

Installation Contactors

HS20
HS25
HS40
HS63



Technical Information

Installation Contactors

Function:

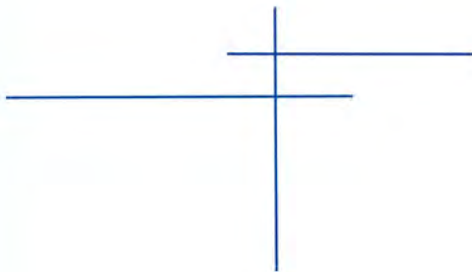
Installation contactors are electromagnetic actuated switches. When a control current is applied across the trip coil, the resulting magnetic attraction closes a main circuit. The energized status is maintained for as long as the control current flows.

Characteristics:

Installation contactors are especially suitable for very frequent switching of high currents. The suitability of contactors for disconnecting is subject to qualification; they must be safeguarded against overloads and short-circuits by series-connected protective devices.

The HS... model range meets the requirements of utilization categories AC1, AC 3 and conditionally, AC7b. The utilization category indicates the frequency of switching and the current load capacity of the contact material (see DIN VDE 0660 Part 102 and EN 60947-4-1)

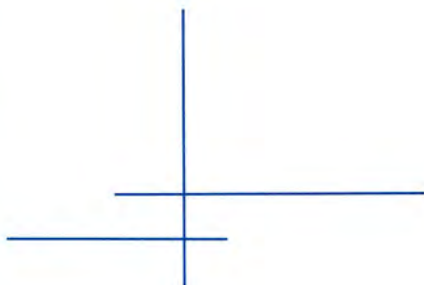
The trip coil of the HS... model range is extremely low-noise and suitable for continuous operation (100% duty cycle).



Applications:

Installation contactors can be used for various applications in domestic and utility buildings as well as industrial installations. They take on the task of switching

- incandescent lamps
- fluorescent lamps
- transformers for halogen low-voltage lamps
- high-pressure mercury vapour lamps (HQL, HPL)
- metal halide lamps (HQL, HPI)
- low- and high-pressure sodium vapour lamps
- storage heaters
- drives (motors)



Installation contactors 230 V~

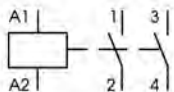
| | Contacts | Rated Current I _{th} (A) | Capacity AC1/AC3 (kW) | Coil | Module(s) | Order No. |
|---------|--------------|--------------------------------------|--------------------------|---------------|-----------|------------|
| HS20-20 | 2 NOC | 20 | 4.6/- | 230 V / 50 Hz | 1 | 09 980 402 |
| HS20-11 | 1 NOC, 1 NCC | 20 | 4.6/- | 230 V / 50 Hz | 1 | 09 980 404 |
| HS20-02 | 2 NCC | 20 | 4.6/- | 230 V / 50 Hz | 1 | 09 980 406 |
| HS20-13 | 1 NOC, 3 NCC | 24 | 14/3 | 230 V / 50 Hz | 2 | 09 980 426 |
| HS20-31 | 3 NOC, 1 NCC | 24 | 14/3 | 230 V / 50 Hz | 2 | 09 980 424 |
| HS20-40 | 4 NOC | 24 | 14/3 | 230 V / 50 Hz | 2 | 09 980 422 |
| HS25-13 | 1 NOC, 3 NCC | 25 | 17/4 | 230 V / 50 Hz | 2 | 09 980 412 |
| HS25-31 | 3 NOC, 1 NCC | 25 | 17/4 | 230 V / 50 Hz | 2 | 09 980 410 |
| HS25-40 | 4 NOC | 25 | 17/4 | 230 V / 50 Hz | 2 | 09 980 408 |
| HS25-04 | 4 NCC | 25 | 17/4 | 230 V / 50 Hz | 2 | 09 980 427 |
| HS25-22 | 2 NOC, 2 NCC | 25 | 17/4 | 230 V / 50 Hz | 2 | 09 980 431 |
| HS40-40 | 4 NOC | 40 | 27.5/12.5 | 230 V / 50 Hz | 3 | 09 980 414 |
| HS40-30 | 3 NOC | 40 | 27.5/12.5 | 230 V / 50 Hz | 3 | 09 980 440 |
| HS40-31 | 3 NOC, 1 NCC | 40 | 27.5/12.5 | 230 V / 50 Hz | 3 | 09 980 416 |
| HS40-22 | 2 NOC, 2 NCC | 40 | 27.5/12.5 | 230 V / 50 Hz | 3 | 09 980 429 |
| HS40-04 | 4 NCC | 40 | 27.5/12.5 | 230 V / 50 Hz | 3 | 09 980 435 |
| HS63-40 | 4 NOC | 63 | 43/12.5 | 230 V / 50 Hz | 3 | 09 980 418 |
| HS63-30 | 3 NOC | 63 | 43/12.5 | 230 V / 50 Hz | 3 | 09 980 438 |
| HS63-31 | 3 NOC, 1 NCC | 63 | 43/12.5 | 230 V / 50 Hz | 3 | 09 980 420 |
| HS63-22 | 2 NOC, 2 NCC | 63 | 27.5/12.5 | 230 V / 50 Hz | 3 | 09 980 430 |

Installation contactors 24 V ~

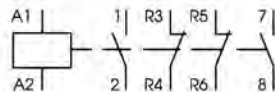
| | | | | | | |
|---------|--------------|----|-----------|--------------|---|------------|
| HS20-20 | 2 NOC | 20 | 4.6/- | 24 V / 50 Hz | 1 | 09 980 401 |
| HS20-11 | 1 NOC, 1 NCC | 20 | 4.6/- | 24 V / 50 Hz | 1 | 09 980 403 |
| HS20-02 | 2 NCC | 20 | 4.6/- | 24 V / 50 Hz | 1 | 09 980 405 |
| HS20-13 | 1 NOC, 3 NCC | 24 | 14/3 | 24 V / 50 Hz | 2 | 09 980 425 |
| HS20-31 | 3 NOC, 1 NCC | 24 | 14/3 | 24 V / 50 Hz | 2 | 09 980 423 |
| HS20-40 | 4 NOC | 24 | 14/3 | 24 V / 50 Hz | 2 | 09 980 421 |
| HS25-13 | 1 NOC, 3 NCC | 25 | 17/4 | 24 V / 50 Hz | 2 | 09 980 411 |
| HS25-31 | 3 NOC, 1 NCC | 25 | 17/4 | 24 V / 50 Hz | 2 | 09 980 409 |
| HS25-40 | 4 NOC | 25 | 17/4 | 24 V / 50 Hz | 2 | 09 980 407 |
| HS25-04 | 4 NCC | 25 | 17/4 | 24 V / 50 Hz | 2 | 09 980 428 |
| HS40-40 | 4 NOC | 40 | 27.5/12.5 | 24 V / 50 Hz | 3 | 09 980 413 |
| HS40-31 | 3 NOC, 1 NCC | 40 | 27.5/12.5 | 24 V / 50 Hz | 3 | 09 980 415 |
| HS40-22 | 2 NOC, 2 NCC | 40 | 27.5/12.5 | 24 V / 50 Hz | 3 | 09 980 433 |
| HS40-04 | 4 NCC | 40 | 27.5/12.5 | 24 V / 50 Hz | 3 | 09 980 436 |
| HS63-40 | 4 NOC | 63 | 43/12.5 | 24 V / 50 Hz | 3 | 09 980 417 |
| HS63-31 | 3 NOC, 1 NCC | 63 | 43/12.5 | 24 V / 50 Hz | 3 | 09 980 419 |
| HS63-22 | 2 NOC, 2 NCC | 63 | 27.5/12.5 | 24 V / 50 Hz | 3 | 09 980 434 |

Switching Contacts:

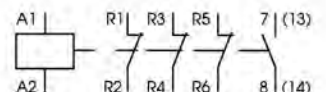
• Utilization Categories AC1, AC 3



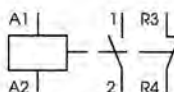
HS 20-20



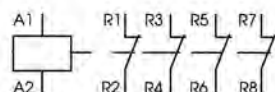
HS 25-22, HS 40-22



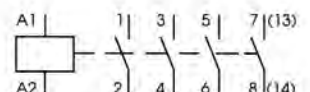
HS 20-13, HS 25-13



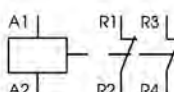
HS 20-11



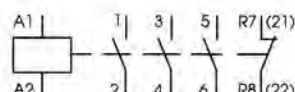
HS 25-04, HS 40-04



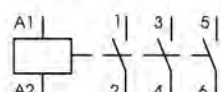
HS 20-40, HS 25-40,
HS 40-40, HS 63-40



HS 20-02,



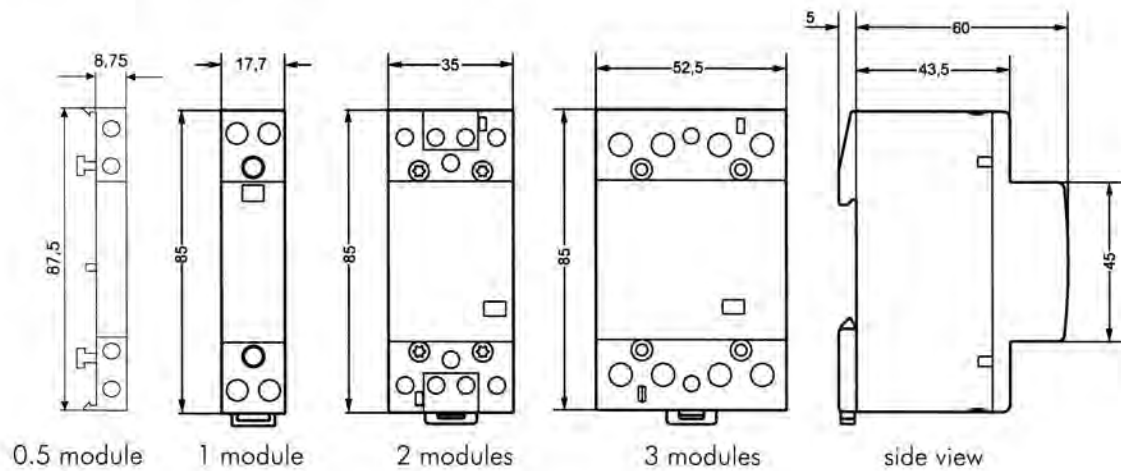
HS 20-31, HS 25-31,
HS 40-31, HS 63-31



HS 40-30, HS 63-30

Mounting method:

- Snap-on fastening on DIN-rail to EN 50022



Accessories

| Function | Module | Order No. |
|-----------------------------------------------------------------------------------------|--------|------------|
| HSH 11 Auxiliary switch HS20 (4-pole)/HS25/HS40/HS63 1 NOC, 1 NCC (AC1/AC15 - 10/3A) | 0.5 | 09 980 497 |
| HSP1 25 Sealing cover for HS20 (4-pole)/HS25 | | 09 980 498 |
| HSP 40/63 Sealing cover for HS40/HS63 | | 09 980 499 |

Technical Data:

| Switching lamp loads | Type of lamp loads | Wattage W | Current A | Capacitor µF | Max. no of lamps per current path at 230 V/50 Hz and max. 60°C | | | |
|-------------------------------------------------------------|--------------------|--------------|--------------|-----------------|----------------------------------------------------------------|---------|---------|------|
| | | | | | HS20 | HS25 | HS40 | HS63 |
| Incandescent lamps | 60 | 0.27 | - | 22 | 28 | 92 | 129 | |
| | 100 | 0.45 | - | 13 | 17 | 55 | 77 | |
| | 200 | 0.91 | - | 7 | 8 | 27 | 38 | |
| | 300 | 1.36 | - | 4 | 5 | 19 | 26 | |
| | 500 | 2.27 | - | 3 | 3 | 11 | 16 | |
| | 1000 | 4.50 | - | 1 | 1 | 6 | 8 | |
| Fluorescent lamps uncompensated or series compensated | 11 | 0.16 | - | 60 | 75 | 210 | 310 | |
| | 18 | 0.37 | 2.7 | 25 | 30 | 90 | 140 | |
| | 24 | 0.35 | 2.5 | 25 | 30 | 90 | 140 | |
| | 36 | 0.43 | 3.4 | 20 | 25 | 70 | 140 | |
| | 58 | 0.67 | 5.3 | 13 | 16 | 40 | 65 | |
| | 65 | 0.67 | 5.3 | 13 | 16 | 40 | 65 | |
| Fluorescent lamps lead-lag circuit | 11 | 0.07 | - | 2 x 100 | 2 x 110 | 2 x 220 | 2 x 250 | |
| | 18 | 0.11 | - | 2 x 50 | 2 x 55 | 2 x 130 | 2 x 200 | |
| | 24 | 0.14 | - | 2 x 40 | 2 x 44 | 2 x 110 | 2 x 160 | |
| | 36 | 0.22 | - | 2 x 30 | 2 x 33 | 2 x 70 | 2 x 100 | |
| | 58 | 0.35 | - | 2 x 20 | 2 x 22 | 2 x 45 | 2 x 70 | |
| | 65 | 0.35 | - | 2 x 15 | 2 x 16 | 2 x 40 | 2 x 60 | |
| Fluorescent lamps parallel compensated | 11 | 0.16 | 2 | 30 | 30 | 67 | 107 | |
| | 18 | 0.37 | 2 | 20 | 20 | 50 | 80 | |
| | 24 | 0.35 | 3 | 15 | 15 | 50 | 80 | |
| | 36 | 0.43 | 4 | 10 | 10 | 50 | 80 | |
| | 58 | 0.67 | 7 | 6 | 6 | 36 | 46 | |
| | 65 | 0.67 | 7 | 5 | 5 | 36 | 46 | |
| Fluorescent lamps with electronic ballast | 18 | 0.09 | - | 40 | 40 | 100 | 150 | |
| | 36 | 0.16 | - | 20 | 20 | 50 | 75 | |
| | 58 | 0.25 | - | 15 | 15 | 30 | 55 | |
| | 2 x 18 | 0.17 | - | 2 x 20 | 2 x 20 | 2 x 50 | 2 x 60 | |
| | 2 x 36 | 0.32 | - | 2 x 10 | 2 x 10 | 2 x 25 | 2 x 30 | |
| | 2 x 58 | 0.49 | - | 2 x 7 | 2 x 7 | 2 x 15 | 2 x 20 | |

| Type of Lamp | Wattage W | Current A | Capacitor μ F | Max. no of lamps per current path at 230 V/50 Hz and max. 60°C | | | |
|-------------------------------------------------------------------------------------------------------------------------|--------------|--------------|----------------------|----------------------------------------------------------------|------|------|------|
| | | | | HS20 | HS25 | HS40 | HS63 |
| Transformers for halogen low-voltage lamps | 20 | | - | 40 | 52 | 110 | 174 |
| | 50 | | - | 20 | 24 | 50 | 80 |
| | 75 | | - | 13 | 16 | 35 | 54 |
| | 100 | | - | 10 | 12 | 27 | 43 |
| | 150 | | - | 7 | 9 | 19 | 29 |
| | 200 | | - | 5 | 5 | 14 | 23 |
| | 300 | | - | 3 | 4 | 9 | 14 |
| High-pressure mercury vapour lamps, uncompensated e.g.: HQL, HPL | 50 | 0.61 | - | 16 | 18 | 38 | 55 |
| | 80 | 0.80 | - | 12 | 14 | 28 | 40 |
| | 125 | 1.15 | - | 8 | 9 | 20 | 28 |
| | 250 | 2.15 | - | 4 | 5 | 11 | 15 |
| | 400 | 3.25 | - | 3 | 4 | 7 | 10 |
| | 700 | 5.40 | - | 1 | 2 | 4 | 6 |
| | 1000 | 7.50 | - | 1 | 1 | 3 | 4 |
| High-pressure mercury vapour lamps, compensated e.g. HQL, HPL | 50 | 0.28 | 7 | 7 | 7 | 36 | 50 |
| | 80 | 0.41 | 8 | 5 | 5 | 31 | 44 |
| | 125 | 0.65 | 10 | 3 | 3 | 25 | 35 |
| | 250 | 1.22 | 18 | 2 | 2 | 14 | 19 |
| | 400 | 1.95 | 25 | 1 | 1 | 10 | 14 |
| | 700 | 3.45 | 45 | 1 | 1 | 6 | 8 |
| | 1000 | 4.80 | 60 | - | - | 4 | 6 |
| Metal halide lamps, uncompensated e.g. HQI, HPI, CDM | 35 | 0.53 | - | 22 | 24 | 57 | 65 |
| | 70 | 1 | - | 12 | 14 | 30 | 35 |
| | 150 | 1.8 | - | 6 | 8 | 17 | 18 |
| | 250 | 3 | - | 4 | 5 | 10 | 12 |
| | 400 | 3.5 | - | 3 | 4 | 8 | 10 |
| | 1000 | 9.5 | - | 1 | 1 | 3 | 4 |
| | 2000 | 16.5 | - | - | - | 2 | 2 |
| 400 V per pole | 2000 | 10.5 | - | - | - | 2 | 2 |
| 3500 | 18 | - | - | - | 1 | 1 | |
| Metal halide lamps, compensated e.g. HQI, HPI, CDM | 35 | 0.25 | 6 | 8 | 8 | 42 | 58 |
| | 70 | 0.45 | 12 | 4 | 4 | 21 | 29 |
| | 150 | 0.75 | 20 | 2 | 2 | 13 | 18 |
| | 250 | 1.5 | 33 | 1 | 1 | 9 | 11 |
| | 400 | 2.1 | 35 | 1 | 1 | 9 | 10 |
| | 1000 | 5.8 | 95 | - | - | 3 | 4 |
| | 2000 | 11.5 | 148 | - | - | 2 | 2 |
| 400 V per pole | 2000 | 6.6 | 58 | - | - | 3 | 4 |
| 3500 | 11.6 | 100 | - | - | 2 | 3 | |
| Metal halide lamps with electronic ballast (e.g. PCI) 50-125 x I _{nlamp} for 0.6 ms | 20 | 0.10 | integrated | 9 | 9 | 18 | 20 |
| | 35 | 0.20 | integrated | 6 | 6 | 11 | 13 |
| | 70 | 0.36 | integrated | 5 | 5 | 10 | 12 |
| | 150 | 0.70 | integrated | 4 | 4 | 8 | 10 |
| Low-pressure sodium vapour lamps, uncompensated | 35 | 1.5 | - | 7 | 9 | 22 | 30 |
| | 55 | 1.5 | - | 7 | 9 | 22 | 30 |
| | 90 | 2.4 | - | 4 | 6 | 13 | 19 |
| | 135 | 3.5 | - | 3 | 4 | 10 | 14 |
| | 150 | 3.3 | - | 3 | 4 | 10 | 14 |
| | 180 | 3.3 | - | 3 | 4 | 10 | 14 |
| | 200 | 3.3 | - | 3 | 4 | 10 | 14 |
| Low-pressure sodium vapour lamps, compensated | 35 | 0.31 | - | 3 | 3 | 15 | 18 |
| | 55 | 0.42 | - | 2 | 2 | 15 | 18 |
| | 90 | 0.63 | - | 1 | 1 | 10 | 12 |
| | 135 | 0.94 | - | 1 | 1 | 7 | 8 |
| | 150 | 1.00 | - | 1 | 1 | 8 | 9 |
| | 180 | 1.16 | - | 1 | 1 | 8 | 9 |
| | 200 | 1.32 | - | - | - | 10 | 12 |
| High-pressure sodium vapour lamps uncompensated | 150 | 1.8 | - | 5 | 6 | 15 | 22 |
| | 250 | 3 | - | 4 | 5 | 10 | 13 |
| | 330 | 3.7 | - | 3 | 4 | 8 | 10 |
| | 400 | 4.7 | - | 2 | 2 | 6 | 8 |
| | 1000 | 10.3 | - | 1 | 1 | 3 | 4 |
| High-pressure sodium vapour lamps compensated | 150 | 0.83 | - | 2 | 2 | 20 | 25 |
| | 250 | 1.50 | - | 1 | 1 | 12 | 15 |
| | 330 | 2.00 | - | 1 | 1 | 10 | 13 |
| | 400 | 2.40 | - | 1 | 1 | 8 | 12 |
| | 1000 | 6.30 | - | - | - | 4 | 6 |
| High-pressure sodium vapour lamps with electronic ballast (e.g. PCI) 50-125 x I _{nlamp} for 0.6 ms | 20 | 0.1 | integrated | 9 | 9 | 18 | 20 |
| | 35 | 0.21 | integrated | 6 | 6 | 11 | 13 |
| | 70 | 0.36 | integrated | 5 | 5 | 10 | 12 |
| | 150 | 0.70 | integrated | 4 | 4 | 8 | 10 |



Technical Data:

as per IEC 947-4-1, IEC 947-5-1, VDE 0660, EN 60947-4-1, EN 60947-5-1

| | Unit | HS20 | HS25 | HS40 | HS63 |
|-------------------------------------------------------------------------|---------------------|-------------------|-------------------|-------------------|-------------------|
| Main switch ^{1) 2) 3)} | | | | | |
| Rated insulation voltage U_i | V~ | 440 ⁴⁾ | 440 ⁴⁾ | 440 ⁴⁾ | 440 ⁴⁾ |
| Rated operating voltage U_e | V~ | 440 | 440 | 440 | 440 |
| Permissible number of switch operations AC1, AC3 | 1/h | 300 | 300 | 600 | 600 |
| Mech. service life | S x 10 ⁶ | 1 | 1 | 1 | 1 |
| Utilization category AC1 | | | | | |
| Rated operation current I_B (=I _{th}) open at 60°C | A | 20 | 25 | 40 | 63 |
| Service life, switching | S x 10 ⁶ | 0.1 | 0.1 | 0.1 | 0.1 |
| Lowest switching voltage | V/mA | 24/100 | 24/100 | 24/100 | 24/100 |
| Transient current strength 10s current | A | 72 | 72 | 216 | 240 |
| Dissipated energy per pole at $I_B/AC1$ | W | 2 | 2 | 3 | 7 |
| Utilization category AC3 | | | | | |
| Switching of 3-phase AC motors | A | - | 9 | 27 | 30 |
| Rated operating current I_B (=I _{th}) open at 60°C | | | | | |
| Rating of 3-phase AC motors | KW | - | 2.2 | 7.5 | 8 |
| 50-60 Hz | 230-240 V | 1.1 ⁵⁾ | 2.5 | 8 | 8.5 |
| | 380-415 V | - | 4 | 12.5 | 15 |
| Contact maker service life | S x 10 ⁶ | - | 0.15 | 0.15 | 0.15 |
| Capacity of trip coils | | | | | |
| AC-operated energizing | VA | 7 - 9 | 20 - 25 | 33 - 45 | 33 - 45 |
| AC-operated holding | VA | 2.2 - 4.2 | 4 - 6 | 7 | 7 |
| Operating range of trip coils in multiples of U_G (-40°C to +40°C) | | 0.85 - 1.1 | 0.85 - 1.1 | 0.85 - 1.1 | 0.85 - 1.1 |
| Short-circuit protection | | | | | |
| Fuse coordination type "1" gL (gG) | A | 35 | 35 | 63 | 80 |
| Rated short-circuit current "I _n " | kA | 3 | 3 | 3 | 3 |
| Rated short-circuit current "I _q " | kA | 3 | 10 | 10 | 10 |
| Switching times at control voltage $U_S \pm 10\%$ | | | | | |
| closing delay | ms | 7 - 16 | 9 - 15 | 11 - 15 | 11 - 15 |
| opening delay | ms | 6 - 12 | 4 - 8 | 6 - 13 | 6 - 13 |
| arc duration | ms | 10 - 15 | 10 - 15 | 10 - 15 | 10 - 15 |
| Terminal cross-sections | | | | | |
| Main conductors single- or multicore | mm ² | 1.5 - 10 | 1.5 - 10 | 2.5 - 25 | 2.5 - 25 |
| fine-stranded | mm ² | 1.5 - 6 | 1.5 - 6 | 2.5 - 16 | 2.5 - 16 |
| fine-stranded with end sleeve | mm ² | 1.5 - 6 | 1.5 - 6 | 2.5 - 16 | 2.5 - 16 |
| number of connectable wires per terminal | | 1 | 1 | 1 | 1 |
| Coil single- or multicore | mm ² | 0.75 - 2.5 | 0.75 - 2.5 | 0.75 - 2.5 | 0.75 - 2.5 |
| fine-stranded | mm ² | 0.5 - 2.5 | 0.5 - 2.5 | 0.5 - 2.5 | 0.5 - 2.5 |
| fine-stranded with end sleeve | mm ² | 0.5 - 1.5 | 0.5 - 1.5 | 0.5 - 1.5 | 0.5 - 1.5 |
| number of connectable wires per terminal | | 1 | 1 | 1 | 1 |

1) Rated frequency 50 / 60 Hz • 2) Max. occurring switching overvoltages < 4 kV • 3) Rated operating mode: continuous operation

4) Applies to: systems with earthed neutral, overvoltage categories I to III, contamination level 3 (ind. standard): U_{imp} : 4 kV • 5) AC7b motor 2-pole 230 V / 1.1 kW

Doepke UK Ltd

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