

RMP-121D - Reverse power relays

• **Description:** The protective reverse power relay type RMP-121D forms part of a complete DEIF series of relays for protection and control of generators, and is applicable to both marine and land-based installations.

• **Features include:**

- Protection against "motoring"
- Single-phase measurement
- LED indication of fault condition
- Timer-controlled tripping
- LED indication for activated relay
- 35 mm DIN rail or base-mounting

• **Outputs:** 1 minimum relay output
Settings: -0...-25% of P nom
Delay: 0.4...20 s

• **Aux. voltage (U_n):**

57.7..690VAC,24-48-110-220VDC

• **Meas. voltage (U_n):**

57.7...690V AC

• **Meas. current (I_n):**

0.4...5.0A

• **Frequency range:**

40..45...65..70Hz

• **Measuring system:**

1W-single phase,1W3-3 phase
3 wire bal. load,1W4-3 phase
4 wire bal. load



RMQ-111D - Loss of excitation relay

• **Description:** This relay is applied to protect a generator running in parallel with other generators from running as an induction generator due to underexcitation. The RMQ-111D is especially applied in cases where applying an undervoltage relay for protection does not suffice, because the remaining generators of the system can supply sufficient reactive power to magnetise the faulty generator, thus maintaining the terminal voltage of the generators.

• **Features include:**

- Protection of generators
- Single-phase measurement
- Timer-controlled tripping
- LED indication of fault/activated relay
- 35 mm DIN rail or base-mounting

• **Outputs:** 1 maximum relay output
Settings: -25...-25% of Q nom
Delay: 0.4...20 s

• **Aux. voltage (U_n):** 57.7..690VAC,
24-48-110-220VDC

• **Meas. voltage (U_n):**

57.7...690V AC

• **Meas. current (I_n):** 0.4...5.0A

• **Frequency range:**

40..45...65..70Hz

• **Measuring system:**

1var3, 3 phase 3 wire bal. load
1var4, 3 phase 4 wire bal. load



RMC-111D - Short circuit relay

• **Description:** This short circuit relay is applied in cases where only protection against short circuit currents is required.

• **Features include:**

- 3-phase measurement
- LED indication of fault condition
- Timer-controlled tripping
- LED indication for activated relay
- 35 mm DIN rail or base-mounting

• **Aux. voltage (U_n):** 57.7..690VAC,
24-48-110-220VDC

• **Meas. current (I_n):** 0.4...5.0A

• **Frequency range:**

40..45..65..70Hz

• **Outputs:** 1 maximum relay output, Setting: 100..400% of I nom, Delay: 0.1...1/5/10 s



FAS-113DG - Synchroniser

• **Main function:** The FAS-113DG synchroniser is applied for synchronisation of a generator to the busbar and closing of its circuit breaker when the voltage difference, the slip frequency and the phase angles are within the preset limits.

• **Features include:**

- LED indication for status, activated control and synchronising signal
- 35 mm DIN rail or base-mounting

• **Outputs:** Synch. pulse output:

- 1 relay output, Freq. control outputs: 2 relay outputs

• **Measuring system:** 2 phase, single phase

• **Aux. voltage (Un):**

- 57.7...690V AC
- 24-48-110-220V DC

• **Meas. voltage (Un):**

- 57.7...690V AC

• **Frequency range:**

- 40..45...65..70Hz



FAS-115DG - Synchroniser

• **Main function:** The FAS-115DG synchroniser is applied for synchronisation of a generator to the busbar and closing of its circuit breaker when the voltage difference, the slip frequency and the phase angles are within the preset limits. Moreover, this synchroniser offers voltage-matching.

• **Features include:**

- LED indication for status, activated control and synchronising signal
- 35 mm DIN rail or base-mounting

• **Outputs:** Synch. pulse output:

- 1 relay output, Freq. control outputs: 2 relay outputs, Voltage control: 2 relay outputs

• **Aux. voltage (Un):**

- 57.7...690V AC
- 24-48-110-220V DC

• **Meas. voltage (Un):**

- 57.7...690V AC

• **Frequency range:**

- 40..45...65..70Hz

• **Measuring system:** 2 phase, single phase



HAS-111DG - Paralleling relay

• **Main function:** The HAS-111DG synchroniser is applied to check the synchronisation conditions. It can be used in installations requiring manual or semi-automatic synchronisation (e.g. tie breakers). The paralleling relay transmits a synchronisation pulse when the phase angle, frequency and voltage deviations are within the set limits. Moreover, the HAS-111DG is equipped with 2 analogue outputs. These outputs can be used for regulating purposes together with DEIF A/S Load Sharing Units.

• **Features include:**

- Synchronisation of generator to busbar
- Setting of phase angle difference
- Setting of frequency and voltage difference
- LED indication for status and synchronising signal
- 35 mm DIN rail or base-mounting

• **Aux. voltage (Un):**

- 57.7...690V AC
- 24-48-110-220V DC

• **Meas. voltage (Un):**

- 57.7...690V AC

• **Frequency range:**

- 40..45...65..70Hz

• **Measuring system:** 2 phase, single phase



RMC-122D - Short circuit and overcurrent relay

- **Description:** This combined short circuit and overcurrent relay is applied for protection of generators against both overcurrents and short circuit currents.
- **Features include:**
 - 3-phase measurement
 - LED indication of fault condition
 - Timer-controlled tripping
 - LED indication for activated relay
 - 35 mm DIN rail or base-mounting
- **Aux. voltage (Un):** 57.7..690VAC, 24-48-110-220VDC
- **Meas. current (In):** 0.4...5.0A
- **Frequency range:** 40..45..65..70Hz
- **Outputs:** 2 maximum relay outputs, Settings: 50...150% of I nom, Delay: 0.1...1/5/10s, 0.5...20/60/120 s



RMC-132D - Double overcurrent relay

- **Description:** This double overcurrent relay is applied in cases where protection against overcurrents at two levels is required.
- **Features include:**
 - 3-phase measurement
 - LED indication of fault condition
 - Timer-controlled tripping
 - LED indication for activated relay
 - 35 mm DIN rail or base-mounting
- **Aux. voltage (Un):** 57.7..690VAC, 24-48-110-220VDC
- **Meas. current (In):** 0.4...5.0A
- **Frequency range:** 40..45..65..70Hz
- **Outputs:** 2 maximum relay outputs, Settings: 50...150% of I nom, Delay: 0.5..20/60/120s



RMF-112D - Frequency relay

- **Description:** The RMF-112D is applied for protection against underfrequency and overfrequency by supervising the frequency (of generators) in single-phase and 3-phase networks.
- **Features include:**
 - Combined underfrequency/ overfrequency
 - For single and 3-phase networks
 - LED indication of fault condition
 - Timer-controlled tripping
 - LED indication for activated relay
 - 35 mm DIN rail or base-mounting
- **Aux. voltage (Un):** 57.7..690VAC, 24-48-110-220VDC
- **Meas. voltage (Un):** 57.7...690V AC
- **Frequency range:** 40..45..65..70Hz
- **Outputs:** 1 min. & 1 max. relay output, Settings: $\pm 10\%$ of f nom, $\pm 20\%$ of f nom at f nom = 55Hz, Delay: 0...10s, Nom. frequency: 50Hz, 55Hz, 60Hz
- **Measuring system:** 2 phase, single phase



LSU-112DG - Load sharing unit

• **Main function:** This product offers load-sharing between generators and interfaces to a governor through an electronic potentiometer. It is suitable for e.g. control of diesel and gas generators. The LSU-112DG can control the power unit in stand-alone mode (performing frequency control), parallel with grid (performing power control), or parallel with other power units (performing frequency and power control).

• **Features include:**

- Built-in power & frequency transducer
- Constant power or isochronous mode
- LED indication for status & activated control
- 35 mm DIN rail or base-mounting

• **Outputs:** Speed control: 2 relay outputs

• **Aux. voltage (Un):** 57.7...690VAC, 24-48-110-220V DC

• **Meas. voltage (Un):**

57.7...690V AC

• **Meas. current (In):**

0.4...5.0A

• **Frequency range:**

40..45...65..70Hz

• **Measuring system:**

1W3,3 phase 3 wire bal.

load single phase



LSU-113DG - Load sharing unit

• **Main function:** (same as LSU-112DG)

-Reverse power protection and low power detection

- Built-in power & frequency transducer
- Constant power or isochronous mode
- LED indication for status & activated control
- 35 mm DIN rail or base-mounting

• **Outputs:** Speed control: 2 relay outputs, reverse power protection: 1 relay

• **Aux. voltage (Un):** 57.7...690VAC, 24-48-110-220V DC

57.7...690V AC,

24-48-110-220V DC

• **Meas. voltage (Un):**

57.7...690V AC

• **Meas. current (In):**

0.4...5.0A

• **Frequency range:**

40..45...65..70Hz

• **Measuring system:**

1W3,3 phase 3 wire bal.

load single phase



LSU-114DG - Load sharing unit

• **Main function:** (same as LSU-112DG)

• **Features include:**

- Built-in power & frequency transducer
- Automatic start/stop outputs
- Constant power or isochronous mode
- LED indication for status & activated control
- 35 mm DIN rail or base-mounting

• **Outputs:** Speed control: 2 relay outputs, Start/stop: 2 relay outputs

• **Aux. voltage (Un):** 57.7...690VAC, 24-48-110-220V DC

• **Meas. voltage (Un):**

57.7...690V AC

• **Meas. current (In):**

0.4...5.0A

• **Frequency range:**

40..45...65..70Hz

• **Measuring system:**

1W3,3 phase 3 wire bal.

load single phase



LSU-122DG - Var load sharing unit

• **Main function:** This product offers load-sharing between generators and interfaces to a governor through an electronic potentiometer. It is suitable for e.g. control of diesel and gas generators. The LSU-122DG can control the power unit in stand-alone mode (performing frequency control), parallel with grid (performing power control), or parallel with other power units (performing frequency and power control).

• **Features include:**

- Built-in reactive power transducer
- Control of AVR
- Input for external voltage transducer
- Constant power or isochronous mode
- LED indication for status & activated control
- 35 mm DIN rail or base-mounting

• **Outputs:** Voltage control: 2 relay outputs

• **Aux. voltage (U_n):** 57.7...690V AC, 24-48-110-220V DC

• **Meas. voltage (U_n):**

57.7...690V AC

• **Meas. current (I_n):**

0.4...5.0A

• **Frequency range:**

40..45...65..70Hz

• **Measuring system:**

1var3,1W3,3 phase 3 wire
bal. load single phase

