



- Long electrical and mechanical life
- High switching frequency
- Silent operation
- No electric arc
- In compliance with EN60335 standard.

Solid state relays

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MINIATURE, SINGLE-PHASE

- Operating current up to 25A
- Operating voltage up to 280VAC
- Faston terminals
- Zero crossing switching
- cURus and VDE certified
- IP00 protection
- Screw fixing.



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HOCKEY PUCK, SINGLE-PHASE

- Operating current up to 130A
- Operating voltage up to 600VAC
- Screw terminals
- Zero crossing switching
- cURus, CSA and VDE certified
- IP20 protection
- Status indicator LED.



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HOCKEY PUCK, TWO-PHASE

- Operating current up to 50A
- Operating voltage up to 600VAC
- Screw terminals
- Zero crossing switching
- cURus, CSA and VDE certified
- IP20 protection
- Status indicator LED.



Page 7-3

COMPLETE WITH HEATSINK, SINGLE-PHASE

- Ready to use
- Operating current up to 60A
- Operating voltage up to 600VAC
- Zero crossing switching
- cULus certified
- IP20 protection
- Status indicator LED
- Screw or on 35mm DIN rail.



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**COMPLETE WITH HEATSINK, 3-PHASE,
(2 CONTROLLED)**

- Ready to use
- Operating current up to 60A
- Operating voltage up to 600VAC
- Zero crossing switching
- cULus certified
- IP20 protection
- Status indicator LED
- 35mm DIN rail.



Page 7-3

**COMPLETE WITH HEATSINK, 3-PHASE
(3 CONTROLLED)**

- Ready to use
- Operating current up to 48A
- Operating voltage up to 600VAC
- Zero crossing switching
- cULus certified
- IP20 protection
- Status indicator LED
- Screw or on 35mm DIN rail.

Miniature and hockey puck, single-phase



HS1A2NN025D024

new



HS1B...

| Order code | Load operating voltage | Ie AC-51 at ≤40°C | Control voltage | Type of load | Qty per pkg |
|------------|------------------------|-------------------|-----------------|--------------|-------------|
| | [VAC] | [A] | [V] | | n° |

Miniature, Faston terminals.

Faston: load 6.3x0.8mm - control 4.8x0.8mm.

| | | | | | |
|-------------------------------|----------|-----|----------------|------------------------|---|
| HS1A2NN025D024 | 12...280 | 25 | 4...30VDC | Resistive | 4 |
| Hockey puck, screw terminals. | | | | | |
| HS1B2NT025D024 | 12...280 | 25 | 3...32VDC | Resistive | 1 |
| HS1B2NT025E230 | 12...280 | 25 | 18...280VAC/DC | | 1 |
| HS1B5NV040D024 | 24...510 | 40 | 3.5...32VDC | Resistive or inductive | 1 |
| HS1B5NV040E230 | 24...510 | 40 | 20...265VAC/DC | | 1 |
| HS1B6NT040D024 | 24...600 | 40 | 3.5...32VDC | Resistive | 1 |
| HS1B6NT040E230 | 24...600 | 40 | 18...280VAC/DC | | 1 |
| HS1B6NN050D024 | 24...600 | 50 | 3.5...32VDC | | 1 |
| HS1B5NV060D024 | 24...510 | 60 | 3.5...32VDC | Resistive or inductive | 1 |
| HS1B5NV060E230 | 24...510 | 60 | 20...265VAC/DC | | 1 |
| HS1B6NT060D024 | 24...600 | 60 | 3.5...32VDC | Resistive | 1 |
| HS1B6NT060E230 | 24...600 | 60 | 18...280VAC/DC | | 1 |
| HS1B6NT090D024 | 24...600 | 90 | 3.5...32VDC | | 1 |
| HS1B6NT090E230 | 24...600 | 90 | 18...280VAC/DC | | 1 |
| HS1B5NV130D024 | 24...510 | 130 | 3.5...32VDC | Resistive or inductive | 1 |
| HS1B5NV130E230 | 24...510 | 130 | 20...265VAC/DC | | 1 |

General characteristics

Solid state relays (SSRs) can offer significant advantages in electrical control. SSRs have no moving parts, resulting in a very high electrical life and silent operation. SSRs also have fast switching speed and can sustain a very high switching frequency. SSRs are also resistant to vibration and shocks. Furthermore, they do not generate electric arc during the operation. Their primary use is for controlling resistive loads, such as heating elements, but can also operate small motors and other types of inductive loads. The HS... series can control loads up to 130A. Overall, SSRs offer a solid, efficient and durable solution for precise and reliable electrical control.

Operational characteristics

- Control current:
 - HS1A...: <29mA
 - HS1B...: <13mA
 - HS2B...: <24mA
- Switching mode: zero crossing
- Output protection: varistor, TVS or none (V or T or N as 7th digit in the code)
- Status indicator: LED on front (except HS1A...).

Certifications and compliance

Certifications obtained: see table below.
Compliant with standards: IEC/EN/BS 60947-4-3, IEC/EN/BS 60947-4-2, IEC/EN/BS 62314, IEC/EN/BS 6335-1.

| | cURus | CSA | VDE |
|----------------|-------|-----|-----|
| HS1A2NN025D024 | ● | — | ● |
| HS1B2NT025D024 | ● | ● | ● |
| HS1B2NT025E230 | ● | — | ● |
| HS1B5NV040D024 | ● | ● | ● |
| HS1B5NV040E230 | ● | ● | ● |
| HS1B6NT040D024 | ● | ● | ● |
| HS1B6NT040E230 | ● | — | ● |
| HS1B6NN050D024 | ● | ● | ● |
| HS1B5NV060D024 | ● | ● | ● |
| HS1B5NV060E230 | ● | ● | ● |
| HS1B6NT060D024 | ● | ● | ● |
| HS1B6NT060E230 | ● | — | ● |
| HS1B6NT090D024 | ● | ● | ● |
| HS1B6NT090E230 | ● | — | ● |
| HS1B5NV130D024 | ● | ● | ● |
| HS1B5NV130E230 | ● | ● | ● |
| HS2B2NN025D024 | ● | ● | ● |
| HS2B6NN050D024 | ● | ● | ● |
| HS2B6NN051D024 | ● | ● | ● |

Hockey puck, two-phase

new



HS2B...

| Order code | Load operating voltage | Ie AC-51 at ≤40°C | Control voltage | Type of load | Qty per pkg |
|------------|------------------------|-------------------|-----------------|--------------|-------------|
| | [VAC] | [A] | [V] | | no. |

Hockey puck, Faston terminals.

| | | | | | |
|-------------------------------|----------|------|------------|-----------|---|
| HS2B2NN025D024 | 12...280 | 25 | 3...32VDC | Resistive | 1 |
| Hockey puck, screw terminals. | | | | | |
| HS2B6NN050D024 | 24...600 | 50 ② | 10...30VDC | Resistive | 1 |
| HS2B6NN051D024 | 24...600 | 50 ③ | 10...30VDC | | 1 |

① Ratings valid with correct heatsink.

② I_t 2800A2s.

③ I_t 7200A2s.

Complete with heatsink, single-phase



HS1C...

new

| Order code | Load operating voltage | I _e AC-51 at ≤40°C | Control voltage | Type of load | Qty per pkg |
|------------|------------------------|-------------------------------|-----------------|--------------|-------------|
| | [VAC] | [A] | [V] | | n° |

Complete with heatsink, ready to use, screw terminals.

| | | | | | |
|----------------|----------|----|-------------|------------------------|---|
| HS1C2HV020D024 | 12...275 | 20 | 3...32VDC | Resistive or inductive | 1 |
| HS1C6HV020D024 | 48...600 | 20 | 4...32VDC | | 1 |
| HS1C6HV020A230 | 48...600 | 20 | 90...280VAC | | 1 |
| HS1C2HV025D024 | 12...275 | 25 | 3...32VDC | | 1 |
| HS1C6HV025D024 | 48...600 | 25 | 4...32VDC | | 1 |
| HS1C6HV025A230 | 48...600 | 25 | 90...280VAC | | 1 |
| HS1C2HV030D024 | 12...275 | 30 | 3...32VDC | | 1 |
| HS1C6HV030D024 | 48...600 | 30 | 4...32VDC | | 1 |
| HS1C6HV030A230 | 48...600 | 30 | 90...280VAC | | 1 |
| HS1C6HV040D024 | 48...600 | 40 | 4...32VDC | | 1 |
| HS1C6HV040A230 | 48...600 | 40 | 90...280VAC | | 1 |
| HS1C6HV060D024 | 48...600 | 60 | 4...32VDC | | 1 |
| HS1C6HV060A230 | 48...600 | 60 | 90...280VAC | | 1 |

General characteristics

Solid state relays (SSRs) can offer significant advantages in electrical control. SSRs have no moving parts, resulting in a very high electrical life and silent operation. SSRs also have fast switching speed and can sustain a very high switching frequency. SSRs are also resistant to vibration and shocks. Furthermore, they do not generate electric arc during the operation. Their primary use is for controlling resistive loads, such as heating elements, but can also operate small motors and other types of inductive loads. HS1...H... series can control loads up to 60A. Overall, SSRs offer a solid, efficient, and durable solution for precise and reliable. HS1... versions have heatsink factory mounted. They are ready to use and fast mounting on DIN rail.

Operational characteristics

- Control current:
 - HS1...D...: <12mA
 - HS1...A...: <22mA
 - HS2...D...: <21mA
 - HS2...A...: <50mA
 - HS3...D...: <27mA
 - HS3...A...: <50mA
- Input-output insulation: 5kV
- Switching mode: zero crossing
- Output protection: varistor
- Status indicator: LED on front.

Certifications and compliance

Certifications obtained: cULus.
Compliant with standards: IEC/EN/BS 62314; IEC/EN/BS 61000-6-2; IEC/EN/BS 61000-6-3.

Complete with heatsink, three-phase (2 controlled)



HS2...

new

| Order code | Load operating voltage | I _e AC-51 at ≤40°C | Control voltage | Type of load | Qty per pkg |
|------------|------------------------|-------------------------------|-----------------|--------------|-------------|
| | [VAC] | [A] | [V] | | n° |

Complete with heatsink, ready to use, screw terminals.

| | | | | | |
|----------------|----------|----|-------------|------------------------|---|
| HS2C6HV015D024 | 48...600 | 15 | 4...32VDC | Resistive or inductive | 1 |
| HS2C6HV015A230 | 48...600 | 15 | 90...280VAC | | 1 |
| HS2C6HV030D024 | 48...600 | 30 | 4...32VDC | | 1 |
| HS2C6HV030A230 | 48...600 | 30 | 90...280VAC | | 1 |
| HS2C6HV060D024 | 48...600 | 60 | 4...32VDC | | 1 |
| HS2C6HV060A230 | 48...600 | 60 | 90...280VAC | | 1 |

Complete with heatsink, three-phase (3 controlled)



HS3C...

new

| Order code | Load operating voltage | I _e AC-51 at ≤40°C | Control voltage | Type of load | Qty per pkg |
|------------|------------------------|-------------------------------|-----------------|--------------|-------------|
| | [VAC] | [A] | [V] | | n° |

Complete with heatsink, ready to use, screw terminals.

| | | | | | |
|----------------|----------|----|-------------|------------------------|---|
| HS3C6HV020D024 | 48...600 | 20 | 4...32VDC | Resistive or inductive | 1 |
| HS3C6HV020A230 | 48...600 | 20 | 90...280VAC | | 1 |
| HS3C6HV025D024 | 48...600 | 25 | 4...32VDC | | 1 |
| HS3C6HV025A230 | 48...600 | 25 | 90...280VAC | | 1 |
| HS3C6HV040D024 | 48...600 | 40 | 4...32VDC | | 1 |
| HS3C6HV040A230 | 48...600 | 40 | 90...280VAC | | 1 |

Complete with heatsink, ready to use, screw terminals, high I²t.

| | | | | | |
|----------------|----------|----|---------------|------------------------|---|
| HS3D5HV024E230 | 24...520 | 24 | 24...255VACDC | Resistive or inductive | 4 |
| HS3D5HV048E230 | 24...520 | 48 | 24...255VACDC | | 1 |



HS3D...

Accessories



HSBXH1



HSBXP...



HSBX80



HSCXM...

new

| Order code | Characteristics | Qty per pkg n° | Wt [kg] |
|--|---|-------------------|------------|
| Heatsinks for HS1B... and HS2B... solid state relays. | | | |
| HSBXH1 | Heatsink 2.2K/W for one HS1B... or HS2B... solid state relay | 12 | 0.290 |
| HSBXH2 | Heatsink 1.2K/W for one or two HS1B... or HS2B... solid state relay | 2 | 0.600 |
| HSBXH3 | Heatsink 0.9K/W for one or two HS1B... or HS2B... solid state relay | 1 | 1.400 |
| HSBXH4D024 | Heatsink 0.3K/W for one HS1B... or HS2B... solid state relay; complete with fan 24VDC | 1 | 1.720 |
| HSBXH5A230 | Heatsink 0.3K/W for one or two HS1B... or HS2B... solid state relay; complete with fan 230VAC | 1 | 1.720 |
| Thermal pads for HS1B... and HS2B... solid state relays. | | | |
| HSBXP0050 | Adhesive thermal pad – 50 pcs | 1 | 0.050 |
| HSBXP0100 | Adhesive thermal pad – 100 pcs | 1 | 0.100 |
| HSBXP1000 | Adhesive thermal pad – 1000 pcs | 1 | 1.200 |
| Fixing element for HS1B... solid state relays. | | | |
| HSBX80 | DIN rail adapter. 6K/W dissipation | 1 | 0.080 |
| Current monitoring modules for HS1C... solid state relays. | | | |
| HSCXM1 | Load current monitoring. Supply 24VDC | 1 | 0.090 |
| HSCXM2 | Load current monitoring with Modbus-RTU over RS485 communication. Supply 24VDC | 1 | 0.090 |
| HSCXM3 | Temperature controller and load current monitoring with Modbus-RTU over RS485 communication. Supply 24VDC | 1 | 0.090 |

General characteristics

HEATSINKS FOR HS1B... AND HS2B... SOLID STATE RELAYS

The heatsinks HSBXH1, HSBXH2 and HSBXH3 can be fixed by screw or on DIN rail.

HSBXH4D024 and HSBXH5A230 are for mounting on DIN rail only.

All the heatsinks contains the screws to fix the solid state relay.

THERMAL PADS FOR HS1B... AND HS2B... SOLID STATE RELAYS

The thermal pad mounting on the solid state relays is recommended to ensure effective heat dissipation, to prevent overheating and to enhance the overall reliability and performance.

CURRENT MONITORING MODULES FOR HS1C... SOLID STATE RELAYS

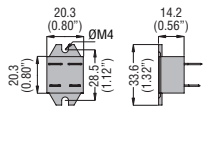
The accessory snaps onto the front of the HS1C... solid state relay.

The current monitor modules have a button to set the rated current of the load. In case the current is +10% or -10% of the set threshold, an alarm will be generated. This alarm, for the version with communication, will be also transmitted via Modbus.

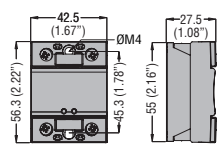
Three LED on the front indicate the working status.

Current measuring range: 2A...40A.

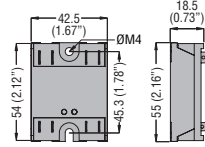
HS1A2NN025D024



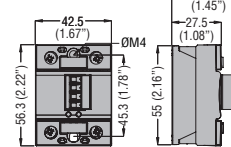
HS1B...



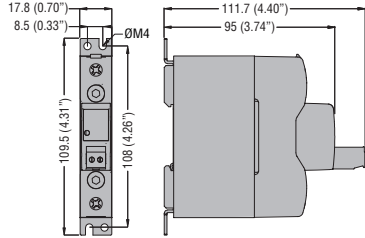
HS2B2NN025D024



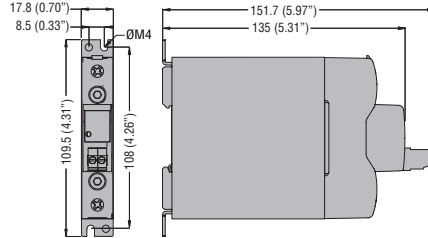
HS2B3...



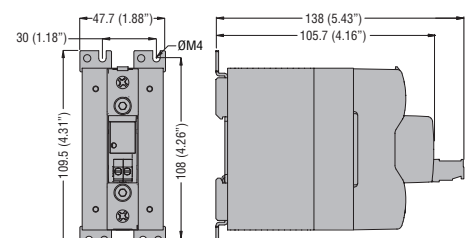
HS1C...020... - HS1C...025...



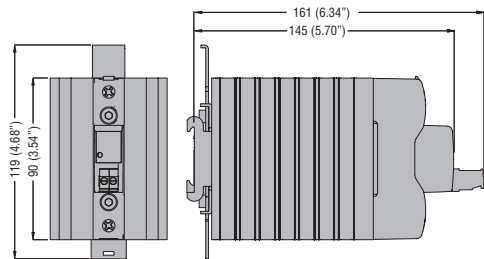
HS1C...030...



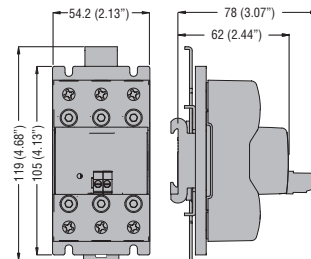
HS1C...040...



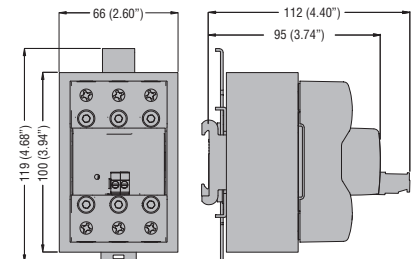
HS1C...060...



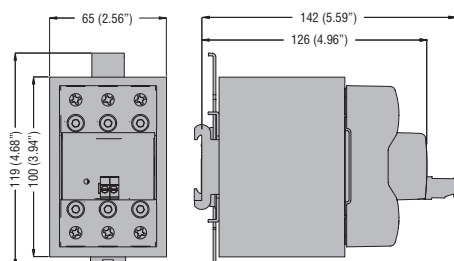
HS2C...015...



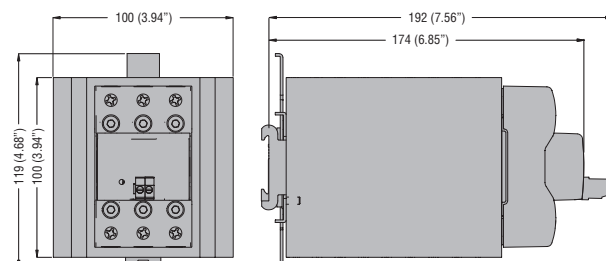
HS2C...030... - HS3C...020...



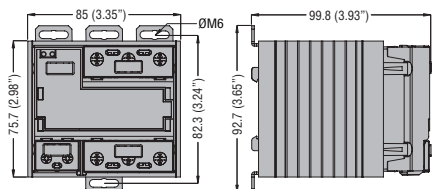
HS3C...025...



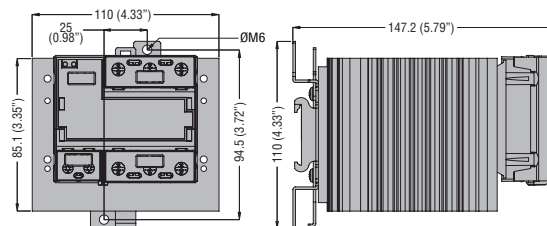
HS2C...060... - HS3C...040...



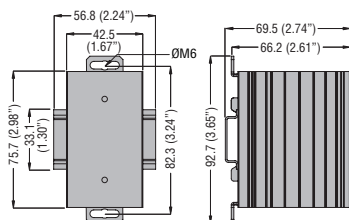
HS3D...024



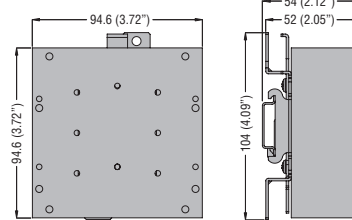
HS3D...048



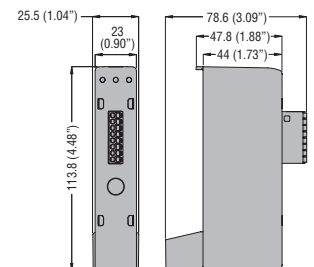
HSBXH1



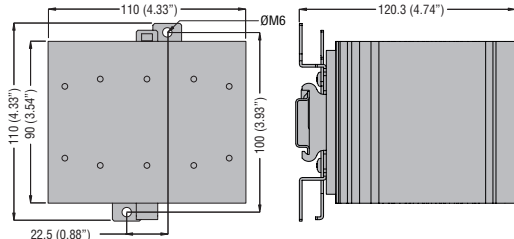
HSBXH2



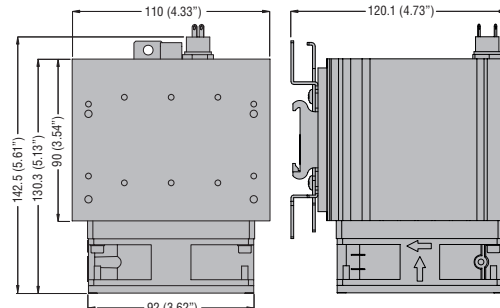
HSCXM...



HSBXH3



HSBXH4



7 Solid state relays

Technical characteristics

| TYPE | | HS1A2NN 025D024 | HS1B2NT 025D024 | HS1B2NT 025E230 | HS1B5NV 040D024 | HS1B5NV 040E230 | HS1B6NT 040D024 | HS1B6NT 040E230 | HS1B6NN 050D024 | HS1B5NV 060D024 |
|---|-------|--------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| MODEL | | Single-phase | | | | | | | | |
| INPUT CHARACTERISTICS | | | | | | | | | | |
| Control voltage | | 4...30VDC | 3...32VDC | 18...280VAC/DC | 3.5...32VDC | 20...265VAC/DC | 3.5...32VDC | 18...280VAC/DC | 3.5...32VDC | 3.5...32VDC |
| Operating voltage limits | | | | | | | | | | |
| pick-up | V | 4 | 3 | 18 | 3.5 | 95 | 3.5 | 18 | 3.5 | 3.5 |
| drop-out | V | 1 | 1 | 8 | 2 | 5 | 2 | 8 | 2 | 2 |
| Input current at min...max voltage | mA | 3...29 | 10...13 | 4.5...6 | 10...13 | 5...10 | 10...13 | 4.5...6 | 10...13 | 10...13 |
| OPERATING TIMES | | | | | | | | | | |
| switching -on | | Half cycle max | | | | | | | | |
| switching -off | | Half cycle max | | | | | | | | |
| OUTPUT CHARACTERISTICS | | | | | | | | | | |
| Switching mode | | Zero crossing switching | | | | | | | | |
| Rated operating voltage | VAC | 12...280 | 12...280 | 12...280 | 24...510 | 24...510 | 24...600 | 24...600 | 24...600 | 24...510 |
| Blocking voltage | V | 600 | 600 | 600 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 |
| Operational frequency (min...max) | Hz | 45...65 | | | | | | | | |
| Rated operating current AC-51 (resistive load) at 40°C ③ | A | 25 | 25 | 25 | 40 | 40 | 40 | 40 | 50 | 60 |
| Rated operating current AC-51 (resistive load) at 55°C ③ | A | 22 | 20 | 20 | 35 | 35 | 35 | 35 | 42 | 52 |
| Heatsink for use at 40°C and 55°C at rated current AC-51 | K/W | ≤1.2 | ≤2.2 | ≤2.2 | ≤0.9 | ≤0.9 | ≤0.9 | ≤0.9 | ≤0.9 | ≤0.55 |
| Rated operating current AC-53 (motor load) at 40°C | A | 7 | – | – | 7 | 7 | – | – | – | 12 |
| Min. operational current | A | 0.005 | 0.05 | | | | | | | |
| Input - Output isolation | V | 4000 | 4000 | | | | | | | |
| Input - Output to metal base | V | 2500 | 4000 | | | | | | | |
| Output protection type | | – | TVS | | VDR | | TVS | – | VDR | |
| I²t | A²s | 340 | 600 | | 1250 | | 1680 | 2800 | | |
| TERMINAL CHARACTERISTICS | | | | | | | | | | |
| Control terminals | Type | Faston 4.8x0.8 | | | | Screw M4 | | | | |
| Tool | Type | – | | | | PZ 2 | | | | |
| Tightening torque | Nm | – | | | | 1.2...2 | | | | |
| | lb.in | – | | | | 10.6...17.7 | | | | |
| Conductor section connectable (control terminals) with 1 or 2 wires min...max | n° | 16...14 (Faston lug) | | | | 18...14 | | | | |
| Flexible w/o lug | mm² | – | | | | 0.75...2.5 | | | | |
| Flexible c/w insulated spade lug | mm² | 0.75...6 (Faston lug) | | | | 0.75...2.5 | | | | |
| Load terminals | Type | Faston 6.3x0.8 | | | | Screw M5 | | | | |
| Tool | Type | – | | | | PZ 2 | | | | |
| Tightening torque | Nm | – | | | | 2...3 | | | | |
| Load terminals (min...max) | lb.in | – | | | | 20.4 | | | | |
| Conductor section connectable (load terminals) with 1 or 2 wires min...max | n° | 16...10 (Faston lug) | | 16...10 | | | 16...10② | | | |
| Flexible w/o lug | mm² | – | | – | | | 1.5...6 | | | |
| Flexible c/w insulated lug | mm² | 0.75...6 (Faston lug) | | 1.5...6 | | | 1.5...6① | | | |
| AMBIENT CONDITIONS | | | | | | | | | | |
| Operating temperature | °C | –40...+90 | | | | | | | –55...+90 | |
| Storage temperature | °C | –40...+100 | | | | | | | –55...+125 | |
| Operating position allowable | | Any | | | | | | | | |
| Fixing | | Screw | | | | | | | | |

- ① Wires up to 50mm² can be connected with specific spade lugs or ring lugs. Lug width max 12.6mm.
- ② Wires up to AWG0 can be connected with specific spade lugs or ring lugs. Lug width max 12.6mm.
- ③ Ratings valid with proper heatsink.
- ④ 110A max with 0.3K/W heatsink.

7 Solid state relays

Technical characteristics

| HS1B5NV 060E230 | HS1B6NT 060D024 | HS1B6NT 060E230 | HS1B6NT 090D024 | HS1B6NT 090E230 | HS1B5NV 130D024 | HS1B5NV 130E230 | HS2B2NN 025D024 | HS2B6NN 050D024 | HS2B6NN 051D024 | |
|-------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------------|--------------------|--------------------|--|
| Single-phase | | | | | | | Two-phase | | | |
| 20...265VAC/DC | 3.5...32VDC | 18...280VAC/DC | 3.5...32VDC | 18...280VAC/DC | 3.5...32VDC | 20...265VAC/DC | 3...32VDC | 10...30VDC | 10...30VDC | |
| 20VAC-18VDC | 3.5 | 18 | 3.5 | 18 | 3.5 | 20VAC-18VDC | 3 | 10 | 10 | |
| 5 | 2 | 8 | 2 | 8 | 2 | 5 | 2 | 2 | 2 | |
| 5...10 | 10...13 | 4.5...6 | 10...13 | 4.5...6 | 10...13 | 5...10 | 10...13 | 6...24 | 6...24 | |
| Half cycle max | | | | | | | | | | |
| Half cycle max | | | | | | | | | | |
| Zero crossing switching | | | | | | | | | | |
| 24...510 | 24...600 | 24...600 | 24...600 | 24...600 | 24...510 | 24...510 | 12...280 | 24...600 | 24...600 | |
| 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 600 | 1200 | 1200 | |
| 45...65 | | | | | | | | | | |
| 60 | 60 | 60 | 90 | 90 | 130 | 130 | 25 | 50 | 50 | |
| 52 | 52 | 52 | 80 | 80 | 105 | 105 | 21 | 37 | 50 | |
| ≤0.55 | ≤0.55 | ≤0.55 | ≤0.3 | ≤0.3 | ≤0.3 | ≤0.3 | ≤0.3 | ≤0.3 | ≤0.3 | |
| 12 | - | - | - | - | 32 | 32 | - | - | - | |
| 0.05 | | | | | | | | | | |
| 4000 | | | | | | | | | | |
| 4000 | | | | | | | 2500 | 4000 | | |
| VDR | TVS | | | | VDR | | - | - | - | |
| 2800 | 7200 | | | | 22000 | | 340 | 2800 | 7200 | |
| Screw M4 | | | | | | | Faston 4.8x0.8 | Screw | | |
| PZ 2 | | | | | | | - | Blade 3.5mm | | |
| 1.2...2 | | | | | | | - | 0.5Nm | | |
| 10.6...17.7 | | | | | | | - | 4.5 | | |
| 18...14 | | | | | | | 16...14 (Faston lug) | 28...12 | | |
| 0.75...2.5 | | | | | | | - | 0.75...2.5 | | |
| 0.75...2.5 | | | | | | | 0.75...6 (Faston lug) | 0.75...2.5 | | |
| Screw M5 | | | | | | | Faston 6.3x0.8 | Screw M5 | | |
| PZ 2 | | | | | | | - | PZ 2 | | |
| 2...3 | | | | | | | - | 2...3 | | |
| 20.4 | | | | | | | - | 20.4 | | |
| 16...10 | | | | | | | 16...10 (Faston lug) | 16...10 | | |
| 1.5...6 | | | | | | | - | 1.5...6 | | |
| 1.5...6 | | | | | | | 0.75...6 (Faston lug) | 1.5...6 | | |
| -55...+90 | | | | | | | -40...+90 | -55...+90 | | |
| -55...+125 | | | | | | | -40...+100 | -55...+125 | | |
| Any | | | | | | | | | | |
| Screw | | | | | | | | | | |

7 Solid state relays

Technical characteristics

| TYPE | | HS1C2HV 020D024 | HS1C6HV 020D024 | HS1C6HV 020A230 | HS1C2HV 025D024 | HS1C6HV 025D024 | HS1C6HV 025A230 | HS1C2HV 030D024 | HS1C6HV 030D024 | HS1C6HV 030A230 | HS1C6HV 040D024 | HS1C6HV 040A230 | |
|--|------------------|---------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----|
| MODEL | | Single-phase | | | | | | | | | | | |
| INPUT CHARACTERISTICS | | | | | | | | | | | | | |
| Control Voltage | | 3-32VDC | 4-32VDC | 90-280VAC | 3-32VDC | 4-32VDC | 90-280VAC | 3-32VDC | 4-32VDC | 90-280VAC | 4-32VDC | 90-280VAC | |
| Operating voltage limits | pick-up | V | 3 | 4 | 45 | 3 | 4 | 45 | 3 | 4 | 45 | 4 | 45 |
| | drop-out | V | 2 | 2 | 20 | 2 | 2 | 20 | 2 | 2 | 20 | 2 | 20 |
| Input current at min...max voltage | mA | 4...12 | 8...12 | 5...22 | 4...12 | 8...12 | 5...22 | 4...12 | 8...12 | 5...22 | 8...12 | 5...22 | |
| OPERATING TIMES | | | | | | | | | | | | | |
| switching -on | | Half cycle max | | | | | | | | | | | |
| switching -off | | Half cycle max | | | | | | | | | | | |
| OUTPUT CHARACTERISTICS | | | | | | | | | | | | | |
| Switching mode | | Zero crossing switching | | | | | | | | | | | |
| Rated operating voltage | VAC | 12...275VAC | 48...600VAC | 12...275VAC | 48...600VAC | 12...275VAC | 48...600VAC | 12...275VAC | 48...600VAC | 12...275VAC | 48...600VAC | 48...600VAC | |
| Blocking Voltage | V | 600 | 1200 | 600 | 1200 | 600 | 1200 | 600 | 1200 | 600 | 1200 | 1200 | |
| Operational frequency (min...max) | Hz | 45...65 | | | | | | | | | | | |
| AC-51 rated operating current (resistive load) at 40°C | A | 20 | | | 25 | | | 30 | | | 40 | | |
| AC-51 rated operating current (resistive load) at 55°C | A | 17 | | | 22 | | | 25 | | | 32 | | |
| AC-53 rated operating current (motor load) at 40°C | A | - | | | | | | | | | | | |
| Min. operational current | A | 0.165 | | | | | | | | | | | |
| Input - Output isolation | V | 5000 | | | | | | | | | | | |
| Input - Output to metal base | V | 5000 | | | | | | | | | | | |
| Output protection type | | VDR | | | | | | | | | | | |
| I ² t | A ² s | 792 | | | | 1350 | | | | | | | |
| TERMINAL CHARACTERISTICS | | | | | | | | | | | | | |
| Control terminals | Type | Screw | | | | | | | | | | | |
| Tool | Type | Blade screwdriver 3.5mm | | | | | | | | | | | |
| Tightening torque | Nm | 0.5Nm | | | | | | | | | | | |
| | lb.in | 4.5 | | | | | | | | | | | |
| Conductor section connectable (control terminals) min...max | | | | | | | | | | | | | |
| AWG stranded | n° | 28...12 | | | | | | | | | | | |
| Flexible w/o lug | mm ² | 0.75...2.5 | | | | | | | | | | | |
| Flexible c/w insulated spade lug | mm ² | 0.75...2.5 | | | | | | | | | | | |
| Load terminals | Type | Screw | | | | | | | | | | | |
| Tool | Type | PH2 | | | | | | | | | | | |
| Tightening torque | Nm | 1.5 | | | | | | | | | | | |
| Load terminals (Min...Max) | lb.in | 13.3 | | | | | | | | | | | |
| Conductor section connectable (load terminals) with 1 or 2 wires min...max | | | | | | | | | | | | | |
| AWG stranded | n° | 18...10 | | | | | | | | | | | |
| Flexible w/o lug | mm ² | 1...6 | | | | | | | | | | | |
| Flexible c/w insulated lug | mm ² | 1...16 | | | | | | | | | | | |
| AMBIENT CONDITIONS | | | | | | | | | | | | | |
| Operating temperature | °C | -40...+80°C | | | | | | | | | | | |
| Storage temperature | °C | -40...+130°C | | | | | | | | | | | |
| Operating position allowable | | On vertical plane | | | | | | | | | | | |
| Fixing | | Screw or on 35mm DIN rail | | | | | | | | | | | |

- ① Wires up to 50mm² can be connected with specific spade lugs or ring lugs. Lug width max 12.6mm.
- ② Wires up to AWG0 can be connected with specific spade lugs or ring lugs. Lug width max 12.6mm.

7 Solid state relays

Technical characteristics

| HS1C6HV 060D024 | HS1C6HV 060A230 | HS2C6HV 015D024 | HS2C6HV 015A230 | HS2C6HV 030D024 | HS2C6HV 030A230 | HS2C6HV 060D024 | HS2C6HV 060A230 | HS3C6HV 020D024 | HS3C6HV 020A230 | HS3C6HV 025D024 | HS3C6HV 025A230 | HS3C6HV 040D024 | HS3C6HV 040A230 | HS3D5HV 024E230 | HS3D5HV 048E230 |
|---------------------------|--------------------|----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Single-phase | | Three-phase (2 controlled) | | | | | | Three-phase (3 controlled) | | | | | | | |
| 4-32VDC | 90-280VAC | 4-32VDC | 90-280VAC | 4-32VDC | 90-280VAC | 4-32VDC | 90-280VAC | 4-32VDC | 90-280VAC | 4-32VDC | 90-280VAC | 4-32VDC | 90-280VAC | 24...255 VAC/DC | 24...255 VAC/DC |
| 4 | 45 | 4 | 90 | 4 | 90 | 4 | 90 | 4 | 90 | 4 | 90 | 4 | 90 | 24 | 24 |
| 2 | 20 | 2 | 20 | 2 | 20 | 2 | 20 | 2 | 20 | 2 | 20 | 2 | 20 | 2 | 2 |
| 8...12 | 5...22 | 13...21 | 23...50 | 13...21 | 23...50 | 13...21 | 23...50 | 17...27 | 23...50 | 17...27 | 23...50 | 17...27 | 23...50 | 4.5...6 | 4.5...6 |
| Half cycle max | | | | | | | | | | | | | | | |
| Half cycle max | | | | | | | | | | | | | | | |
| Zero crossing switching | | | | | | | | | | | | | | | |
| 48...600VAC | | | | | | | | | | | | | | 24...520VAC | |
| 1200 | | | | | | | | | | | | | | 1600 | |
| 45...65 | | | | | | | | | | | | | | | |
| 60 | 60 | 15 (UL 12) | 15 (UL 12) | 30 | 30 | 60 (UL 50) | 60 (UL 50) | 20 | 20 | 25 | 25 | 40 | 40 | 24 | 48 |
| 40 | 40 | 12 (UL 10) | 12 (UL 10) | 25 | 25 | 48 (UL 40) | 48 (UL 40) | 17 | 17 | 20 | 20 | 32 | 32 | 18 | 38 |
| - | - | 7 | 7 | 13.5 | 13.5 | 15 | 15 | 12.5 | 12.5 | 13.5 | 13.5 | 15 | 15 | 12 | 32 |
| 0.165 | 0.165 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | - | - | - | - | - | - | 0.05 | |
| 5000 | | | | | | | | | | | | | | 4000 | |
| 5000 | | | | | | | | | | | | | | 4000 | |
| VDR | | | | | | | | | | | | | | VDR | |
| 1350 | | 1404 | | | | | | | | | | | | 2800 | 22000 |
| Screw | | | | | | | | | | | | | | Screw M4 | |
| Blade screwdriver 3.5mm | | | | | | | | | | | | | | PZ 2 | |
| 0.5Nm | | | | | | | | | | | | | | 1.2...2 | |
| 4.5 | | | | | | | | | | | | | | 10.6...17.7 | |
| | | | | | | | | | | | | | | 18...14 | |
| 28...12 | | | | | | | | | | | | | | | |
| 0.75...2.5 | | | | | | | | | | | | | | 0.75...2.5 | |
| 0.75...2.5 | | | | | | | | | | | | | | 0.75...2.5 | |
| Screw | | | | | | | | | | | | | | Screw M5 | |
| PH2 | | | | | | | | | | | | | | PZ 2 | |
| 1.5 | | | | | | | | | | | | | | 2...3 | |
| 13.3 | | | | | | | | | | | | | | 20.4 | |
| 18...10 | | | | | | | | | | | | | | 6...10 | |
| 1...6 | | | | | | | | | | | | | | 1.5...6 | |
| 1...16 | | | | | | | | | | | | | | 1.5...6 | |
| -40...+80°C | | | | | | | | | | | | | | -40...+90 | |
| -40...+130°C | | | | | | | | | | | | | | -40...+125 | |
| On vertical plane | | | | | | | | | | | | | | Any | |
| Screw or on 35mm DIN rail | | | | | | | | | | | | | | Screw | |