _{DC}	9M - 160mm	ModBus-RTU
FACDC-2M-700-24	700 V _{AC} 1080 V _{DC}	0-700 V _{AC} 0-1080 V _{DC}	5-1000 kΩ y 5-1000 kΩ	24 V _{DC}	9M - 160mm	ModBus-RTU
FACDC-2M-800	800 V _{AC} 1500 V _{DC}	0-800 V _{AC} 0-1500 V _{DC}	5-1000 kΩ y 5-1000 kΩ	86-264V _{AC} 90-370V _{DC}	9M - 160mm	ModBus-RTU
FACDC-2M-800-24	800 V _{AC} 1500 V _{DC}	0-800 V _{AC} 0-1500 V _{DC}	5-1000 kΩ y 5-1000 kΩ	24 V _{DC}	9M - 160mm	ModBus-RTU

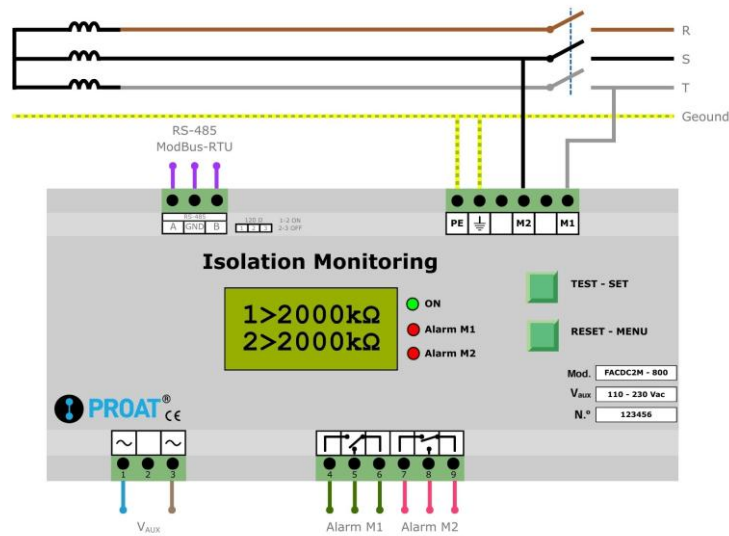
* Other models can be manufactured upon request.

Wiring

- Single phase

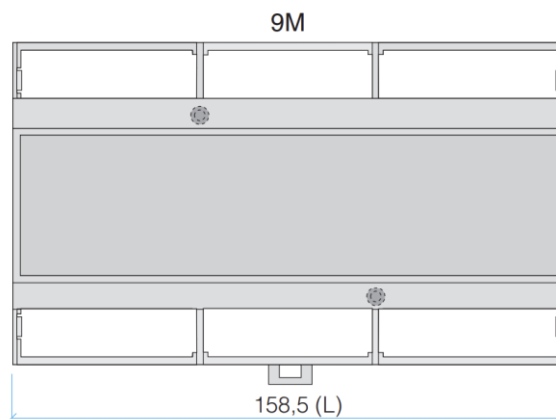
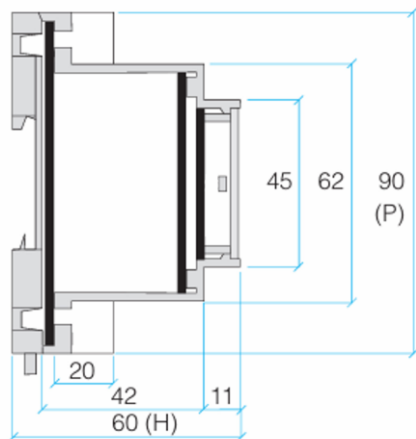


- Three-phase



Constructive Features

- DIN rail mounting
- Front plate terminals
- Class V0 self-extinguishing plastic enclosure



Technical Data

MODEL	FACDC-2M
Voltage Range	
Voltage range U_N	0 - $U_N V_{AC}$
Nominal frequency F_N	0-300Hz
Auxiliary voltage V_{AUX}	86 – 264 V_{AC}
	90 – 370 V_{DC}
	24 V_{DC}
Consumption at rest	≤6W
Maximum consumption	≤20W
Response Values	
Alarm Level M1	5 kΩ - 1000 kΩ
Alarm Level M2	5 kΩ - 1000 kΩ
Measurement Range	1 kΩ – 2000 kΩ
Measurement Error 1-10 kΩ/10-200 kΩ	±1 kΩ / ±10%
Hysteresis	25%
Response Time with $R_F=0.5 \cdot R_{AL}$ $C_p=1 \mu F$	≤10 s
Response Time with $R_F=0.5 \cdot R_{AL}$ $C_p=20 \mu F$	≤60 s
Alarm Time Delay M1	10-30 s
Alarm Time Delay M2	10-30 s
Reset Time	1-60 min
Factory settings	
Alarm Level M1	100 kΩ
Alarm Level M2	100 kΩ
Alarm Time Delay M1	10 s
Alarm Time Delay M2	10 s
Reset time	1 min
Modbus ID	1
Alarm memory	No
Language	ESP
Parasitic capacity	1 μF
Measuring Circuit	
Measurement voltage	±24 V_{DC}
Internal resistance	>392 kΩ
Impedance at 50Hz	>392 kΩ
Measurement current with $R_F=0$	≤2600 μA
Parasitic capacitance	<20 μF
Type of faults detected	Symmetrical and Asymmetrical
Front View	
ON	Green Led
Fault (+)	Red Led
Fault (-)	Red Led
Test button	Yes
Reset button	Yes
Screen	LCD 2x8 charac.
Dielectric Test	
V_{DC} Input – V_{AUX}	3k V_{RMS} – 1min
V_{DC} Input - Output Contacts	3k V_{RMS} – 1min
V_{AUX} – Output Contacts	3k V_{RMS} – 1min

Switching elements	
Number of switching elements	2
Type of outputs	Switched relay
Voltage outputs	Voltage free
Max AC load	250 V_{AC} 2A
Max DC load	300 V_{DC} 0,1A
Switching time RL	< 10 ms
Number of cycles	20,000,000
General Data	
Continually	Continually
Mounting	DIN rail
Connection	Screw M2,5
Screw torque	≤0,4 Nm
Protection grade	IP20
Flammability class	UL94V-0
Weight	350 gr
Operating temperature	-5°C...+60°C
Storage temperature	-20°C...+80°C
Relative humidity (without condensation)	<95%
Setting values method	Front opening
Standards	
Electrical safety requirements	UNE-EN 61010-1
Electrical safety requirements	UNE-EN 61010-2-0081
Electromagnetic compatibility (EMC)	UNE-EN 61000-6-1
Electromagnetic compatibility (EMC)	UNE-EN 61000-6-3/A1
European directive	2006/95/CE
European directive	2004/108/CE
Standard	IEC-61557-8
Communications	
Interface	RS-485
Protocol	ModBus-RTU
Port parameters	9600,8,N,1
ID ModBus	1-248
Available features	3,4
Operation	Slave
Cable length (m)	<1200
Connection	Terminals A/B