

Description

Voltage activated bimetal operated time delay relay with temperature compensated switching time, changeover contact and snap action mechanism; excitation circuit and switching circuit electrically separate; operation independent of mounting attitude. High shock resistance. Delay times can be factory-preset as desired. The continuous excitation voltage may be up to 1.4 times the rated value. To shorten the switching time the excitation voltage may be increased to 3 times the rated value but only for that switching time period.

Typical applications

Process control, diesel engine pre-heaters.

Ordering information

Type No.	
664	thermal time delay relay with changeover contact
Terminal design	
P10	5 blade terminals 6.3x0.8 (QC .250)
Operating voltage*	AC 4...230 V
Switching time*	20...60 sec
Reset time*	20...60 sec
664 - P10 - 230V - 20 - 40	ordering example

*Please indicate the desired switching time, reset time and operating voltage when ordering. The sum of switching and reset time should be between 60 and 120 s.

Standard operating voltages and typical internal resistance values

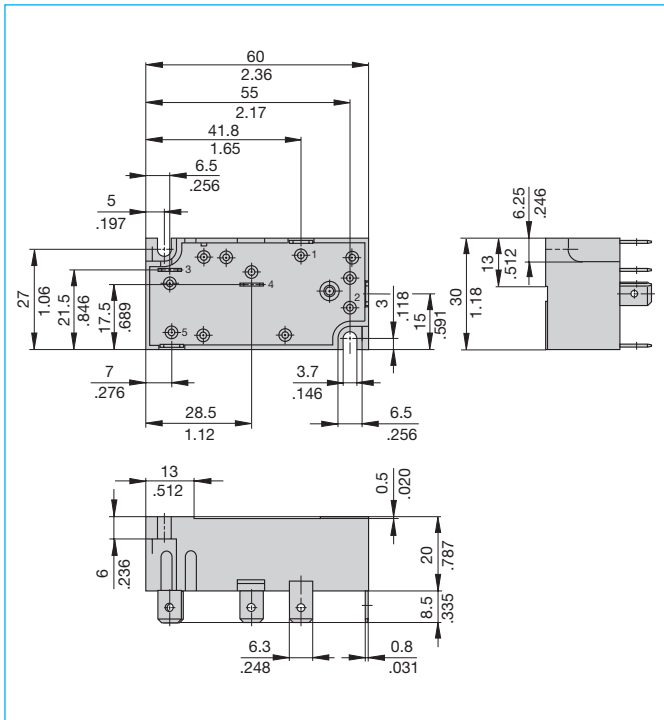
Operating voltage (V)	Internal resistance (Ω)	Operating voltage (V)	Internal resistance (Ω)
4	3.4	20	134
6	7.6	24	200
8	16	48	725
10	26.5	60	1 200
12	40	115	4 000
16	73	230	16 700



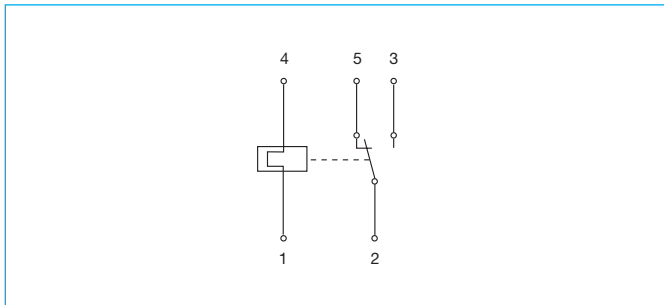
Technical data

Voltage rating	AC 250 V (50/60 Hz); DC 24 V	
Current rating of switching circuit	5 A (2 A)	
Operating voltages	AC 4...230 V	
Switching/ reset times in seconds	approx. 20	approx. 40
	approx. 25	approx. 50
	approx. 30	approx. 60
	The sum of switching time and reset time should be between 60 and 120 s	
Typical life	100,000 operations at 1 x I _N	
Ambient temperature	-30...+60 °C (-22...+140 °F)	
Insulation co-ordination (IEC 60664 and 60664 A)	rated impulse withstand voltage	pollution degree
	2.5 kV	3
Dielectric strength (IEC 60664 and 60664A)	test voltage	
	excitation circuit/ switching circuit	AC 2,000 V
Insulation resistance	> 100 MΩ (DC 500 V)	
Overexcitation	1.4 U _N continuously up to 3 U _N short-time	
Degree of protection (IEC 60529/DIN 40050)	housing IP30 terminal area IP00	
Vibration	5 g (57-500 Hz) ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc, 10 frequency cycles/axis	
Shock	25 g (11 ms) to IEC 6068-2-27, test Ea	
Corrosion	48 hours at 5 % salt mist to IEC 60068-2-11, test Ka	
Humidity	240 hours at 95 % RH test to IEC 60068-2-3, test Ca	
Mass	approx. 31 g	

Dimensions



Internal connection diagram



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This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Description

Voltage or current activated bimetal operated door locking relay in creepage resistant and flame retardant housing. Choice of actuator lengths. Auxiliary contacts optional.

Typical applications

Washing machines.

Ordering information

Type No.	
683	door locking relay
Terminal design	
P10	blade terminals 6.3-0.8 (QC .250)
Auxiliary contacts	
Si1	current and voltage activated 2 (0.3) A, N/O
Si2	current and voltage activated, N/C
Si50	voltage activated 16 (4) A, N/O
Housing	
KF	for tropical and high humidity conditions
Variant	
...	special suffix number for actuator length or style etc.
Operating current or voltage	
0.1...5 A	
AC 24...240 V	
683 - P10 - Si50 - KF - ... - 230 V	ordering example

Approvals

Authority	Voltage rating	Current rating
Semko, IMQ, UTE EN 60730	AC 250 V	2 (0.3) A, 16 (4) A

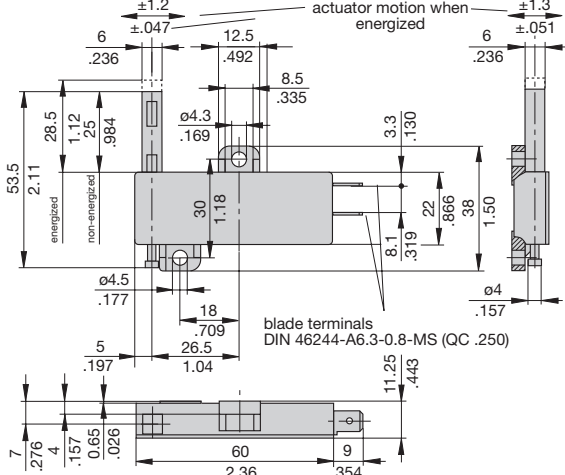


Technical data

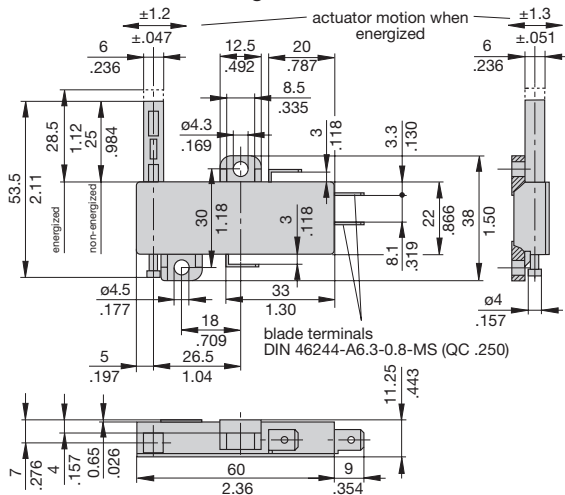
Voltage rating	AC 250 V (50/60 Hz)	
Current ratings:		
circuit Si1, Si2	2 A (0.3 A)	
circuit Si50	16 A (4 A) switch on only	
Operating voltages	AC 24...240 V	
Operating currents	0.1...5 A	
Typical life	10,000 operations at 1 x I _N	
Ambient temperature	0...+80 °C (+32...+176 °F)	
Insulation co-ordination (IEC 60664 and 60664A)	rated impulse withstand voltage 2.5 kV	pollution degree 3
Dielectric strength (IEC 60664 and 60664A)	test voltage AC 2,000 V	
Insulation resistance	> 100 MΩ (DC 500 V)	
Locking time (23°C/73°F)	< 20 sec depending on excitation	
Release time (23°C/73°F)	> 40 sec depending on application	
Actuator travel	max. 3.5 mm	
Actuator force	max. 0.2 N	
Degree of protection (IEC 60529/DIN 40050)	actuator area IP20 terminal area IP00	
Vibration	5 g (57-500 Hz) ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc, 10 frequency cycles/axis	
Shock	15 g (11 ms) to IEC 60068-2-27, test Ea	
Corrosion	48 hours at 5 % salt mist to IEC 60068-2-11, test Ka	
Humidity	240 hours at 95 % RH to IEC 60068-2-3, test Ca	
Mass	approx. 22 g	

Dimensions

683-P10-KF-... current activated

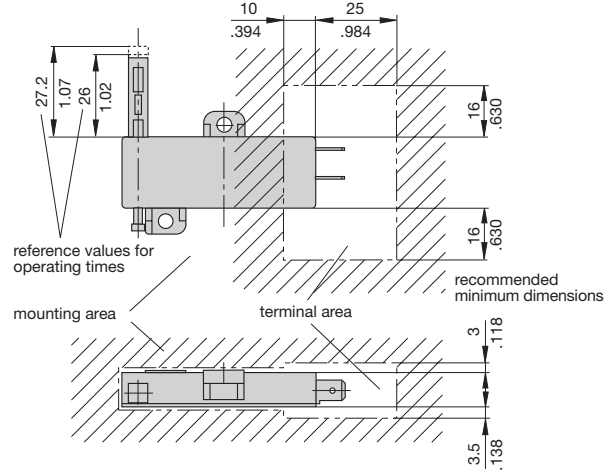


683-P10-Si50-KF-... voltage activated

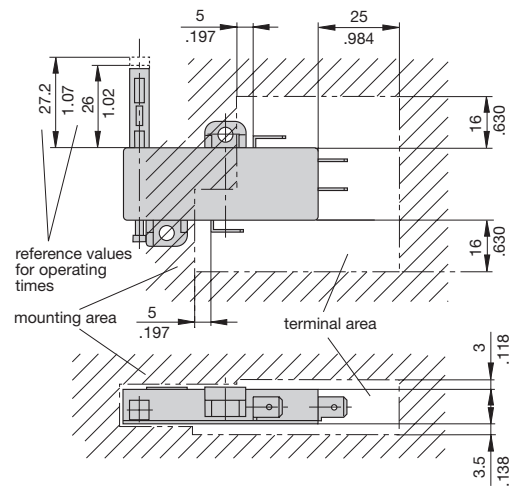


Installation drawings

683-P10-KF-... current activated

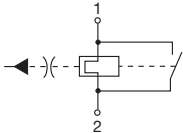


683-P10-Si50-KF-... voltage activated

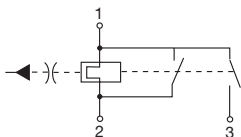


Internal connection diagrams

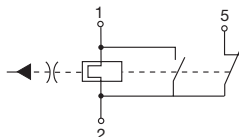
683-P10-KF current activated



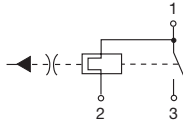
683-P10-Si1-KF current activated



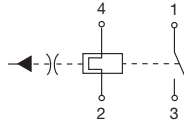
683-P10-Si2-KF current activated



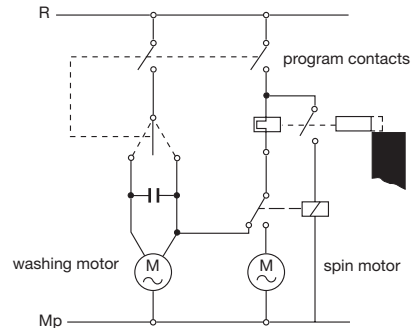
683-P10-Si50-KF voltage activated, without physical isolation



683-P10-Si50-KF voltage activated, with physical isolation



Application circuit 683-P10



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Description

Bimetal operated voltage activated door lock for washing machines, ensuring compulsory and permanent contact separation when the door is forced open. With standard keyed connectors. Approved to standard EN 60730.

Typical applications

Washing machines.

Ordering information

Type No.	6110 voltage activated door locking relay
Configuration/mounting method	F flange mounting
Lock	1 for door catch 3 for door pin
Number of poles	0 unprotected on all poles
Circuit variants	1...6 see circuit variants shown overleaf
Terminal design	P1 blade terminals 6.3-0.8 (QC .250)
Characteristic curve	X0 switch only (version -F..6) (without lock) X2 standard curve: 230 V locking time ≤ 10 s release time: 40-100 s (at 23°C/73.4 °F) X3 standard curve: 110 V locking time: ≤ 16 s release time: 40-100 s (at 23°C/73.4 °F)
Slide positioning	R2 with locating position
Rating	operating voltage
6110 - F 1 0 1 - P1 X2 - R1 - 230 V ordering example	

Approvals

Authority	Voltage ratings	Current ratings
VDE, SEV	AC 230 V	16 (6) A
UL	AC 240 V	16 (6) A

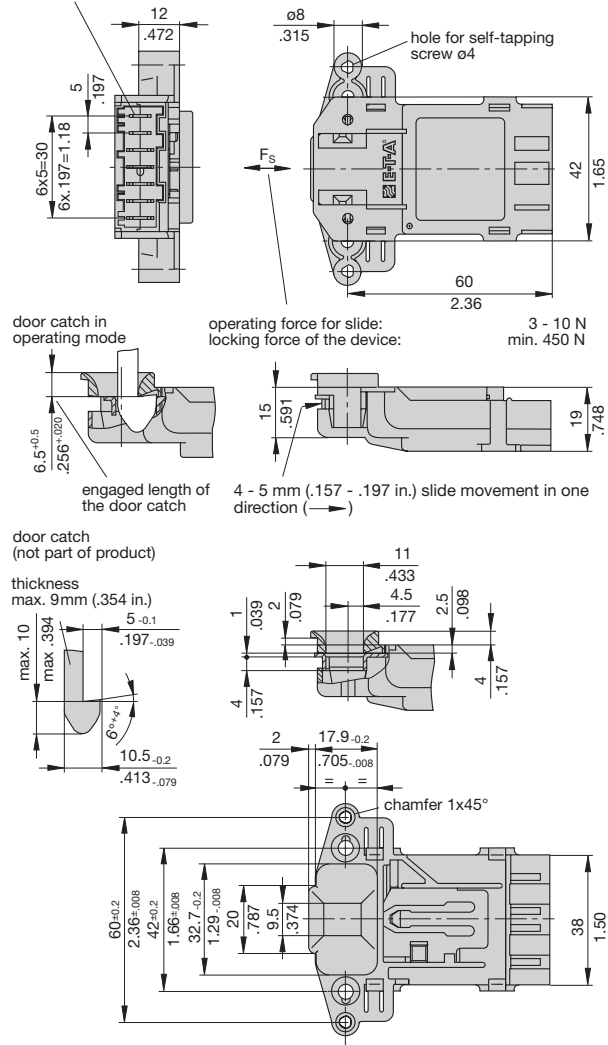


Technical data

Voltage rating	AC 230 V (50/60 Hz)	
Current ratings	for circuit 4-5 (μ) 6 A (6 A) switch on only for circuit 6-7 6 A (6 A) switch on only	
Operating voltages 3-4	AC 110...AC 230 V	
Typical life	for circuits 4-5 5,000 operations at 1 x I _N for circuits 6-7 5,000 operations at 1 x I _N	
Ambient temperature	0...+80 °C (+32...+176 °) T 80	
Insulation co-ordination (IEC 60664 and 60664 A)	rated impulse withstand voltage 2.5 kV	pollution degree 3 reinforced insulation at locking aperture
Dielectric strength (IEC 60664 and 60664A)	locking aperture test voltage AC 4,000 V	circuit 3-4-5/6-7 AC 2,000 V
Insulation resistance	> 100 MΩ (DC 500 V)	
Degree of protection (IEC 60529/DIN 40050)	locking aperture IP33 terminal area IP10	
Vibration	5 g (57-500 z), ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc, 10 frequency cycles/axis	
Shock	15 g (11 ms) to IEC 60068-2-27, test Ea	
Corrosion	48 hours at 5 % salt mist to IEC 60068-2-11, test Ka	
Humidity	240 hours at 95 % RH to IEC 60068-2-3, test Ca	
Operating force	F1: 3...10 N F3: < 68 N	
Locking force	F1: ≥ 400 N F3: ≥ 200 N	
Mass	approx. 46 g	

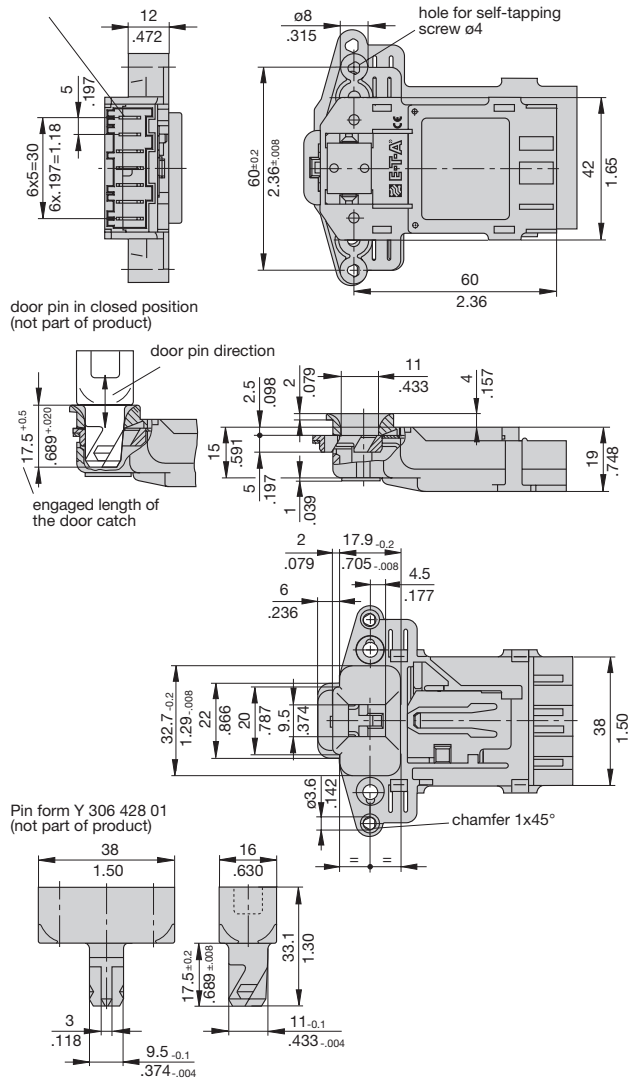
Dimensions 6110-F10-... for door catch

standard keyed connectors code W
for thermal door locking
blade terminals DIN 46244-A6.3-0.8-Ms (QC .250)

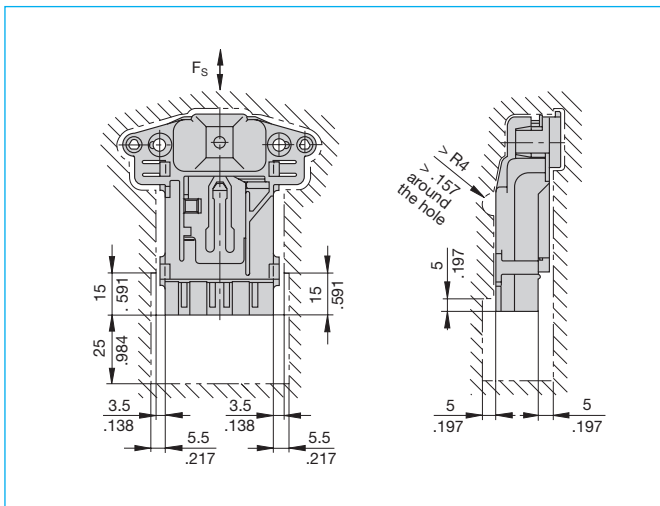


Dimensions 6110-F30-... for door pin

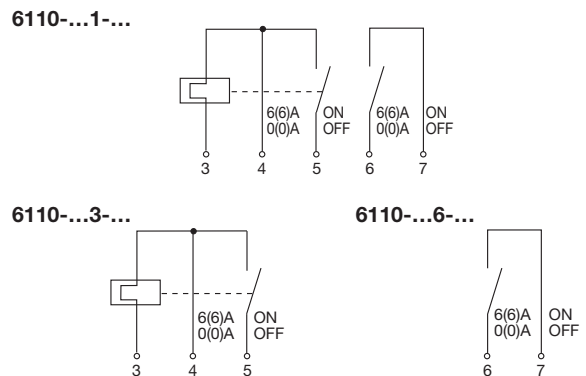
standard keyed connectors code W
for thermal door locking
blade terminals DIN 46244-A6.3-0.8-Ms (QC .250)



Installation drawing



Circuit variants



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inch

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Description

Bimetal operated door locking system for cookers with pyrolytic cleaning facility.

Bistable system with make contact, i. e. current status is maintained even in the event of power failure.

Approved to standards EN 60335 and EN 60730.

Typical applications

Cookers with pyrolytic cleaning facility.

Ordering information

Type No.	
6140	voltage operated door locking relay
Configuration	
S	to be screwed onto a support
Mounting	
2	through-hole mounting, 2 mounting holes
Ratings for terminals 33-34	
2	1 A at AC 230 V, T 120 (lower ratings to special order)
Circuit variants	
1	see circuit variants shown overleaf
Terminal design	
P1	blade terminals A6.3-0.8 (QC .250)
Characteristic curve	
X3	standard curve: 230 V locking time ≤ 30 sec release time ≤ 30 sec
Latching mode	
A1	rotary lock
B2	interlock
Voltage rating	
	excitation voltage (to be specified)
6140 - S 2 2 1 - P1 X3 - A1 - 230 V	ordering example

Contact depending on interlock upon request.

Approvals

Authority	Voltage ratings	Current ratings
VDE, UL	AC 230 V	1 A

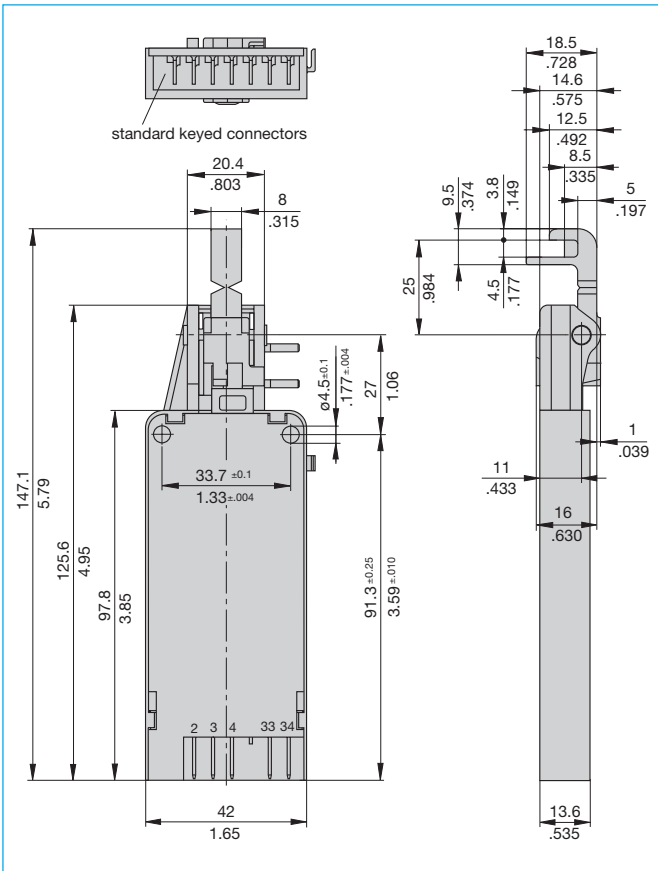


6140-...

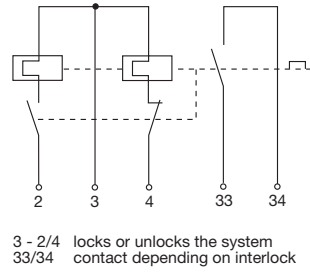
Technical data

Voltage rating	AC 120 V; AC 230 V; AC 400 V (50/60 Hz)
Current ratings for circuit 33-34	100 µA at DC 5 V 0.5 A at AC 120 V 1 A at AC 230 V 16 A at AC 230 V (no UL approval)
Excitation voltages 3-2/4	AC 120 V; AC 230 V; AC 400 V (50/60 Hz)
Duty cycle	100 % ON duty
Characteristics locking/release time	≤ 30 sec at 25 °C / 73.4 °F
Typical life electrical	6,000 cycles at 1 x I _N
mechanical	100,000 operations
Ambient temperature	VDE: max. +120 °C (+248 °F) T 120 UL: max. +115 °C (+239 °F) T 120
Operating temperature	max. +100 °C (+212 °F)
Insulation co-ordination (IEC 60664)	2.5 kV/2 reinforced insulation at locking aperture
Dielectric strength locking aperture circuits 33-34/ excitation circuit 3-2/4	according to installation drawing test voltage AC 3750 V test voltage AC 3750 V
Insulation resistance	> 100 MΩ (DC 500 V)
Degree of protection (IEC 60529)	locking aperture IP32 terminal area IP10
Vibration	2 g (57-200 Hz), ± 0,15 mm (10-57 Hz), to IEC 60068-2-6, test Fc, 10 frequency cycles/axis
Shock	5 g (11 ms) to IEC 60068-2-27, test Ea
Humidity	240 hours at 80 % RH, to DIN 40 046, page 5, test Ca
Operating force	< 2 N
Locking force	≥ 100 N (other values upon request)
Mass	approx. 70 g

Dimensions 6140-S221-P1X3-A1

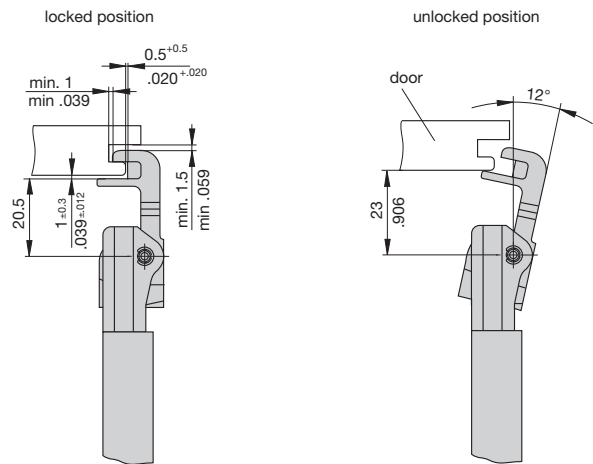


Internal connection diagram



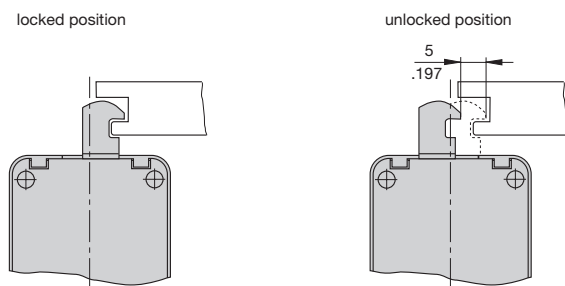
Installation

**Example 1
rotary lock A1**



Tolerances are ±IT13 to DIN ISO 286 if not shown otherwise.

**Example 2
interlock B2**

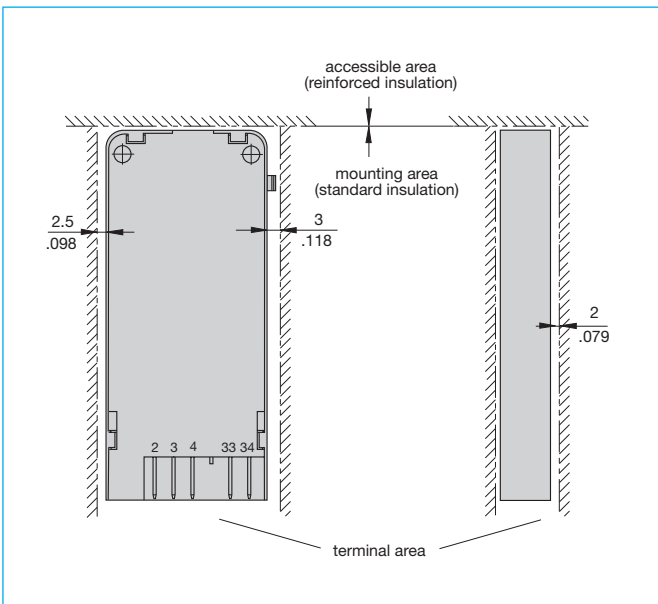


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Installation drawing



Description

Safety systems for cookers with pyrolytic cleaning facility and microwave ovens according to IEC Standard 335-2-25.

6510-F2: contact system for application in microwave ovens, with one or two auxiliary contacts to monitor latching of the door striker.

6510-F1: same basic unit as type 6510-F2, with an additional bistable electro-magnetic locking mechanism to ensure that the door is closed during pyrolytic cleaning. Operating temperatures up to +120 °C. Approved to standard EN 60335.

Typical applications

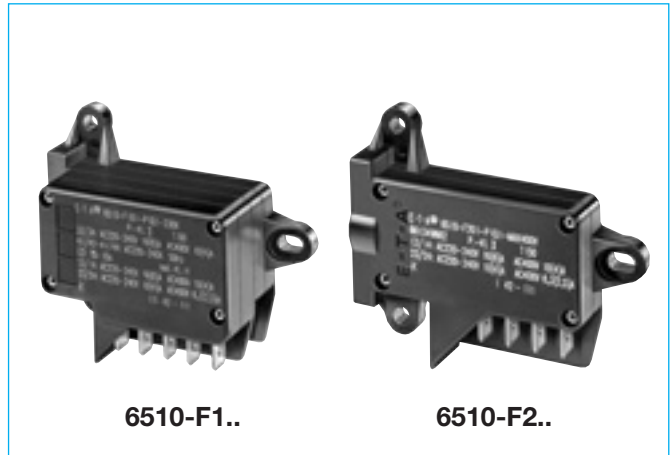
Cookers with or without pyrolytic cleaning facility, microwave ovens.

Ordering information

Type No.	6510	door locking relay
Configuration/mounting method	F	flange mounting
Size	1	contact system with additional bistable electro-magnetic locking mechanism (for cookers with pyrolytic cleaning facility)
	2	contact system for microwave ovens
Number of poles	0	unprotected on all poles
Style, accessories (circuit variants)	1	2 switch contacts (two NO contacts)
	2	1 switch contact (one NO contact)
	3	2 switch contacts (one each NO/NC contact)
Terminal design	P1	blade terminals 6.3-0.8 mm (QC .250)
Characteristic data	Q1	Switch: max. 500 magnetic locking and unlocking cycles switching contacts: max. 100,000 cycles Contact load: terminal 13-14: 16 (6) A terminal 33-34: 16 (6) A terminal 23-24: 10 (4) A
	Q2	Switch: max. 500 magnetic locking and unlocking cycles switching contacts: max. 100,000 cycles Contact load: terminal 13-14: 16 (6) A terminal 33-34: 16 (6) A terminal 23-24: DC 5 V / 100 µA
Rating		AC 230-240 V 1 % ON duty / 10 sec
6510 - F 1 0 1 - P1 Q1 - 230 V ordering example		

Approvals

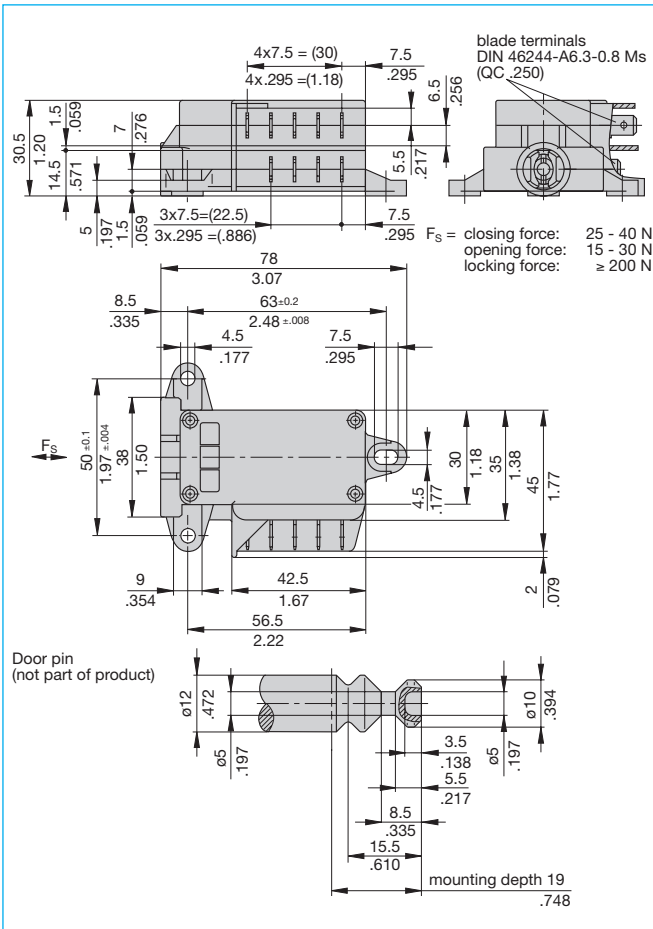
Authority	Voltage ratings	Current ratings
VDE, Kema, SEV, IMQ	AC 230 V	16 (6) A, 10 (4) A



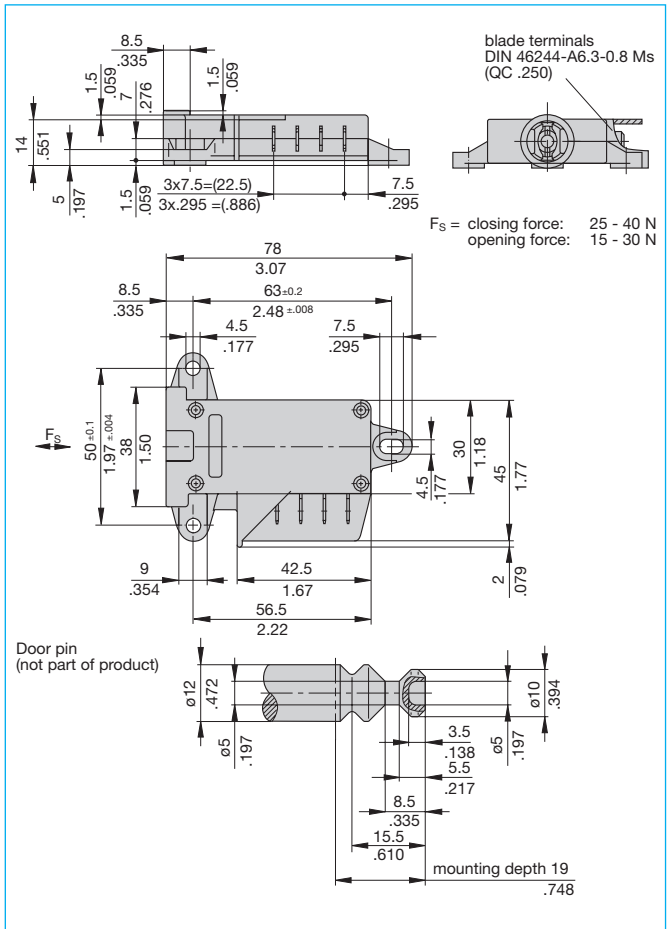
Technical data

Voltage rating	AC 230 V (50/60 Hz) (other voltages to special order)	
Current ratings	circuits 13-14 (-F1/-F2) and 33-34 (-F1) 16 A (6 A) circuit 23-24 10 A (4 A)	
Coil (-F1 only)	excitation 41-42/44 AC 230-240 V, approx. 8 A duty cycle 1 % ON duty /10 s	
Typical life (VDE 0630)	100,000 operations at 1 x I _N for circuits 13-14 and 23-24	
Typical life (VDE 0435)	500 magnetic locking operations for circuit 33-34 (-F1 only) - pyrolysis	
Ambient temperature	0...150 °C (+32...+302 °F) T 150 coil function temp. (-F1 only): +80...+120 °C (+176...+248 °F)	
Temperature at mounting means	max. +180 °C (+356 °F)	
Insulation co-ordination (IEC 60664 and 60664A)	rated impulse withstand voltage 2.5 kV reinforced insulation at locking aperture	pollution degree 3
Dielectric strength (IEC 60664 and 60664A)	locking aperture AC 4,000 V circuits 13-14/23-24 between circuits 13-14/23-24 and 33-34 (-F1 only) AC 4,000 V between circuits and energization (-F1 only) AC 2,000 V	test voltage AC 2,000 V
Insulation resistance	> 100 MΩ (DC 500 V)	
Degree of protection (IEC 60529/DIN 40050)	locking aperture IP33 terminal area IP00	
Vibration	5 g (57-500 z), ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc, 10 frequency cycles/axis	
Shock	15 g (11 ms) to IEC 60068-2-27, test Ea	
Corrosion	96 hours at 5 % salt mist to IEC 60068-2-11, test Ka	
Humidity	240 hours at 95 % RH to DIN 40046, sheet 5, test Ca	
Locking strength (-F1)	≥ 200 N	
Mass	-F1: approx. 75 g -F2: approx. 36 g	

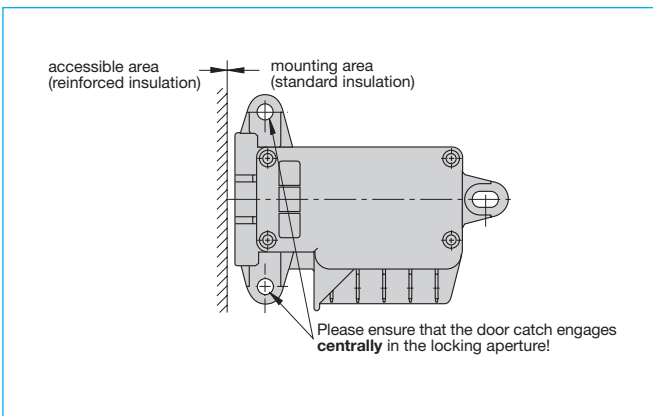
Dimensions 6510-F1



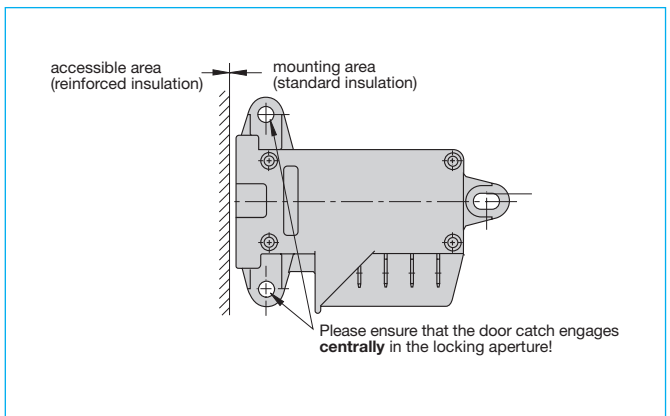
Dimensions 6510-F2



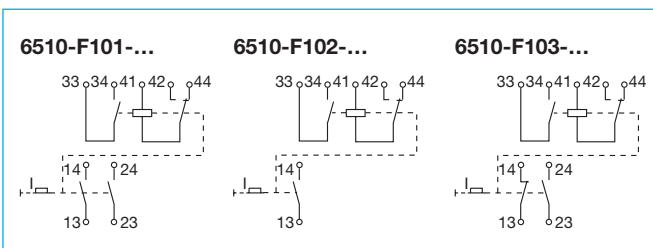
Installation drawing 6510-F1



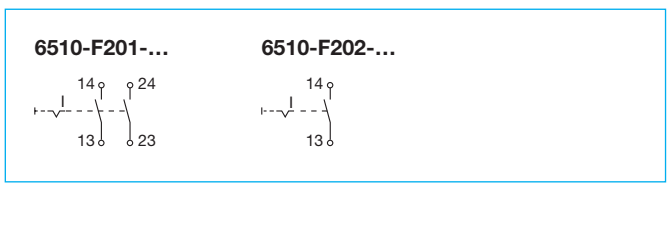
Installation drawing 6510-F2



Internal connection diagrams 6510-F1..



Internal connection diagrams 6510-F2..



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inch

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Description

Magnetic door locking relay for washing machines and other applications. When the door is closed manually, it is locked at the same time. It is unlatched by a small electrical impulse which will also open the door a little. The miniaturised magnetic trip system is energy saving. The unit features an additional actuator for unlocking mechanically which works as an emergency release in the event of a power failure. The design is compact and fool-proof. The standard RAST 5 terminals reduce wiring time.

It meets the requirements of the new standard for electrical door locks EN 60335.

Approved to standard EN 60730.

Typical applications

White goods, e. g. washing machines.

Ordering information

Type No.	
6520	door locking relay
	Circuit variant
10	standard
	Voltage rating
	AC 230 V
6520 - 10 - 230 V	ordering example

Approvals

Authority	Voltage ratings	Current ratings
VDE	AC 230 V	6 (6) A

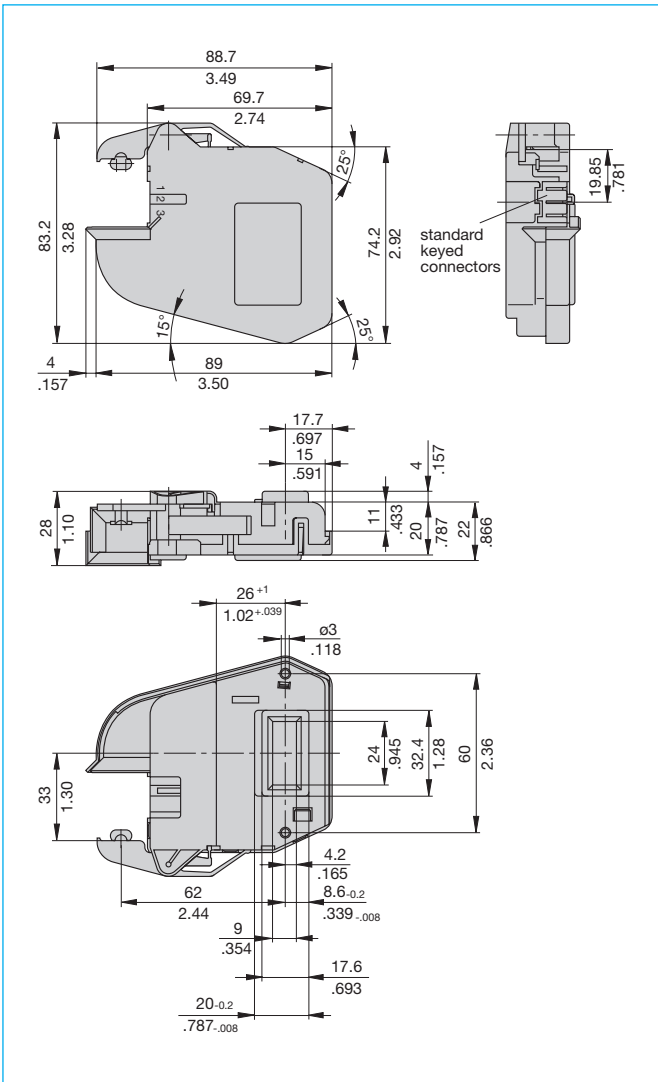


6520-...

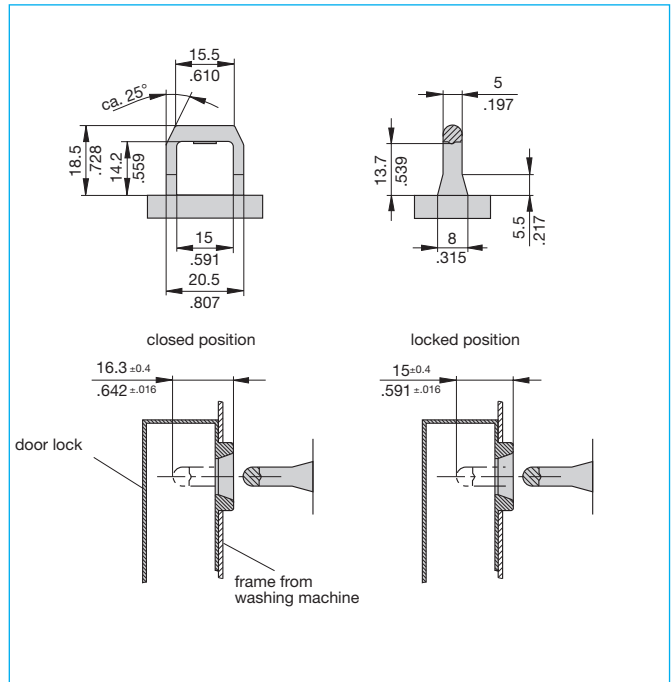
Technical data

Voltage rating	AC 230 V (50/60 Hz)
Current ratings	6 A (6 A)
Excitation voltage	AC 110...230 V
Duty cycle	1 % / 10 sec ON duty
Typical life	
electrical	60,000 cycles at 1 x I _N
mechanical	60,000 operations
Ambient temperature	0...+60 °C (+32...+140 °F) T 60
Insulation co-ordination (IEC 60664)	2 kV/2 reinforced insulation at locking aperture
Dielectric strength (EN 60730)	
locking aperture/ circuits 1-2-3	test voltage AC 3,750 V
Insulation resistance	> 100 MΩ (DC 500 V)
Degree of protection (IEC 60529)	locking aperture IP20 terminal area IP00
Vibration	2 g (57-500 Hz), ± 0,15 mm (10-57 Hz), to IEC 60068-2-6, test Fc, 10 frequency cycles/axis
Shock	5 g (11 ms), to IEC 60068-2-27, test Ea
Humidity	48 hours at 95 % RH, to IEC 60068-2-3, test Ca
Locking force	≥ 350 N
Mass	approx. 75 g

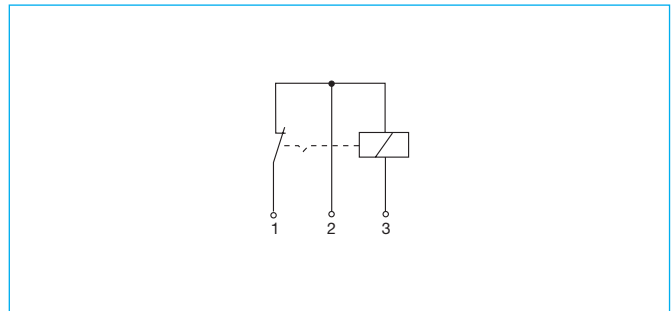
Dimensions



Door pin (not part of the product)



Internal connection diagram



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Description

Bimetal operated single pole motor protection controls with automatic reset actuation, small physical size, reliable snap-action mechanism.

Caution: In specifying these 2 products, care should be taken to ensure that automatic motor re-start does not represent a safety hazard.

Typical applications

Motors, transformers, extra low voltage wiring.

Ordering information

Type No.	
2-6500	surface type with flange
Terminal design	
P10	blade terminals 6.3-0.8 (QC .250)
Shunt terminal (optional)	
A3	blade terminals or solder terminals; max. load 5 A
Current ratings	
0.1...10 A	
2-6500 - P10 - ... - 6 A ordering example	

The exact part number required can be built up from the table of choices shown above. Ordering references for optional features should be omitted if not required.

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
0.1	140	2	0.47
0.2	47.5	2.5	0.33
0.3	20.5	3	0.212
0.4	11.4	3.5	0.155
0.5	7.25	4	0.107
0.6	5.35	4.5	0.095
0.7	3.8	5	0.072
0.8	2.95	6	0.054
1	1.92	7	0.032
1.2	1.32	8	0.02
1.5	0.85	9	< 0.02
1.8	0.59	10	< 0.02



2-6500-...

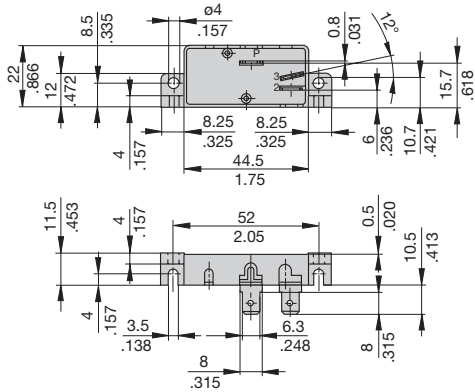
Technical data

Voltage rating	AC 250 V (50/60 Hz); DC 28 V	
Current ratings	0.1...10 A (up to 15 A upon request)	
Typical life	100,000 operations at $2 \times I_N$ Protection is ensured for 18 days of continuous locked rotor condition with $I_k \leq 6 \times I_N$, max. 30 A (unsupervised duty)	
Ambient temperature	-10...+60 °C (-10...+140 °F)	
Insulation co-ordination (IEC 60664 and 60664 A)	rated impulse withstand voltage	pollution degree
	2.5 kV	3
Dielectric strength (IEC 60664 and 60664A)	test voltage AC 2,000 V	
Insulation resistance	> 100 MΩ (DC 500 V)	
Interrupting capacity	$8 \times I_N$ (co-co-co)	
Reset time at 23 °C	≥ 30 sec ≤ 70 sec	
Degree of protection (IEC 60529/DIN 40050)	housing IP30	terminal area IP00
Vibration	5 g (57-500 Hz) ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc 10 frequency cycles/axis	
Shock	15 g (11 ms) test to IEC 60068-2-27, test Ea	
Corrosion	48 hours at 5 % salt mist to IEC 60068-2-11, test Ka	
Humidity	240 hours at 95 % RH test to IEC 60068-2-3, test Ca	
Mass	approx. 20 g	

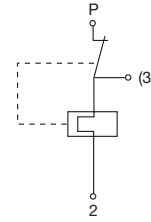
Approvals

Authority	Voltage rating	Current rating
UL	AC 250 V; DC 28 V	0.1...10 A

Dimensions

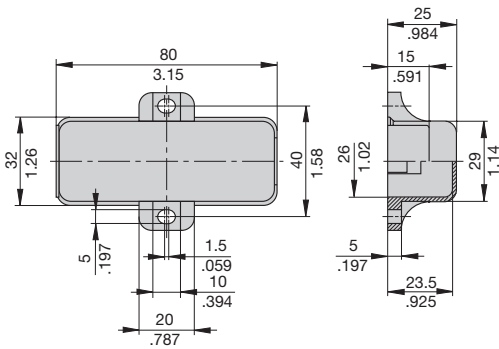


Internal connection diagram

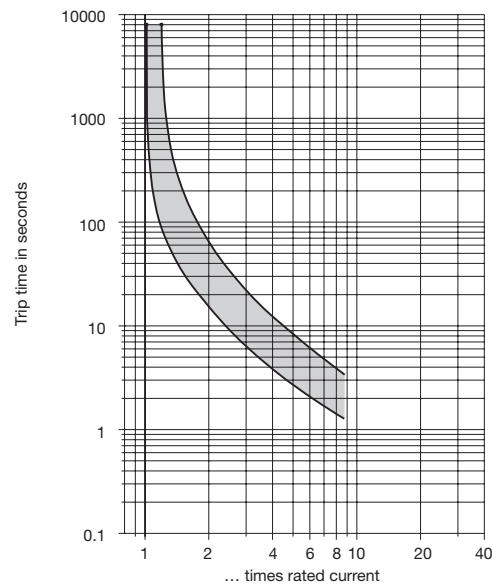


Accessories for type 2-6500

Cover Y 302 151 01
with flange and holes that may be filed out for cable entry



Typical time/current characteristics at +23°C/+73.4°F



The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section 9 – Technical information.

Ambient temperature °F	+14	+32	+50	+73.4	+86.1	+104	+122	+140
°C	-10	0	+10	+23	+30	+40	+50	+60
Derating factor	0.84	0.92	1	1	1	1.08	1.16	1.24

This is a metric design and millimeter dimensions take precedence ($\frac{\text{mm}}{\text{inch}}$)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Description

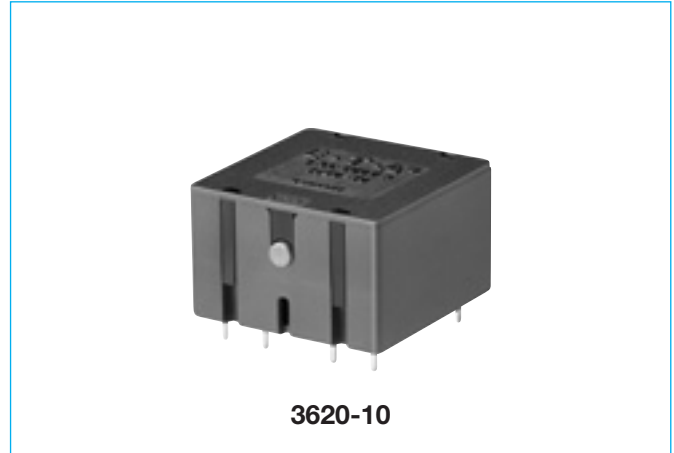
Four pole, voltage-sensitive thermal relay with bimetal operation.
Suitable for PCB mounting.
Manually or automatically resettable.

Typical applications

Motor protection, pump protection, drive protection. External sensor provides all-pole disconnection of loads.

Ordering information

Type No.	
3620	Four pole thermal relay (3 pole + auxiliary circuit)
Configuration	
10	standard version
20	autoreset version
Voltage rating	
400 V	
3620 - 10 - 400 V	ordering example

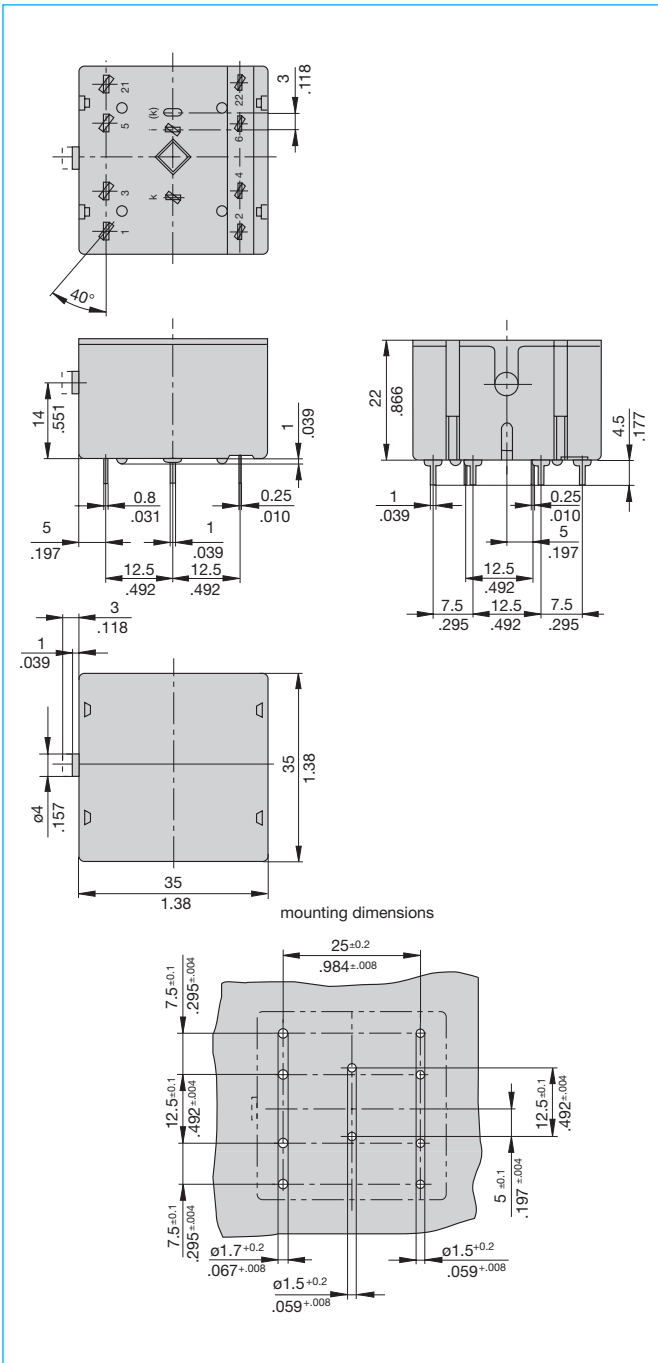


3620-10

Technical data

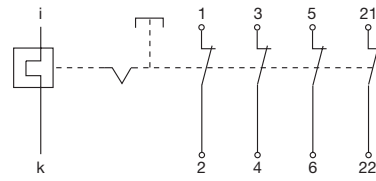
Voltage rating	3 AC 400 V (50/60 Hz)	
Current rating	≤ 10 A	
Auxiliary circuit	10 A AC 400 V (50/60 Hz)	
Excitation voltage	≤ AC 230 V (50/60 Hz) other voltages upon request (e. g. 24 V)	
Typical life	2,000 operations at I _N	
Ambient temperature	0...+100°C (+32...+212 °F)	
Insulation co-ordination (IEC 60664-1)	rated impulse withstand voltage 2.5 kV	pollution degree 2 reinforced insulation in operating area
Dielectric strength	test voltage	
operating area	AC 2,750 V	
mounting area	AC 2,000 V	
circuit/circuit	AC 2,000 V	
circuit/excitation	AC 2,000 V	
Insulation resistance	> 100 MΩ (DC 500 V)	
Trip time at 23 °C	< 30 sec	
Reset time at 23 °C (without load period)	< 80 sec	
Degree of protection (IEC 529/DIN 40050)	terminal area IP00 operating area IP40	
Vibration	5 g (57-500 Hz), ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc 10 frequency cycles/axis	
Shock	15 g (11 ms) to IEC 60068-2-27, test Ea	
Corrosion	48 hours in 5 % salt mist to IEC 60068-2-78, test Ka	
Humidity	168 hours at 95 % RH to IEC 60068-2-3, test Cab	
Mass	approx. 25 g	

Dimensions

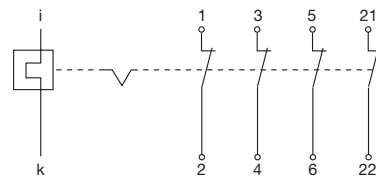


Internal connection diagram

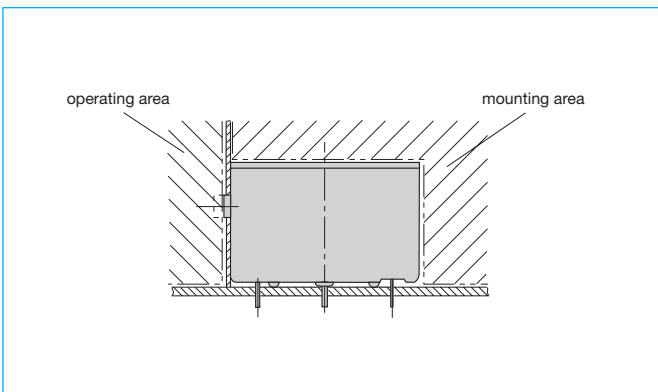
3620-10



3620-20



Installation drawing



This is a metric design and millimeter dimensions take precedence ($\frac{\text{mm}}{\text{inch}}$)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

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