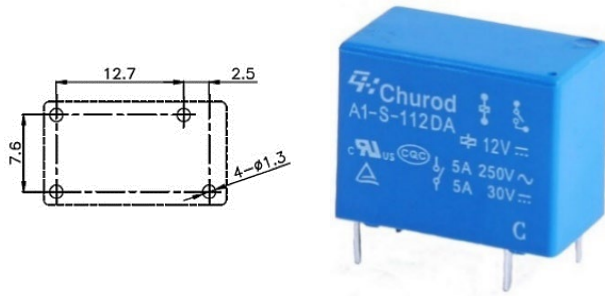


Appliance relays

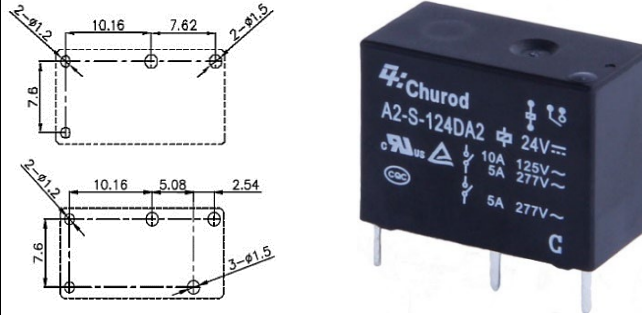
A1

SPST-NO (1 form A)
 3A-10A; 1/6hp; TV5; 4A FLA/5A LRA
 200mW and 450mW coil options
 Dielectric coil-contact 4kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



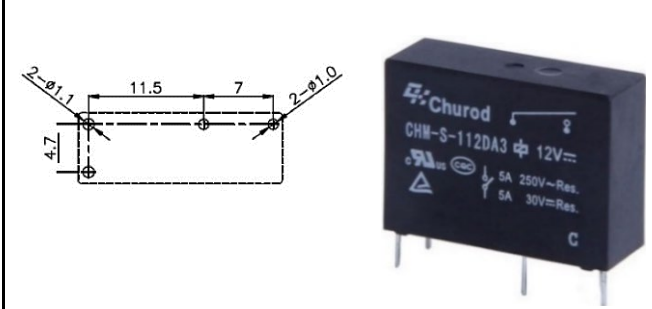
A2

SPST-NO, NC, or SPDT (1 form A, B, or C)
 3A-10A; 1/10hp; 5A@120VAC pilot duty
 150mW, 200mW, and 400mW coil options
 Dielectric coil-contact 4kV (8kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035



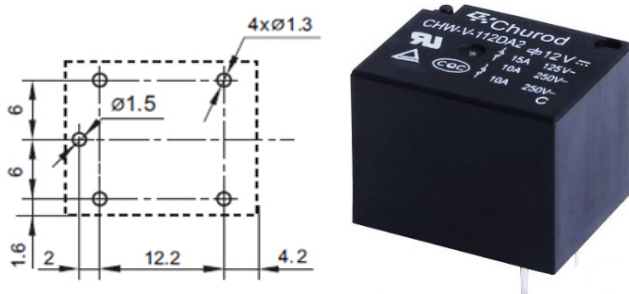
CHM/CHMN

SPST-NO (1 form A)
 3-10A; 1/10hp; 1.4 FLA/7.5LRA; 0.4-5A pilot duty
 200mW and 280mW coil options
 Dielectric coil-contact 4.5kV (7kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



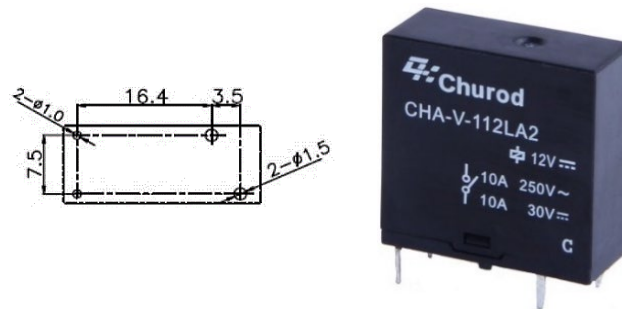
CHW

"Sugar cube style"
 SPST-NO, NC, or SPDT (1 form A, B, or C)
 15A; 1.5FLA/15A LRA; 80W Tungsten
 240mW and 360mW coil options
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



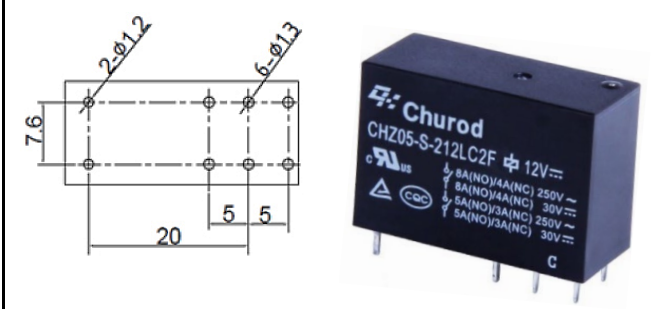
CHA

SPST-NO (1 form A)
 10A@250VAC/30VDC
 250mW or 540mW coil
 Dielectric coil-contact 4kV (10kV surge)
 Class F (155°C) insulation standard



CHZ05

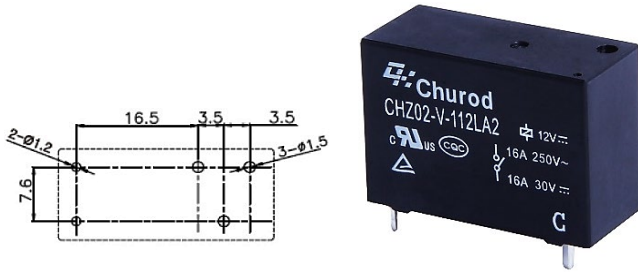
DPST-NO or DPDT (2 form A or C)
 10A@250VAC/30VDC; B300 pilot duty
 540mW and 720mW coil options
 Dielectric coil-contact 5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



Appliance relays

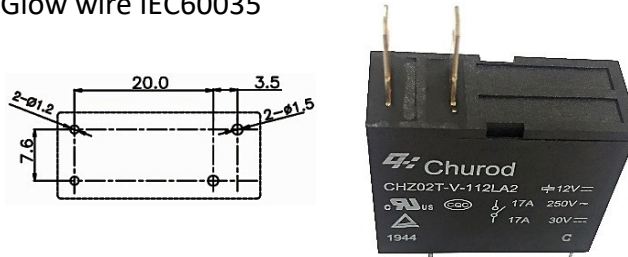
CHZ02

SPST-NO (1 form A)
 16A-20A; 1/6hp@250VAC
 120mW, 540mW and 720mW coil options
 Dielectric coil-contact 5kV (10kV surge)
 3.5mm pin spacing, QCT option (T-type)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion proof IEC60079



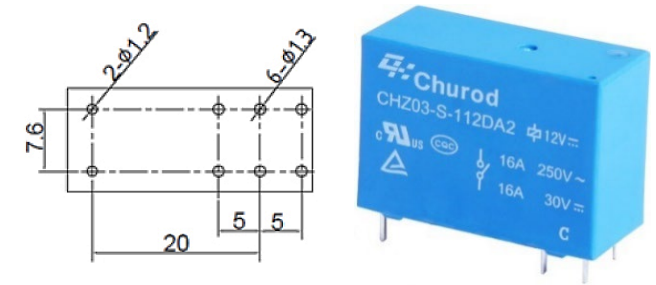
CHZ02T

SPST-NO (1 form A)
 17A-20A
 540mW and 720mW coil options
 Dielectric coil-contact 5kV (10kV surge)
 Quick connect power terminals
 Class F (155°C) insulation standard
 Glow wire IEC60035



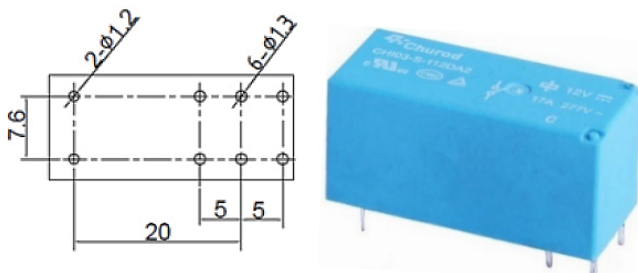
CHZ03

SPST-NO or SPDT (1 form A or C)
 16A-20A; 1/6hp@250VAC
 120mW, 540mW and 720mW coil options
 Dielectric coil-contact 5kV (10kV surge)
 5.0mm pin spacing
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



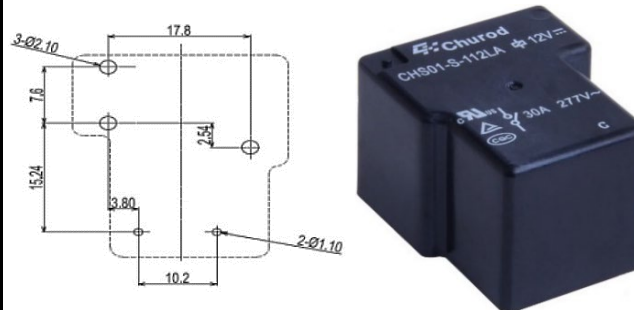
CHI03

SPST-NO, NC, or SPDT (1 form A, B, or C)
 20A; 1hp@120/240/480; 10FLA/60LRA; TV8
 400mW coil
 Dielectric coil-contact 5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



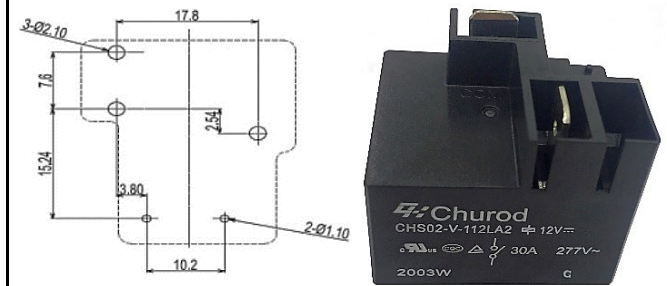
CHS01

SPST-NO, NC, or SPDT (1 form A, B, or C)
 20A-40A; 2hp@250VAC
 900mW coil
 Dielectric coil-contact 2.5kV (3kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



CHS02

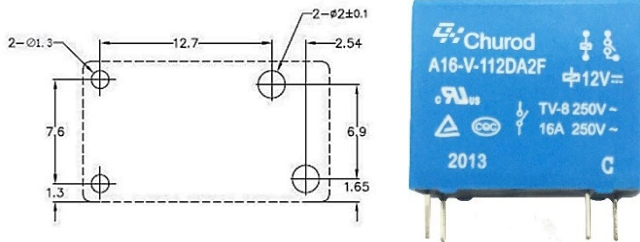
SPST-NO, NC, or SPDT (1 form A, B, or C)
 20A-40A; 2hp@250VAC
 900mW coil
 Dielectric coil-contact 2.5kV (3kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



Industrial relays

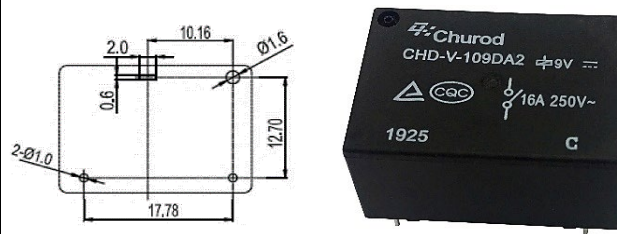
A16

SPST-NO (1 form A)
 16A@125V, 277VAC; 1/6hp@125/250; TV8
 400mW coil
 Dielectric coil-contact 4kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035



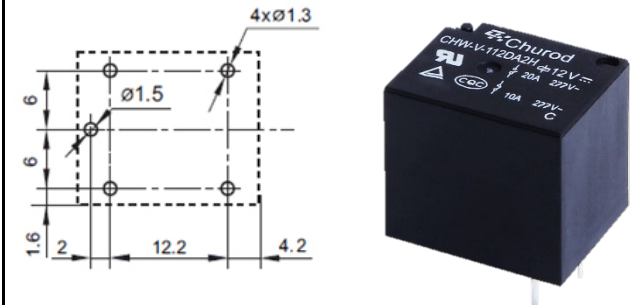
CHD

SPST-NO (1 form A)
 16A@250VAC
 200mW coil
 Dielectric coil-contact 2.5kV (5kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035



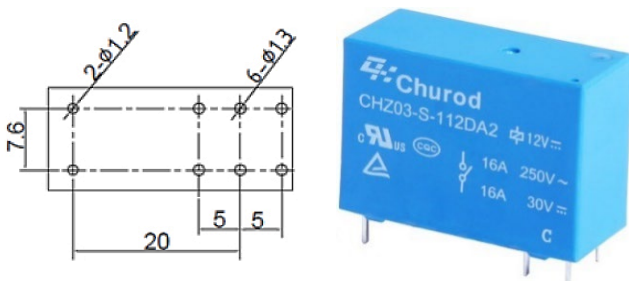
CHW-H

SPST-NO, NC, or SPDT (1 form A, B, or C)
 20A; 1hp@250VAC; TV-8
 240mW and 360mW coil options
 Dielectric coil-contact 2kV (10kV surge)
 Class F (155°C) insulation standard



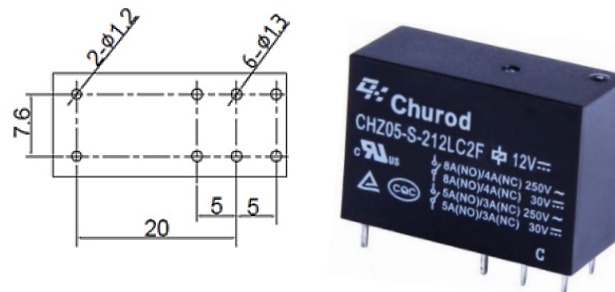
CHZ03

SPST-NO or SPDT (1 form A or C)
 16A-20A; 1/6hp@250VAC
 120mw, 540mW and 720mW coil options
 Dielectric coil-contact 5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



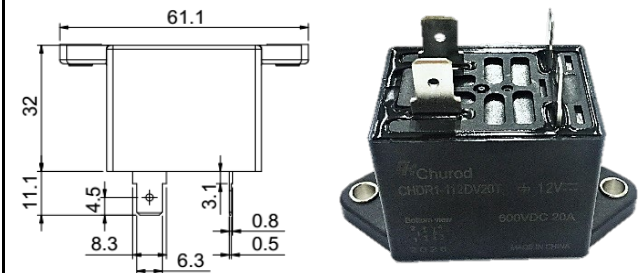
CHZ05

DPST-NO or DPDT (2 form A or C)
 10A; B300 pilot duty
 540mW and 720mW coil options
 Dielectric coil-contact 5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



CHDR1

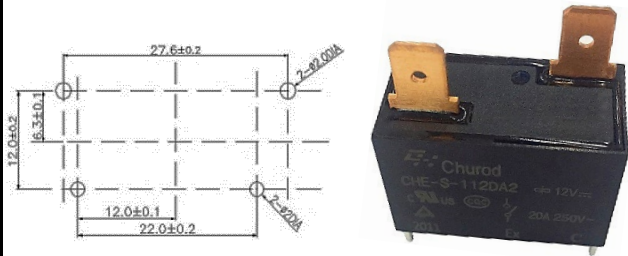
SPST-NO-DM(1 form X)
 20A@600VDC or 50A@500VDC
 20A type momentary max current 200A;
 50A type momentary max current 300A
 2W coil
 Dielectric coil-contact 2kV (10kV surge)
 PCB or tab mounting



Industrial relays

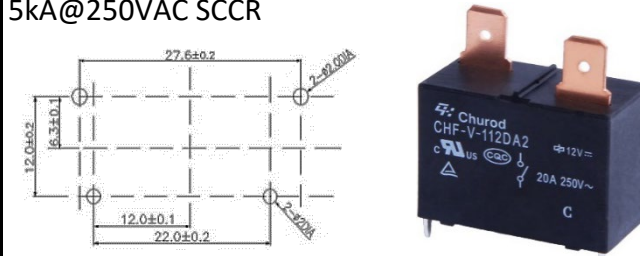
CHE/CHEN

SPST-NO (1 form A)
 20A-30A; 2hp@250VAC; 25FLA/85LRA; 25A ind
 900mW coil
 PCB or PCB with Quick Connect Terminals
 Dielectric coil-contact 4.5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



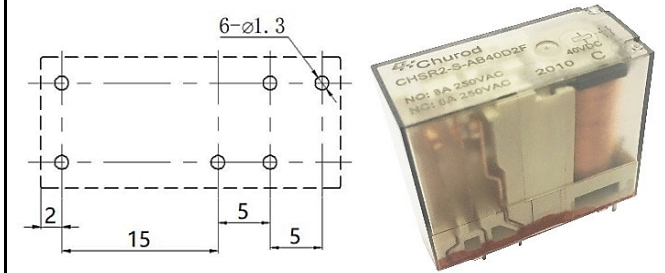
CHF/CHFN

SPST-NO (1 form A)
 16A-25A; 2hp@250VAC; 25FLA/85LRA
 900mW coil
 PCB or PCB with Quick Connect Terminals
 Dielectric coil-contact 4.5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079
 5KA@250VAC SCCR



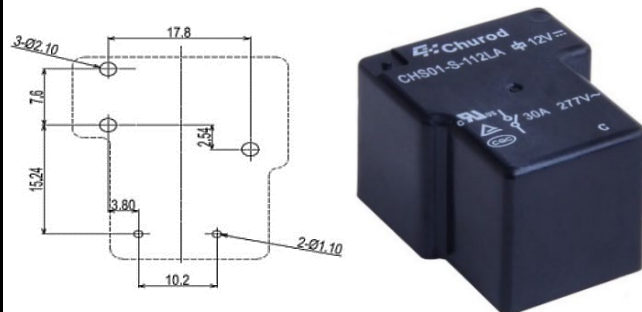
CHSR2/4/6 - Force guided relay

2 pole (1A + 1B or 2C); 4 pole (3A + 1B);
 6 pole (4A + 2B or 3A + 3B)
 8A; A300 pilot duty NO / B300 pilot duty NC
 400VAC max switching voltage
 700mW coil
 Dielectric coil-contacts 4kV (surge 10kV)
 6kV surge between contact sets



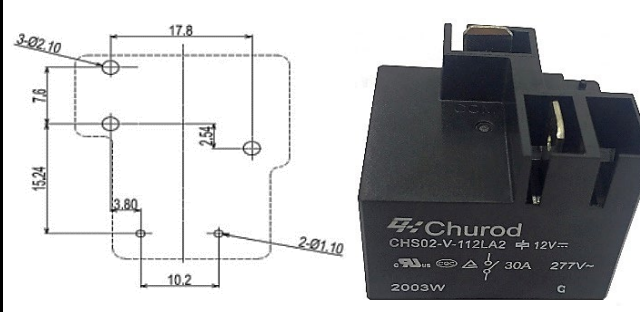
CHS01

SPST-NO, NC, or SPDT (1 form A, B, or C)
 20A-40A; 2hp@250VAC
 900mW coil
 Dielectric coil-contact 2.5kV (3kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



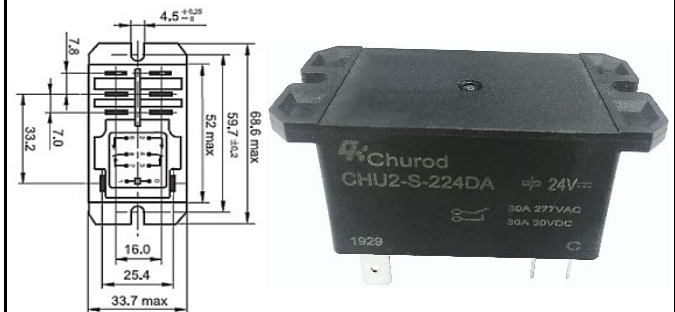
CHS02

SPST-NO, NC, or SPDT (1 form A, B, or C)
 20A-40A; 2hp@250VAC
 900mW coil
 Dielectric coil-contact 2.5kV (3kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035; Explosion-proof IEC60079



CHU

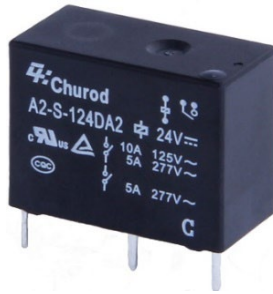
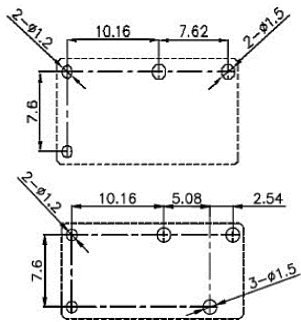
DPST-NO or DPDT (2 form A or C)
 40A@277VAC; 1hp@120VAC/2.5hp@240VAC
 DC coil (1.7W) or AC coil (4VA, 50Hz or 60Hz)
 PCB / panel mount w/Quick Connect Terminals
 Dielectric coil-contact 4kV (10kV surge)
 Class F (155°C) insulation standard



Alternative energy relays

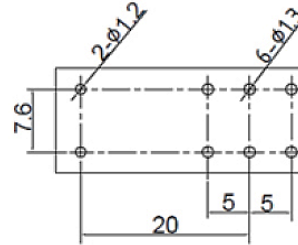
A2 - Super sensitive coil type

SPST-NO, NC, or SPDT (1 form A, B, or C)
 3A-10A; 1/10hp; 5A@120VAC pilot duty
150mW, 200mW, and 400mW coil options
 Dielectric coil-contact 4kV (8kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035



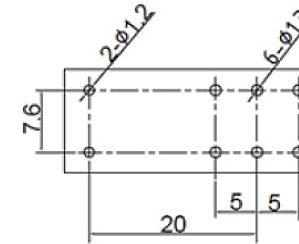
CHZ03-H - Super sensitive coil type

SPST-NO or SPDT (1 form A or C)
 15A; 480VA EB; 480VA pilot duty; TV5;
 1/3hp@120/240; 1/4hp@277
120mW, 540mW and 720mW coil options
 Dielectric coil-contact 5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035



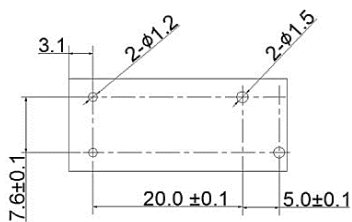
CHI05-H - Wide gap

DPST-NO or DPDT (2 form A or C)
 10A@250VAC; TV3
 1.5mm and 2.0mm contact gap options
 800mW and 1.5W coil options
 Dielectric coil-contact 5kV (10kV surge)
 Class F (155°C) insulation standard



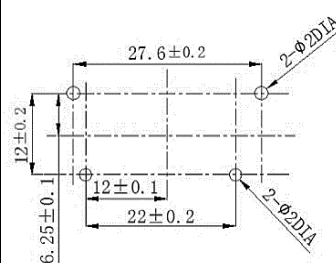
CHI04 - High voltage DC switching

SPST-NO (1 form A)
 5A@420VDC; 10A@300VDC; 16A@180VDC
 400mW coil
 Dielectric coil-contact 5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035



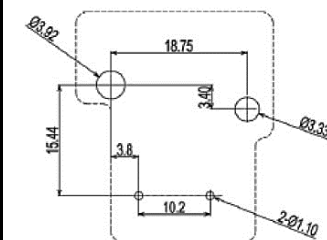
CHF-N-H - Solar inverter relay

SPST-NO (1 form A)
Switching to 50A and 400VAC
 2.25mm contact gap
 1.4W coil (holding: 40%@23°C, 50%@85°C)
 Dielectric coil-contact 4.5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035



CHS01-H - Solar inverter relay

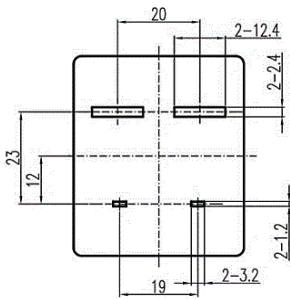
SPST-NO (1 form A)
 35A@250VAC/30VDC (43A TUV; 60A carry)
 1.8 mm contact gap (2.23mm TUV only)
 2.25W coil (holding: 40%@230C, 50%@85°C)
 Dielectric coil-contact 4kV (10kV surge)
 Class F (155°C) insulation standard



Alternative energy relays

CHAR/CHDR - AC/DC contactor

SPST-NO-DM (1 form X)
 CHAR: 60-270A@690VAC to 1000VAC
 CHDR: 100A@48VDC; 100/150A@60VDC
 CHAR: 3.6mm / CHDR: 3.0mm contact gap
 3.2W coil
 Dielectric coil-contacts 4kV (6kV surge)



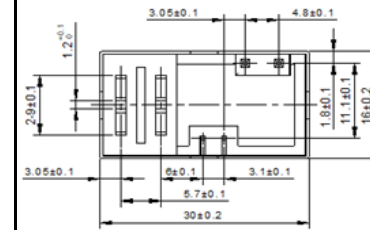
CHDC - Low voltage DC contactor

SPST-NO/NC-DM (1 form X or Y)
 200A-400A@60VDC-80VDC
 Latching types available
 2W-5W coil power (holding)
 Dielectric coil-contacts 1.5kV (surge 2.5kV)



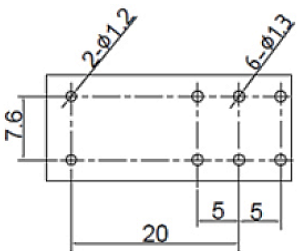
CHC - Latching DC contactor (PCB)

SPST-NO/NC-DM (1 form X or Y)
 63A@80VDC; 80A@60VDC;
 90A@250VAC/48VDC
 NO or NC auxiliary contact available
 Bidirectional load handling
 3W initial coil power
 Dielectric coil-contacts 1kV (surge 2.5kV)



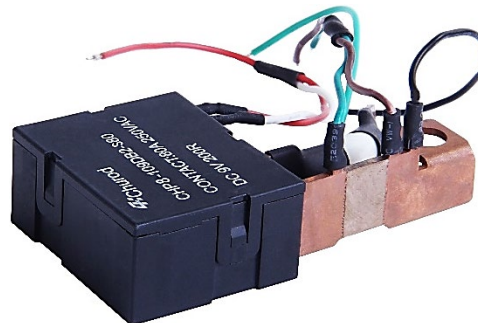
CHI03L - Latching relay for lighting

SPST-NO, NC, or SPDT (1 form A, B, or C)
 20A; 1hp@120/240/480; 8A@120/277/3A@347
 EB; 3.7A@347/480 MB; TV8; 12.5A Tungsten
 400mW single coil/600mW dual coil
 Dielectric coil-contacts 5kV (10kV surge)
 Glow wire IEC60035; Explosion-proof IEC60079



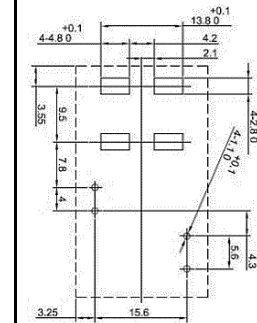
CHP8 - Latching relay for meters

SPST-NO or NC (1 form A or B)
 60A-90A; UC3 compliant
 Single coil (1W or 1.5W) / Dual coil (2W or 3W)
 Dielectric coil-contacts 4.5kV
 With or without Manganin shunt and sensing
 Bus bar terminals, braided wire, or PCB mount



CHDR-L - Latching DC relay SPST-NO-DM (1 form X)

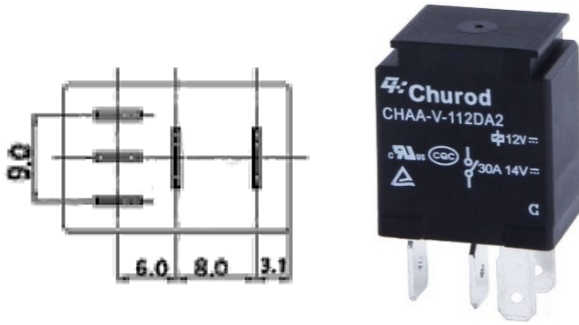
80A@24VDC; 110A@60VDC; 125A@80VDC
 1.5mm contact gap
 7.7W-53W single coil
 Auxiliary position monitoring contact standard
 Dielectric coil-contacts 4kV (6kV surge)



Automotive relays

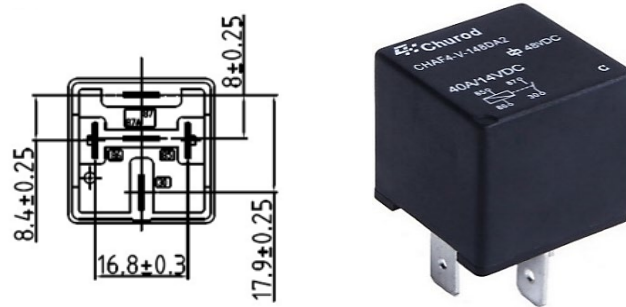
CHAA

"Micro ISO" package
 SPST-NO or SPDT (1 form A or C)
 30A-40A; 40A-80A make (motor); 100A-150A
 make (lamp)
 Coil paralleled resistor or diode



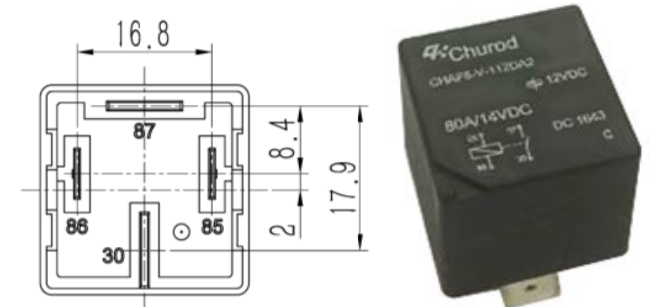
CHAF4/5/6

"Mini ISO" package
 SPST-NO or SPDT (1 form A or C)
 Tied 87 terminal available
 60A; 150A make (motor); 180A make (lamp)
 Coil paralleled resistor or diode
 Plug-in, PCB, or removable mounting bracket



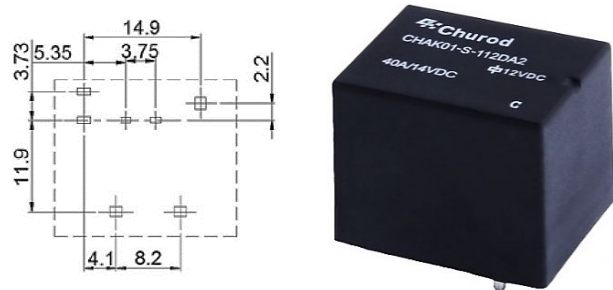
CHAF7/8

"Mini ISO" package
 SPST-NO (1 form A)
 40-70-80A; 160A make (motor); 210A make (lamp)
 Coil paralleled resistor or diode
 Plug-in, PCB, or removable mounting bracket



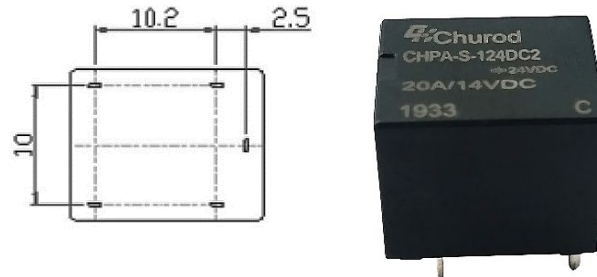
CHAK

"Mini K" package
 SPST-NO or SPDT (1 form A or C)
 20A-40A; 40A-80A make (motor); 2x21W+5W or
 4x21W+42x5W (lamp)
 US or Euro footprint
 Open or sealed



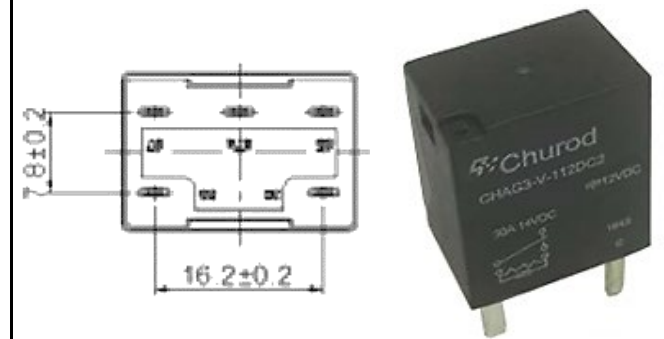
CHPA

SPST-NO or SPDT (1 form A or C)
 20A; 25A make (motor); 90A make (lamp); 6x21W
 (flasher)
 Coil paralleled resistor or diode



CHAG3

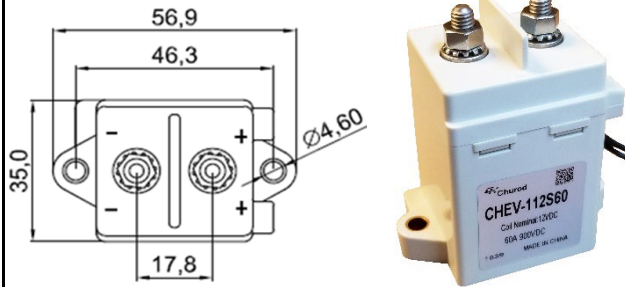
"Mini ISO 280"
 SPST-NO or SPDT (1 form A or C)
 35A; 150A make (lamp); 80A make (inductive)
 Coil paralleled resistor or diode



High voltage DC

CHEV-E/S: HVDC - industrial

SPST-NO-DM (1 form X)
 60-120A@900VDC
 Standard (6W) or internal PWM (1.9W) coils
 Auxiliary position monitoring contact available
 M5 contact screws: wire or connector coil leads



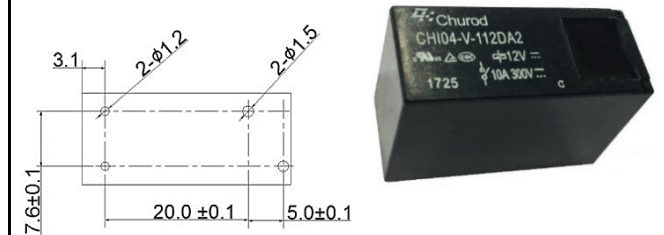
CHEV-H/P: HVDC - automotive

SPST-NO-DM (1 form X)
 100A-500A@450 to 1000VDC
 Standard 6W coil consumption
 High resistance to short circuit
 Bottom or side mounting
 Physical size, load terminals, and coil connection vary with rated load



CHI04 - High voltage DC switching

SPST-NO (1 form A)
 5A@420VDC; 10A@300VDC; 16A@180VDC
 400mW coil
 Dielectric coil-contact 5kV (10kV surge)
 Class F (155°C) insulation standard
 Glow wire IEC60035



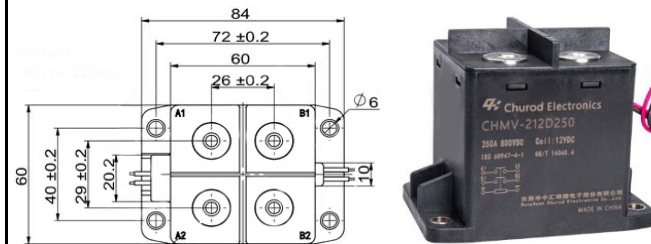
CHPV: HVDC - solar, EV precharge

SPST-NO-DM (1 form X)
 20A-600A@450 to 1500VDC
 Standard 6W coil consumption
 Auxiliary contact standard on models >100A
 Dielectric coil-contact 4kV



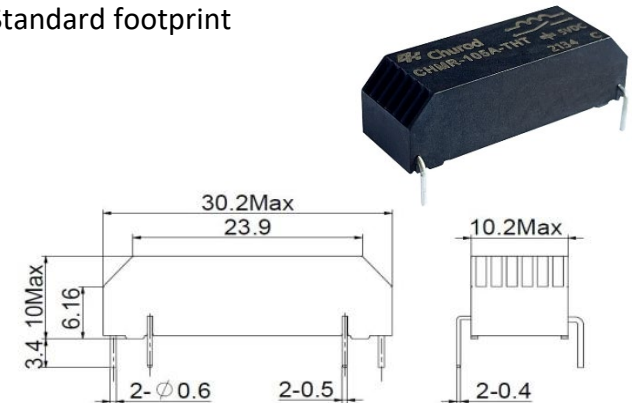
CHMV: HVDC - EV charging

DPST-NO-DM (2 form X)
 2 x 250A@800VDC
 Dual coil design, 7.5W holding power
 Auxiliary contact available
 High short circuit resistance (8kA)



CHMR - HV reed relay (BMS, solar)

SPST-NO (1 form A)
 0.15A@1000VDC; 1A max switching
 3.5kV dielectric between contacts; 7kV between coil and contacts; 8kV surge voltage
 Standard footprint



Churod Sensing

Battery Pressure Sensor

MEMS-based sensor for the early and accurate detection of thermal propagation in sealed battery packs. Designed to meet EVS GT requirements for early detection and warning.

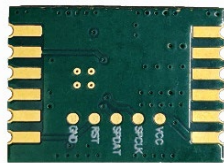
Gen I:

- 32-bit processor
- Low power consumption (<0.2mA)
- Power-saving sleep mode
- Automotive grade design
- CAN or PWM capable
- Operating pressure 50-165kPa
- Customizable detection parameters
- Continuously-updating algorithm to filter false positives during operation



Gen II:

- 8-bit processor
- PCB (BMS) mounted
- Lower power consumption (<0.07mA)
- I2C / SPI / UART capable (backward compatible with Gen I CAN/PWM)
- Operating pressure 50-165kPa
- Continuously-updating algorithm to filter false positives during operation
- Functional safety - QM



Variable Refrigerant Flow Sensor

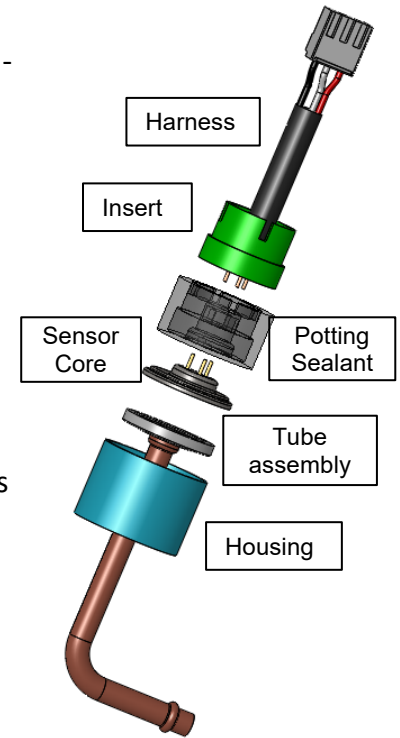
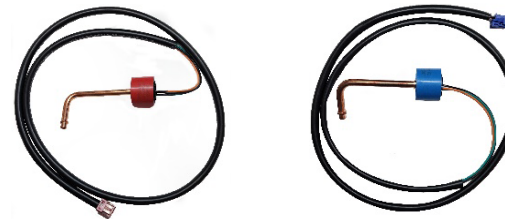
Oil-filled MEMS sensor for the measurement of refrigerant pressure. Signal is used to modulate variable frequency drive (VFD) loads resulting in energy savings.

Characteristics:

- Hermetically sealed (no O-ring)
- Digital pressure and pressure compensation - high accuracy across temperature range (+/-1% -40° to 140°C)
- Voltage or current output
- Customizable mechanical interface (brazing, threaded connections, etc.)
- Customizable outputs
- Compatible with R22, R32, R290, R410a

Applications:

- Variable frequency air conditioning
- Variable frequency hydraulic control systems
- Variable frequency air compressors
- Cold storage and refrigeration



Cross reference guide

Appliance					Alternative				
Churod	Hongfa	TE	Omron	Panasonic	Churod	Hongfa	TE	Omron	Panasonic
A1	HF32F	OJ/OJE/T77	-----	JK	A2	HF33F	PCH	G5Q	JQ
A2	HF33F	PCH	G5Q	JQ	CHZ03-H	HF141FH/HF141FD	OZ	G2R-1-E	JR
CHM	HF46F	PCJ	G5NB	LD	CHI05-H	HF140FF	-----	G2RG	-----
CHW	HF3FF/HF3FA	ORWH	G5LE	LS/JS	CHI04	HF158F-V	-----	-----	-----
CHA	HF36F	SDT	G5PA-1	LK	CHFN-H	HF161F-W	PCFN	G4A	LFG
CHZ05	HF141FD	OMI-2P	G2R-2	JW	CHS01-H	HF165F	T9S	-----	-----
CHZ02	HF14FF/HF141FF	OMI/OMIH	G2R-1	JW	CHAR	-----	-----	-----	-----
CHZ02T	HF62F	OMIF	G5JS	LE	CHDR	HF167F	-----	-----	HE1AN
CHZ03	HF141FH/HF141FD	OZ	G2R-1-E	JR	CHDC	-----	-----	-----	-----
CHI03	HF115F	RT	G2RL	LZ	CHEV	HFE18V/80V/82V	EV/EVC/LEV/IHV	G9E	AEV
CHS01	HF105F/HF2150	T9A	G8P	JTN/JTV	CHI03-L	HFE20	RT1	G2RK	-----
CHS02	HF105F/HF2160	T9A	G8P	JTN/JTV	CHP8	HFE19	EW	G9TA/G9TB	ADZS
					CHDR-L	-----	-----	-----	-----

Industrial					Automotive				
Churod	Hongfa	TE	Omron	Panasonic	Churod	Hongfa	TE	Omron	Panasonic
A16	HF32FV-16	-----	-----	-----	CHAA	HFV6	V23074	G8HN	CM
CHD	HF7520	PCD	G5CA	JV	CHAF4/6	HFV4	VF4	G8JN/R	CB
CHW-H	HF21FF	-----	-----	-----	CHAF7/8	HFV7	VF7	G8JN/R	CB
CHZ03	HF141FH/HF141FD	OZ	G2R-1-E	JR	CHAG3	HFV11	VJ28	G8V/VL	-----
CHZ05	HF141FD	OMI-2P	G2R-2	JW	CHAK	HFKP	Power K/V23076	G8PE	-----
CHDR1	HFE80V-20/60	-----	-----	AEV1/AEV2	CHPA	HFKW	-----	G8QN	CQ/JJ-M
CHE	HF102F/HF160F	PCF	G4A	JM					
CHF	HF102F/HF160F	PCF	G4A	JM					
CHSR2	HFA2	V23047	STI	-----					
CHS01	HF105F/HF2150	T9A	G8P	JTN/JTV	CHEV-E/S	HFE82V	AP/EV/LEV/IHV	G9V	AEV
CHS02	HF105F/HF2160	T9A	G8P	JTN/JTV	CHEV-H/P	HFE82V	AP/EV/LEV/IHV	G9V	AEV
CHU	HF92F	T92	-----	-----	CHI04	HF158F-V	-----	-----	-----
					CHPV	HFE88P	AP/EV/LEV/IHV	G9V	AEV
					CHMV	-----	EV	-----	-----
					CHMR	-----	-----	-----	-----