

Product overview



DNV Certification

Insulation monitors and measuring relays with DNV certification - For use on ships



DOLD 
Our experience. Your safety.

Insulation monitors with DNV certification

VARIMETER IMD - Insulation monitors







The insulation monitors RN 5897/010 and RN 5897/011 continuously monitor the insulation quality of the supply voltage in shipboard generator grids. This allows insulation faults to be detected at an early stage, preventing failures and increasing operational safety.

Typical applications include monitoring the drive of ship propellers, but also subordinate systems such as pumps or other technical units. Various high-voltage and emergency power centres responsible for supplying compressors, pumps, sprinkler systems, waste processing and cabins are also monitored.

Both devices have the necessary DNV approval and thus meet the requirements for the maritime sector.



Overview insulations monitors and coupling devices:

| |  |  |  |  |  |  |
|---------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Device type | RN 5897/010 | RN 5897/011 | RN 5897/311 | RL 5898 | RP 5898 | RR 5898 |
| Classification | Insulation monitor | | | Coupling device | | |
| IMD type | AC, DC, AC/DC | AC, DC, AC/DC | AC, DC, AC/DC | AC, DC, AC/DC | AC, DC, AC/DC | AC, DC, AC/DC |
| Nominal voltage IT system | AC 0 ... 230 V (1000 V) DC 0 ... 230 V (1500 V) (with coupling device) | AC 0 ... 230 V (1000 V) DC 0 ... 230 V (1500 V) (with coupling device) | AC 0 ... 230 V (1000 V) DC 0 ... 230 V (1500 V) (with coupling device) | up to AC 400 V DC 500 V | up to AC 690 V DC 1000 V | up to AC 1000 V DC 1500 V |
| Measuring frequency | DC or 16 ... 1000 Hz | DC or 16 ... 1000 Hz | DC or 16 ... 1000 Hz | - | - | - |
| Response value | 20 kΩ ... 2 MΩ 1 ... 250 kΩ | 1 ... 2000 kΩ 1 ... 2000 kΩ | 1 ... 2000 kΩ 1 ... 2000 kΩ | - | - | - |
| Contacts | 2 x 1 changeover contact | 2 x 1 changeover contact | 2 x 1 changeover contact | - | - | - |
| Leakage capacity up to | 1000 μF | 1000 μF | 1000 μF | - | - | - |
| Display | + | + | - | - | - | - |
| Interface | - | Modbus RTU | Modbus RTU | - | - | - |
| Alarm relay | K1: Alarm K2: Pre-Alarm | K1: Alarm K2: Pre-Alarm | K1: Alarm K2: Pre-Alarm | - | - | - |
| Enclosure design | Distribution board | Distribution board | Distribution board | Distribution board | Distribution board | Distribution board |
| Approval | DNV, UL | DNV, UL | DNV, UL | DNV, UL | DNV, UL | DNV |
| Width | 52,5 mm | 52,5 mm | 52,5 mm | 35 mm | 70 mm | 105 mm |

Multifunctional measuring relays with DNV certification



VARIMETER PRO - Multifunctional measuring relays

The multifunctional measuring relays MK 9300N and MH 9300 are used, among other things, to monitor nacelle drives for ship propellers (Azipod systems). There, they measure essential electrical variables such as frequency and voltage asymmetry at the starter of the hydraulic pump.

Reliable monitoring enables critical conditions to be detected at an early stage, preventing damage to the drive technology and sustainably increasing the availability of the systems. This is particularly important in the maritime sector, as the 360° swivelling nacelle drives for ship propellers have a decisive influence on manoeuvrability and precision when steering.

The multifunctional measuring relays are DNV-certified and therefore approved for use on ships.



| Overview multifunctional measuring relays: | | |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| |  |  |
| Device type | MK 9300N | MH 9300 |
| Classification | Multifunctional measuring relays | |
| Phasenausführung | 1- and 3-phase | 1- and 3-phase |
| Messgrößen | Overvoltage / undervoltage, voltage asymmetry, overcurrent / undercurrent, cos phi, active, apparent and reactive power, frequency and phase sequence | |
| Connection technique ¹⁾ | Standard, PC, PS | Standard, PC, PS |
| Standard measuring range | 3 AC 24 ... 400 V | 3 AC 24 ... 690 V |
| Measuring range max. | 400 V | 690 V |
| Measuring current | AC 12 A | AC 12 A |
| Output contacts | 1 changeover contact | 2 x 1 changeover contact |
| On-delay | + | + |
| Display | + | + |
| Interface | - | - |
| Enclosure design | Switch cabinet | Switch cabinet |
| Approval | DNV | DNV |
| Width | 22,5 mm | 45 mm |

¹⁾ S: Terminal blocks fixed, with screw terminals
 PC: Pluggable terminal blocks with cage clamp terminals
 PS: Pluggable terminal blocks with screw terminals

Our Experience. Your Safety.

The right solution for every application.



SAFEMASTER STS

The SAFEMASTER STS modular safety switch and key transfer system serves to monitor the moveable safety guards found on machines and installations. It combines the advantages of safety switches, guard locks, key transfer and command functions in a single system. SAFEMASTER STS is also suitable for the wireless safeguarding of applications in harsh and extreme environmental conditions.

SAFEMASTER

The safety relay modules of the SAFEMASTER series monitor different safety functions such as emergency stop, safety door, two-hand control, etc. The safety modules are characterised by quick and easy commissioning, combined with convenient connection technology. Command devices such as the wired enabling switch complete the portfolio.

Innovative Safety Concepts

As a solution provider in the field of safe automation and electrical safety, Dold offers a comprehensive portfolio from a single source. Our product solutions have been used successfully worldwide for many decades.

In addition to monofunctional switching devices for monitoring individual measured variables or simple safety applications, right through to multifunctional solutions, Dold develops tailor-made solutions for your industry and application.

We would be happy to provide you with information about further product solutions.



VARIMETER

Hybrid relays combine the advantages of robust relay technology with wear-resistant semiconductor technology in a perfect way. Thanks to the combination of different switching technologies, the 17.5 mm narrow IK 3070/200 is particularly suitable for applications that require high switching performance and a long service life.



VARIMETER PRO

The multifunctional measuring relay UG 9400 from the VARIMETER PRO series combines up to 9 monitoring functions in a 22.5 mm narrow device and enables communication via Modbus. The device simultaneously monitors the 3-phase grid for overvoltage/undervoltage, voltage asymmetry, overcurrent/undercurrent, $\cos \phi$, active, apparent and reactive power, frequency and phase sequence.

DOLD

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