



# EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:  
**MRE0000016**

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

**Schneider Electric Private Limited**  
**Bangalore, Karnataka, India**

for

**Insulation Monitoring Devices (IMD)**

with type designation(s)

**IM9 & IM9-OL, IM10 & IM10H, IM15H, IM20 & IM20H, IM20-1700, IM400 & IM400C, IM400L & IM400THR & IM400LTHR, IM400-1700 & IM400-1700C**

The product is found to comply with

**EU RO Mutual Recognition Technical Requirements for Insulation Monitoring Devices (IMD)**

Intended service

**Insulation Monitoring device for use in IT systems for installation in enclosures onboard ship and offshore units**

## This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2027-07-05**.

Issued at **Høvik** on **2022-07-06**

DNV local station: **India CMC & NB**

for **DNV**

Approval Engineer: **Nicolay Horn**

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**Marta Alonso Pontes**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



## Product description

Insulation Monitoring Device:

Model number	Commercial reference number	Use
IM9	IMD9-IM9	Insulation monitor for low voltage AC, IT power systems
IM9-OL	IMD-IM9-OL	Insulation monitor for Motor off-line (measure the insulation resistance between stator and ground when motor is not energized)

Model number	Commercial reference number	Use
IM10 / IM10H	IMD-IM10 & IMD-IM10-H	Insulation monitor for low voltage IT power systems, AC, DC, ACDC
IM20 / IM20H	IMD-IM20 & IMD-IM20-H	Insulation monitor for low voltage IT power systems, AC, DC, ACDC w/ Modbus serial line communication, Injection inhibition input & Logging of events
IM20-1700	IMD-IM20-1700	Voltage adaptor accessory for IM20 insulation monitor.
IM15H	IMDIM15H	Insulation monitor for low voltage IT power systems, AC, DC, ACDC without Modbus serial line communication. (port disabled)

Model number	Commercial reference number	Use
IM400 / IM400C	IMD-IM400 & IMD-IM400C	Insulation monitor for low voltage IT power systems AC, DC, ACDC w/ Modbus serial line communication, Injection inhibition input & Logging of events. IM400C is conformally coated
IM400THR	IMDIM400THR	Insulation monitor for medium voltage IT power systems AC, DC, ACDC w/ Modbus serial line communication, Injection inhibition input & Logging of events. (injection signal is DC, Network Leakage Capacitance measurement not possible)
IM400L	IMDIM400L	Insulation monitor for low voltage IT power systems AC, DC, ACDC w/ Modbus serial line communication, Injection inhibition input & Logging of events. (injection signal is low frequency AC, Network Leakage Capacitance measurement not possible)
IM400LTHR	IMDIM400LTHR	Insulation monitor for medium voltage IT power systems AC, DC, ACDC w/ Modbus serial line communication, Injection inhibition input & Logging of events. (injection signal is DC, Network Leakage Capacitance measurement not possible)
IM400-1700 / IM400-1700C	IMD-IM400-1700 & IMD-IM400-1700C	Voltage adaptor accessory for IM400 insulation monitor. IM400-1700C is conformally coated

Technical data / characteristics:

Relay type	IM9	IM9-OL
Type of installation to be monitored	IT Power system - if connected to neutral < 600 V, L-L - if connected to phase < 480 V, L-L	IT/TT/TN AC Networks U< 690 V, 50< f <400Hz. DC networks: U<690V
Auxilliary power supply	50/60/400 Hz - 115/415 V AC ±15 % DC - 125/250 V DC ±15 %	50/60/400 Hz - 115/415 V AC ±15 % DC - 125/250 V DC ±15 %
Relay	Alarm: Min 12 V DC 10mA, max. 250V AC / 24 V DC 6A	Pre-alarm & Motor no start: Min 12 V DC 10mA, max. 250V AC / 24 V DC 6A
Operating temperature	- 25 to + 55 °C	- 25 to + 55 °C

Relay type	IM9	IM9-OL
Measurement accuracy	5 %	5 %
Degree of protection	IP40 on front face, IP20 at rear of casting	IP40 on front face, IP20 at rear of casting

Relay type	IM10 / IM20	IM10-H / IM20-H / IM15H
Type of installation to be monitored	Phase to phase maximum voltage with IM connected to phase: 480V AC, 340V DC. Phase to phase maximum voltage with IM connected to neutral: 600V AC	Dedicated to Medical premises according to IEC 61364-7-710 Phase to phase maximum voltage with IM connected to phase: 230V AC, 230V DC
Auxilliary power supply	50/60/400 Hz 110 to 415V AC $\pm 15\%$ DC 125/250 V DC $\pm 15\%$	50/60/400 Hz 110 to 230 V AC $\pm 15\%$ DC 125/250 V DC $\pm 15\%$
Alarm relay	Min 12 V DC 100mA, max. 250V AC / 24 V DC 6A	IM20-H : 48V DC, 50mA
Injection inhibition (IM20 only)	IM20: Contact min. $\leq 24$ VDC 5 mA, length $\leq 10$ m	---
Transformer Monitoring	---	IM20-H only : minimum load 5mA
Operating temperature	- 25 to + 55 °C	- 25 to + 55 °C
Measurement accuracy	5 %	5 %
Degree of protection	IP52 on front face, IP20 at rear of casting	IP52 on front face, IP20 at rear of casting

Relay Type	IM400 / IM400C	IM400-1700 / IM400-1700C
Monitored power system	Maximum rated phase to phase voltage, with IM400 connected to phase: 480VAC Maximum rated phase to phase voltage, with IM400 connected to Neutral: 830VAC. Maximum rated DC voltage: 480VDC	Maximum rated phase to phase voltage, with IM400 connected to phase: 1000VAC Maximum rated phase to phase voltage, with IM400 connected to Neutral: 1700VAC
Auxilliary power supply	100 - 440 VAC / 100 - 440 VDC	---
Two alarm relay	AC 250 V 3A DC 48 V 1A, 3 mA min. load	---
Operating temperature	- 25 to + 55 °C (+65°C when used with IM400-1700 and powered by 230V max)	---
Measurement range	10 $\Omega$ - 10 M $\Omega$	---
Measurement accuracy	5 % typical	---
Maximum power system capacitance	0.1 $\mu$ F to 500 $\mu$ F (up to 6000 $\mu$ F for photovoltaic application with use of voltage adaptors)	---
Degree of protection	IP54 on front face, IP20 at rear case	---

Relay Type	IM400L	IM400THR / IM400LTHR
Monitored power system	Maximum rated phase to phase voltage, connected to phase: 480VAC Maximum rated phase to phase voltage, connected to Neutral: 830VAC. Maximum rated DC voltage: 480VDC	Maximum rated phase to phase voltage, connected to phase: 480VAC Maximum rated phase to phase voltage, connected to Neutral: 830VAC.
Auxilliary power supply	24-48 V DC	IM400THR: 100 - 440 VAC / 100 - 440 VDC IM400LTHR: 24-48 V DC
Two alarm relay	AC 250 V 6A DC 48 V 1A, 10 mA min. load	AC 250 V 3A DC 48 V 1A, 3 mA min. load
Operating temperature	- 25 to + 55 °C	- 25 to + 55 °C
Measurement range	10 Ω - 10 MΩ	10 Ω - 10 MΩ
Measurement accuracy	5 % typical	5 % typical
Maximum power system capacitance	0.1 μF to 500 μF (up to 6000 μF for photovoltaic application with use of voltage adaptors)	---
Degree of protection	IP54 on front face, IP20 at rear case	IP54 on front face, IP20 at rear case

### Manufactured by

Schneider Electric India Pvt Ltd,  
 #12A, Attibele Industrial Area  
 Hosur Main Road Neralur Post  
 Bangalore 562107 India

### Application/Limitation

For installation inside switchboards / enclosures onboard ships and offshore units.  
 Operating instructions of the manufacturer are to be observed.

### Type Approval documentation

### Marking of product

Manufacturer – Type designation – Serial number - Power ratings.

### Other Conditions

Applicable tests according to Class Guideline DNVGL-CG-0339, November 2016.  
 Type tests in accordance with IEC 61557-1 & 8 and / or IEC 60664-1 & IEC61010-1.

### Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer’s product type marking and Type Approval Certificate.

Periodical assessment is to be performed annually

## Generic Statement for EU RO MR Type Approval Certificate

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA);
- Russian Maritime Register of Shipping (RS).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).

END OF CERTIFICATE