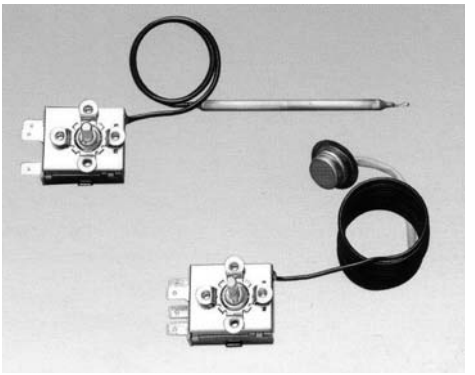
pag

TERMOSTATI
THERMOSTATS

TEMPOMATIC® S.R.L.

TEMPERATURE CONTROL WITH S.P.S.T OR S.P.D.T. SWITCH - THERMOSTAT

ZA SERIES



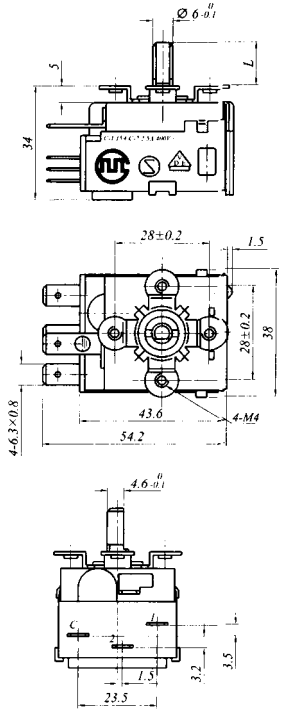
Terminal C-1 opens at temperature rise
Terminal C-2 closes at temperature rise

Breaking Capacity

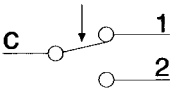
C-1: 15(3)A AC400V
C-2: 2.5(0.6)A AC400V

Approval: VDE,CCEE,SEMKO

Construction/Dimensions



Typical Electrical Wiring Diagram



Technical Specifications

Control range: -35~+320°
Tolerance on operating range: 3~~12K
Differential range: 1~~17K
Maximum ambient temperature: T110°C
Dial shaft torque: <0.4N.m
Life of product: >100,000 cycle

Control shown in position HIGH according to standard type, other dial shaft positions on request.
The operating temperature above is at 25°C ambient temperature, if the ambient temperature changes, the operating temperature needs modified.

Typical Applications

Water heater — Water boiler
Washing machine — Electric oven

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TERMOSTATO CON RIARMO MANUALE

Tipo: WYF-S

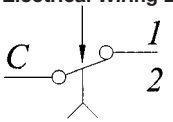
TEMPERATURE CONTROL WITH S.P.S.T. OR S.P.D.T SWITCH

Type: WYF-S

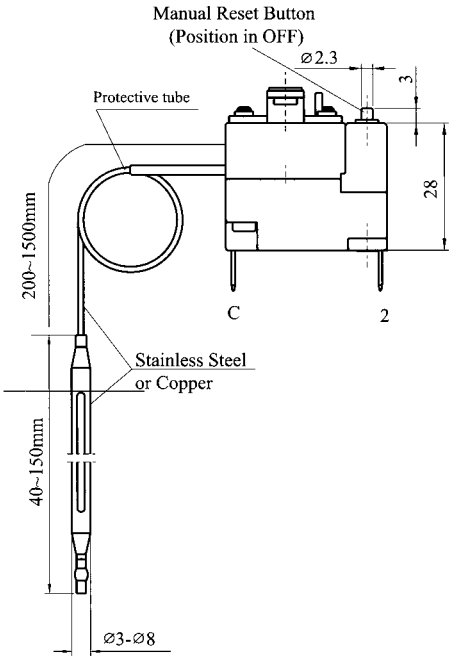
Compact design
Ceramic Switch
Manual Reset

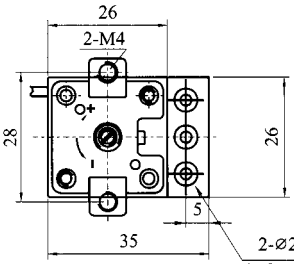
Technical Specifications
- Control range: 50~320 °C
- Tolerance on operating range: 3~12K
- Max ambient Temp.: T150
- Life of contacts: 6.000 cycles

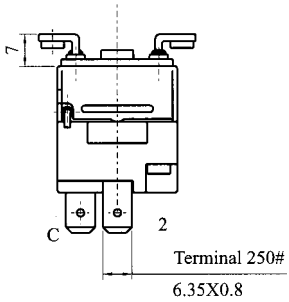
Typical Electrical Wiring Diagram



Construction / Dimensions







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TERMOSTATO ELETTRICO BEWA

Tipo: B Emerson Electric 716 RU

Caratteristiche Generali:
Da applicarsi con apparecchiature che richiedono una regolazione della temperatura. Può essere utilizzato sia in immersione che in aria.
Il fissaggio è ottenuto mediante due viti.
A richiesta viene fornito con o senza manopola di regolazione.
Il bulbo sensibile è raccordato alla custodia, in acciaio zincato, mediante un capillare della lunghezza standard di m. 1,50.
Raccordi elettrici su faston.

DATI TECNICI:

Contatti:	15 A - 250/380 V
Precisione di scatto:	± 3°C
Differenziale:	6° ± 2°C
Accessori:	Manopola graduata
	Ghiera in acciaio
	Niplo per fissaggio
	Quadrante graduato

Gradazioni standard: 0°/70°C; 0°/100°C; 0°/150°C; 0°/300°C; 80°/120°C; 50°/90°C ecc
Il termostato è omologato su norme:
VDE - ⨌ - S.N.D.
Disponibile catalogo specifico.

ELECTRIC THERMOSTAT BEWA

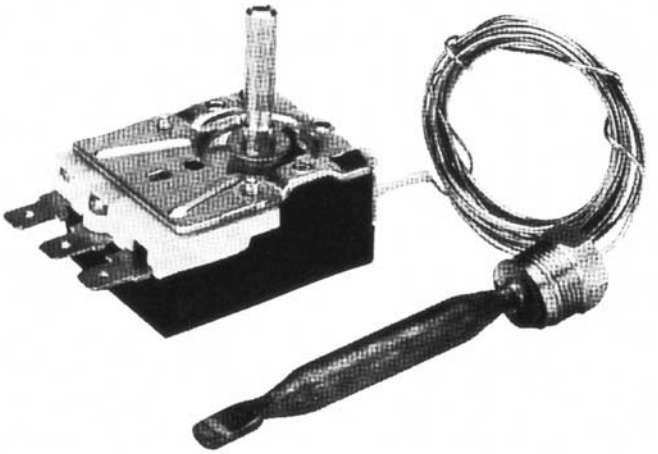
Type: B Emerson Electric 716 RU

GENERAL FEATURES:
To be applied to equipments requiring a temperature regulation.
It can be used either into water on in the air.
The clamp is obtained thanks to two screws.
On request it can be supplied with or without a regulation hand grip.
The sensible bulb joints the galvanized steel housing, thru a capillary whose standard length is 1,50 m.
Electric connectors on faston.

TECHNICAL DATA:

Contacts:	15 A - 250/380 V
Release precision:	± 3°C
Differential:	6° ± 2°C
Accessories:	Graduated hand grip
	Steel metal ring
	Nipple for attachment

Standard graduations: 0°/70°C; 0°/100°C; 0°/150°C; 0°/300°C; 80°/120°C; 50°/90°C etc.
The thermostat has homologations for:
VDE - ⨌ -S.N.D.
Specific catalogue available.



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THERMOSTAT

Type: 724 RF

APPLICATION:
- Washing machines
- Spin dryers
- Dish washing machines
- Heating boilers

APPROVALS:
VDE; TUV; NEMKO; DEMKO

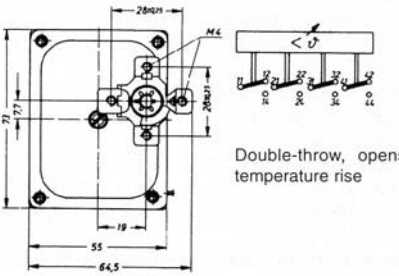
BULB:
- Circolar bulb (copper or stainless steel)
- Button style bulb with rubber gasket
- Profile bulb (copper)

SWITCHING OUTPUT:
- 16 A at 380 VAC ohmic load

NOTE:
- Special executions on request

Four-stage temperature regulator one stage adjustable (R-Stage), three stages pre-set (F-Stage).

Circuit diagram 724 RF



built-in height = 57,5

Double-throw, opens on temperature rise

THERMOSTAT

Type: 722 VS

APPLICATION:
- Spin dryers
- Hot water appliances
- Accumulators / convectors

APPROVALS:
VDE; TUV

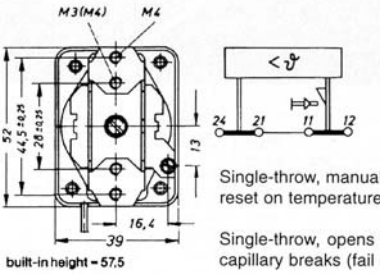
BULB:
- Circolar bulb (copper or stainless steel)
- Profile bulb (copper)

SWITCHING OUTPUT:
- 16 A at 380 VAC ohmic load

NOTE:
- Special executions on request

Single-stage pre-set fail safe temperature limiter.

Circuit diagram 722 VS



built-in height = 57,5

Single-throw, manual reset on temperature rise

Single-throw, opens when capillary breaks (fail safe)

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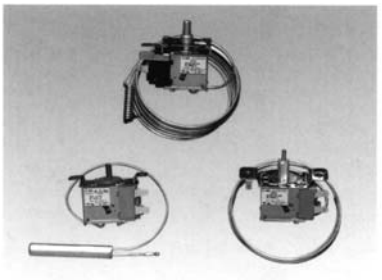
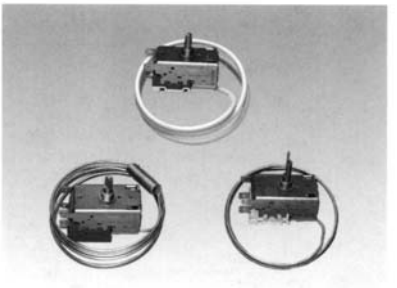
TERMOSTATI PER IL FREDDO

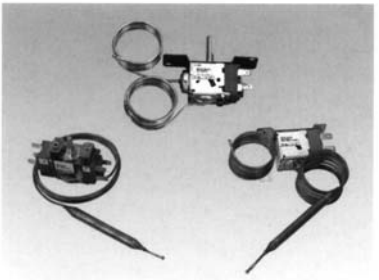
THERMOSTATS FOR ELECTRIC COOLING APPLIANCES



WP,WS,WD,WX SERIES PRESSURE THERMOSTATS
FOR REFRIGERATORS/FREEZERS
Electrical Ratings:AC250V 4FLA/24LRA



KP,KS,KD,KX,KZ SERIES THERMOSTATS
FOR REFRIGERATORS/FREEZERS
Electrical Ratings:AC250V 6FLA/36LRA

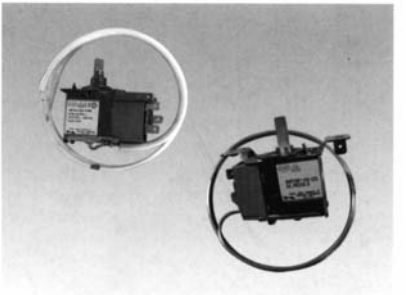


WH SERIES TWO SENSOR LOGIC TYPE THERMOSTAT FOR REFRIGERATORS
Operating Range: -30~+10℃
Adjustable Range: 5~20℃
Constant ON Temp: 0~8℃
Electrical Ratings: 250VAC 6(6)A

WC SERIES TWO SENSOR DIFFERENTIAL THERMOSTAT FOR AIR CONDITIONERS
Available temp. range: -20~+20℃
Diff.: 6-25℃
Two sensor diff.: 7-13℃
Adjustable temp.range: (fixed type)

WE SERIES TWO-STEP THERMOSTAT FOR AIR CONDITIONERS
Available temp.range: -35~40℃
Adjustable temp. range: Max. 17℃
Diff.: 2-5℃
Stop diff.: 2-5℃ (or 0℃)

NWP/WD-E SERIES EXPLOSION PROTECTED THERMOSTAT
FOR REFRIGERATORS/FREEZERS
Electrical Ratings: 250VAC 5(4)A
Operating Temp.: -36~15℃
Adjustable Range: Max.25℃



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TERMOSTATO

Tipo: KSD 300 serie

CARATTERISTICHE GENERALI:
Si usa in campo elettrico, con forni a microonde, con i motori, termos, caffettiera elettrica, condizionatori ad aria fredda e come termostato decongelatore nei frigoriferi.

NOTA: Sia la parte terminale che la temperatura di funzionamento possono essere facoltativamente selezionate a seconda delle richieste del cliente.

THERMOSTAT

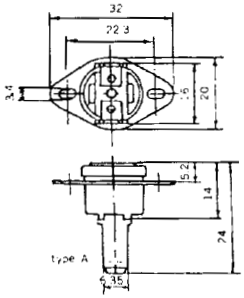
Type: KSD 300 series

GENERAL FEATURES:
For use in electric, microwave ovens, motors, electric thermal flasks, electric coffee pots, cold-heat airconditioners and as defrost thermostat in refrigerators, etc.

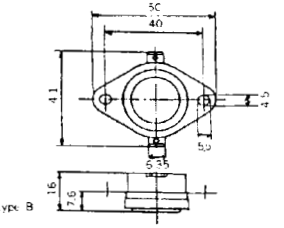
NOTE: The terminal type and the operating temperature performance can be optionally selected depending on customers' requirements.

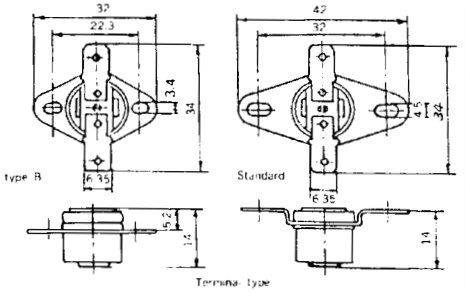
TYPE	OFF Temp	Operating Temp. Diff.		Allowed Temp. Range	Max Working (AC resistive Load) Current
		OFF	ON		
300	65 ~ 135°C	±5°C ±4°C ±3°C	- - -	10 ~ 25°C	5A
302	50 ~ 80°C	±4°C	±4°C	15 ~ 30°C	15A
303	8 ~ 16°C	±3°C	±3°C	10 ~ 25°C	3A

type 301



type 302





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TERMOSTATI KO/KS/KB

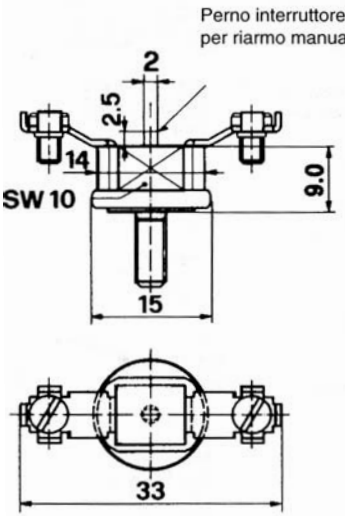
DESCRIZIONE:
I termostati della serie KO/KS/KB sono apparecchi di ridottissime dimensioni che permettono un passaggio di corrente fino a 16 A ed hanno un dispositivo di intervento a scatto rapido. Questi termostati sono utilizzabili sia per mantenere costante la temperatura (con contatti normalmente chiusi NC o normalmente aperti NA) sia come controllo, sia come termostati di sicurezza con dispositivo di ripristino manuale, in questo caso si ha un contatto NC. Questi termostati trovano le loro principali applicazioni in:

- Apparecchi elettrodomestici
- Avvolgicavi
- Stufette elettriche
- Scambiatori di calore

Approvazioni: SEV; VDE; NEMKO; SEMKO; DEMKO; FEMKO; KEMA; UL

FUNZIONAMENTO:
I termostati della serie KO/KS/KB intervengono ad una temperatura fissata che provoca lo scatto rapido del disco bimetallico. Questo e' meccanicamente connesso con un ponte porta contatti e determina l'apertura degli stessi.

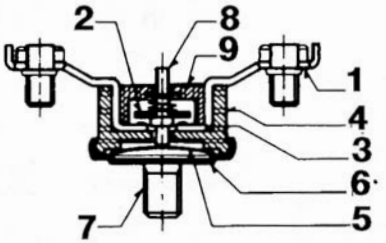
DIMENSIONI D'INGOMBRO



DATI TECNICI:

- Potere d'interruzione (test classe I): 16 (6) A 250 V - 10.000 cicli
- Minima velocità di variazione della temp.: 10°K/min.
- Differenziale di scatto: circa 10°K
- Contatti elettrici: Argento puro
- Temp.a massima: T 100°C (altre temperature su richiesta
- Isolamento elettrico: Custodia esterna non in tensione
- Intervento: Indipendente dal carico elettrico

Schema di funzionamento



LEGENDA:

1 = morsetti
2 = contatti mobili
3 = contatti fissi
4 = custodia
5 = disco bimetallico
6 = superficie di trasmissione del calore
7 = vite di fissaggio
8 = pulsante di riarmo manuale (se previsto)
9 = custodia superiore

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TERMOSTATI BIMETALLICI A SCATTO RAPIDO CON RIPRISTINO AUTOMATICO O MANUALE

Dimensioni dettagliate: **Serie KO/KS, con riarmo automatico** Tipi di collegamento elettrico:

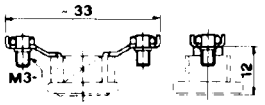


Fig. 1 Morsetti a vite per cavo fino a 1,5 mm²

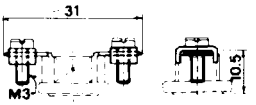


Fig. 2 Morsetti a vite per cavo fino a 2,5 mm²

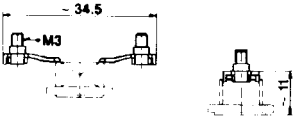


Fig. 3 Morsetti a vite superiore

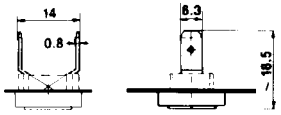


Fig. 4 Connettore verticale 6,3x0,8 verso l'alto

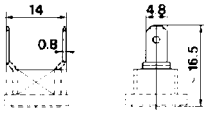


Fig. 5 Connettore verticale 4,8x0,8 verso l'alto

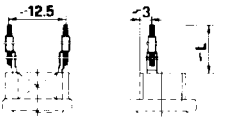


Fig. 6 Cavetto isolato 0,5 mm² lungh. l=150, 300, 600 mm

Serie KB con manuale **Tipi di collegamento elettrico:**

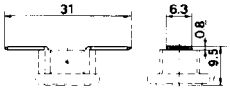


Fig. 7 Connettore laterale 6,3x0,8 verso l'alto

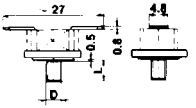


Fig. 8 Connettore laterale 4,8x0,8 verso l'alto

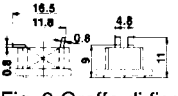


Fig. 9 Graffe di fissaggio laterale/sup. senza chiavetta

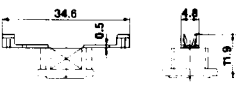


Fig. 10 Connettore da "crimpare" 0,5 lat.

Varianti di fissaggio

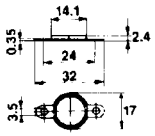


Fig. 11 Flangia piegata con fissaggio sui due lati

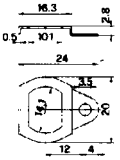


Fig. 12 Flangia piegata con fissaggio su un solo lato

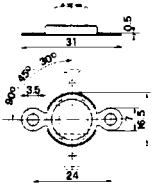


Fig. 13 Coperchio con flangia di fissaggio

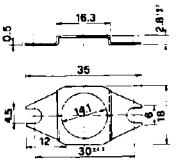


Fig. 14 Flangia specifica per vite M4

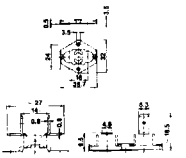
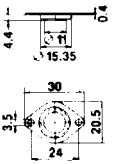


Fig. 15 Flangia specifica per 2 termostati



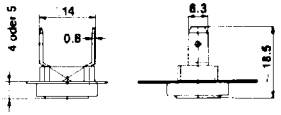


Fig. 16 Flangia con armatura su ambedue i lati, approfondita 4 mm (5 mm)

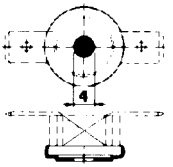


Fig. 17 Disco bimetallico aperto

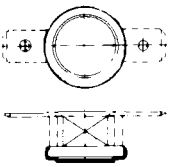


Fig. 18 Disco bimetallico chiuso

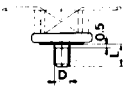
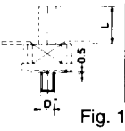


Fig. 19 Viti di fissaggio

D	L
M4	6
M4	10
M3	6
M3	6



D	L
Ø4	17
Ø4	n.V.

Fig. 17 Pulsante allungato per guardia limite

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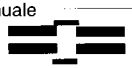
Indice delle sigle

KO/KS

Riarmo automatico

Riarmo manuale — KB



XXX
XXX

XXX ± XX
XXX ± XX

FIG. 1 MORSETTIERA A VITE PER CAVO FINO A 2,5 mm²			0
FIG. 2 MORSETTIERA A VITE PER CAVO FINO A 2,5 mm²			5
FIG. 3 MORSETTO A VITE SUPERIORE			9
FIG. 4 CONNETTORE	6,3 X 0,8 LATERALE		1
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FIG. 12 FLANGIA CON FISSAGGIO SU UN SOLO LATO PIEGATA			2
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FIG. 13 COPERCHIO CON FLANGIA DI FISSAGGIO		30°	9
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FIG. 16 FLANGIA CON ARMATURA SU AMBEDUE I LATI,	APPROFONDITA		C
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FIG. 17 VITI DI FISSAGGIO	M4 X 10 mm		6
FIG. 17 VITI DI FISSAGGIO	M3 X 6 mm		7
FIG. 17 VITI DI FISSAGGIO	M5 X 6 mm		5
FIG. 18 DISCO BIMETALLICO CHIUSO			0
FIG. 19 DISCO BIMETALLICO APERTO			1
FIG. 20 PULSANTE ALLUNGATO PER GUARDIA LIMITE L=11 mm			2
FIG. 20 PULSANTE ALLUNGATO PER GUARDIA LIMITE L= 6 mm			3
FIG. 20 PULSANTE ALLUNGATO PER GUARDIA LIMITE L= 4 mm			4

	TOLLERANZA ±10° K °C	TOLLERANZA ±5° K °C	TOLLERANZA ±3° K °C
005	-	5°	5°
015	15°	15°	15°
020	20°	20°	20°
030	30°	30°	30°
035	-	35°	35°
040	40°	40°	40°
042	-	-	42,5°
045	-	45°	45°
047	-	-	47,5°
050	50°	50°	50°
053	-	-	53°
056	-	56°	56°
060	-	-	60°
063	63°	63°	63°
067	-	-	67°
071	-	71°	71°
075	-	-	75°
080	80°	80°	80°
085	-	-	85°
090	-	90°	90°
095	-	-	95°
100	100°	100°	100°
106	-	-	106°
112	-	112°	112°
118	-	-	118°
125	125°	125°	125°
132	-	-	132°
140	-	140°	140°
150	-	150°	-
160	160°	160°	-
170	-	-	-
180	180°	-	-
190	190°	-	-

Esempio d'ordinazione: **KS 660 ±05**= riarmo autom. cavetto isolato sez. 0,5 mm² lunghezza = 150 mm fissaggio a vite M4 x 10; disco bimetallico chiuso; contatto NA temperatura di scatto 71°C
KS 110 071 ±05G = 6,3 laterale, flangia piegata con fissaggio su due lati, contatto in oro
KS 110 071 ±05R = 6,3 laterale, flangia piegata con fissaggio su due lati, coperchi 18/8

Temperatura 270°C possibile con PEEK

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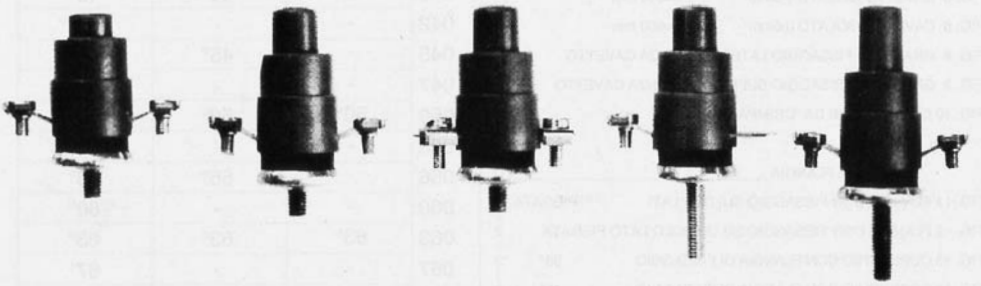
TERMOSTATI DI SICUREZZA

Tipo: KBF

DESCRIZIONE:
I termostati della serie KBF sono apparecchi di ridottissime dimensioni molto versatili, dotati di un meccanismo a scatto rapido che permette un passaggio di corrente fino a 16 A. Un interruttore é collegato al meccanismo di reset.
Il termostato KBF può essere installato ovunque sia necessaria una protezione contro la sovratemperatura e si disponga di spazi ridotti:

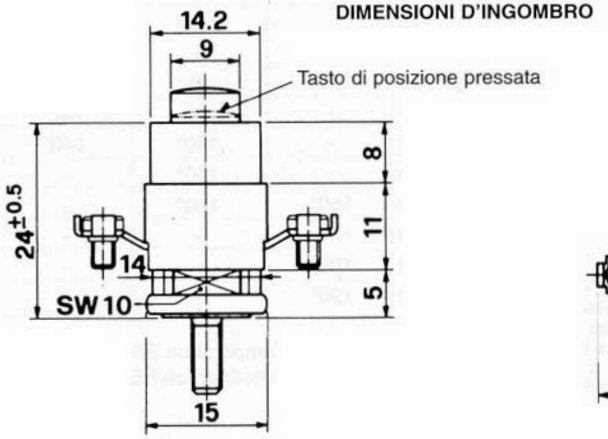
- Apparecchi elettrodomestici
- Avvolgicavi
- Stufette elettriche
- Scambiatori di calore

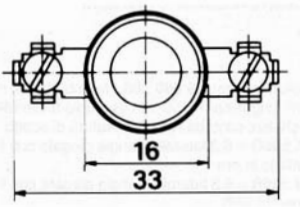


Approvazioni: SEV; VDE; NEMKO; SEMKO; DEMKO; FEMKO; KEMA; UL

FUNZIONAMENTO:
I termostati della serie KBF (limitatori con tasto) intervengono ad una temperatura fissata che provoca lo scatto rapido del disco bimetallico. Il movimento a molla del disco bimetallico e' trasmesso meccanicamente ad un contatto a ponte che interrompe il circuito elettrico. Tale circuito puo' essere ripristinato manualmente premendo l'apposito tasto di reset.

DIMENSIONI D'INGOMBRO





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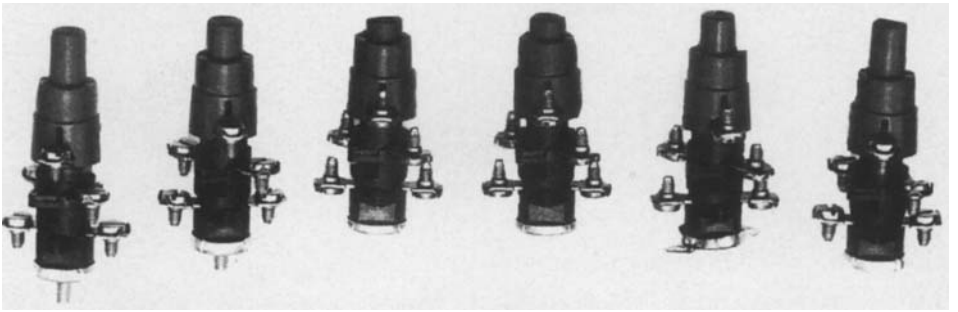
THERMOSTAT

Tipo: 3 KBF

DESCRIPTION:
The extremely compact 3 KBF thermostat with a snap-action disk tolerates current load of cup to 16 A and is very versatile. As a trip-switch it is fitted with a mechanical reset and a double fuse. The 3 KBF thermostat can be installed wherever a protection against overheating is needed in the most restricted spaces:

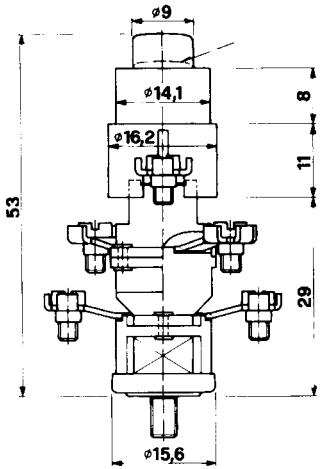
- Cable rolls
- Electrical appliances
- Heating appliances
- Heat exchangers

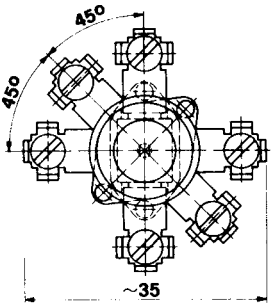


Tested: SEV; VDE

MODE OF ACTION:
The 3 KBF thermostat (limiter with trip-switch) reacts to a set temperature which triggers the snap-action of a bimetallic disk. This sping movement of the bimetallic disk is transmitted mechanically by a trasmission pin to a bridge-contact, so that the circuit is interrupted by the (manually operated) reset button.

DIMENSIONS:





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CERAMIC THERMOSTAT CO/CS/CB

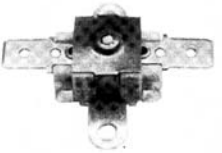
Ceramic Thermostat witn snap-action disk: regulator, automatic controller, limiter

Applications

The very compact ceramic-bodied thermostats are designed for current loads of up to 16A and have a wide range of applications. These thermostats can be used in regulator applications to maintain a constant temperature (normally closed or normally open); they can be used as thermal switches in monitoring applications (normally closed or normally open); or they can be used as limiters (normally closed) with mechanical resetting. The thermostats are used everywhere where overheating protection is required in a minimum of space.

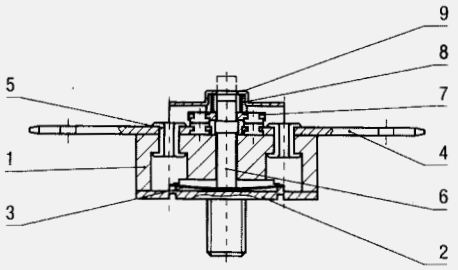
- domestic appliances
- heating appliances
- heat exchangers
- electrical equipment
- hotplates





Mode of action

The termostats respond to a fixed temperature that is determined by a snap-action bimetallic disk. The action of the bimetallic disk is mechanically transmitted to a bridge contact via a transfer pin, so that the electrical circuit is either open or closed, depending on the state of the bimetallic disk.



1 = Housing (Ceramic)
2 = Heat-conducting plate
3 = Bimetall element
4 = Connection terminals
5 = Rivet
6 = Switching pin
7 = Bridge Contact
8 = Spring
9 = Cover

Switching performance

CS	16 A 250 V 6000 switches
CO	10 A 250 V 30 000 switches
CB	16 A 250 V 1 000 switches

Maximum speed of temperature change	20 °K/min
Differential gap	30°–60°C (smaller values on request)
Maximum switching temperature	350 °C
Electr. insulation	>2800V
Design	As per EN 60730 • micro-contact-breaker • type 1
Contact material	Silver alloy (gold-plated on request)
Approval	SEV, VDE

It is responsibility of the customer to verify the suitability for the intended use. We can provide no guarantees in this regard. However, we will be happy to advise you.

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TERMOSTATO BIMETTALLICO

Tipo: KST501

Applicazioni
Radiatori caldaie ventole riscaldanti, stufe, forni.

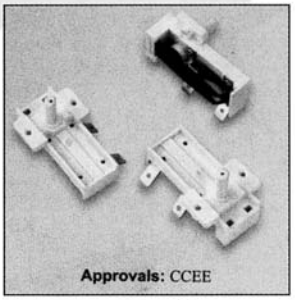
Specifiche tecniche
- Temp. di lavoro: 0~55°C; 0~70°C; 0~80°C; 0~95°C; 0~105°C; 0~120°C; 0~160°C;0~280°C;
- Tolleranza temp. stacco: ±5K; ±8K; ±10K; ±15K;
- Differenziale: 1~4.5K; 1~6K; 1~10K; 1~15K; 1~20K; 1~25K;1~30K; 1~35K;
- Potenza d'impiego: AC250V 5A/10A, 50~60Hz carico resistivo
- Max Temp. ambiente: 90°C; 120°C; 180°C;
- Angolo rotazione asse: ≤300°
- Vita contatti: 30.000 cicli
- Tipo contatti: S.P.S.T
- Standard: accordo a JB/T3751-1997; GB14536.1~1998

BIMETAL THERMOSTAT

Type: KST501

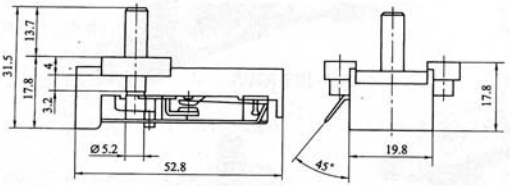
Application
Heat radiator, Heater, Fan Heater, Quarts Heater, Oven.

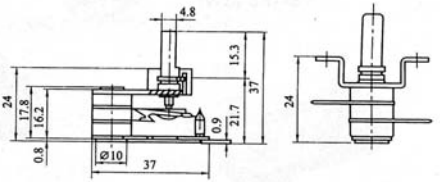
Technical Specification
- Working Temp.: 0~55°C; 0~70°C; 0~80°C; 0~95°C; 0~105°C; 0~120°C; 0~160°C;0~280°C;
- Cut-out Temp. Tolerance: ±5K; ±8K; ±10K; ±15K;
- Differential: 1~4.5K; 1~6K; 1~10K; 1~15K; 1~20K; 1~25K;1~30K; 1~35K;
- Electric Ratings: AC250V 5A/10A, 50~60Hz resistive load
- Max. Ambient Temp.: 90°C; 120°C; 180°C;
- Shaft Rotating Angle: ≤300°
- Contacts Life:: 30.000 cycles
- Contacts Form: S.P.S.T
- Standards: According to JB/T3751-1997; GB14536.1~1998

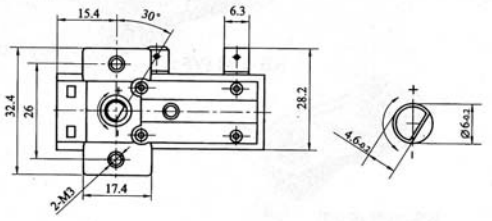


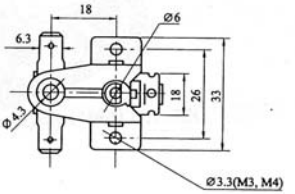
COSTRUZIONE / DIMENSIONI

CONSTRUCTION / DIMENSIONS









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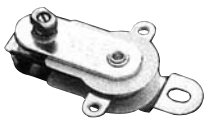
TERMOSTATI BIMETALLICI

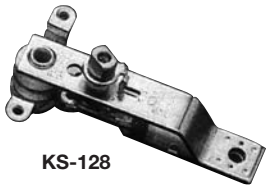
Serie KS100

ADJUSTABLE BIMETAL THERMOSTAT

KS100 Series

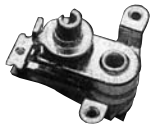


KS-118



KS-128

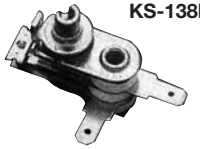
KS-138A



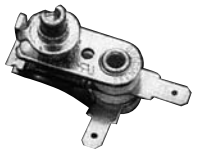
KS-138D

KS-138

KS-138C

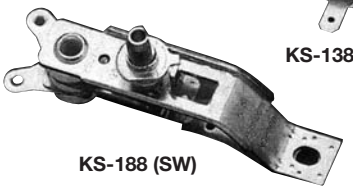


KS-138B

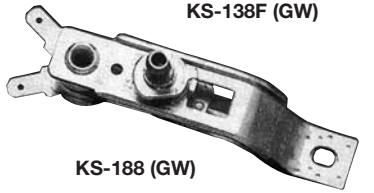


KS-138F (SD)

KS-138F (GW)



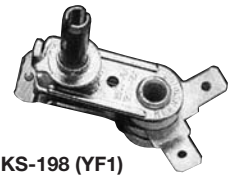
KS-188 (SW)



KS-188 (GW)

KS-198 (SW)

KS-198 (NW)



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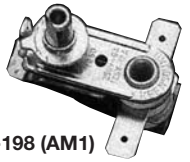
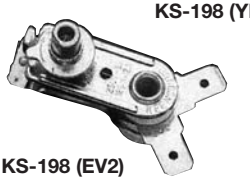


KS-198 (AM1)



KS-198 (EV2)

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THERMOSTAT FOR HOME APPLIANCES

Model: KS-108 series

Application
• When properly employed, this thermostat is suitable for heavy loading (large electric current) appliances such as dry /steam iron, waffle maker, hot tray, electric stove, cooking oven, kitchen wear and heaters ... etc.

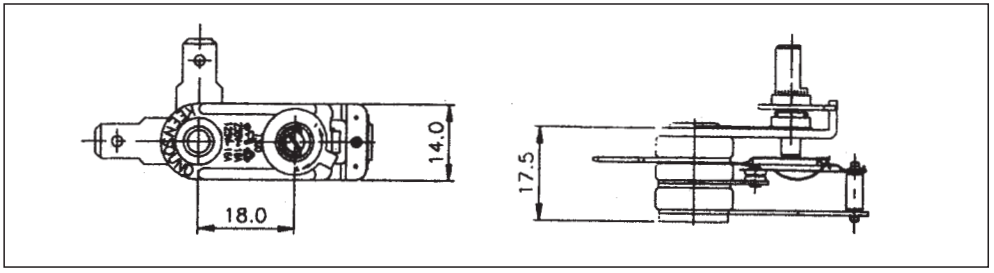
Specification

• Function:	Single pole, the contact opens when the temperature is reached
• Standard rating:	[UL & CUL] 125 V ac 16A [VDE & CE] 250 V ac 16A
• Number of Automatic Cycles for each Automatic Action:	[UL & CUL] 30,000 cycles [VDE & CE] 30,000 cycles
• Maximum temperature:	[All standard] 250 °C
• Temperature setting range:	[All standard] 0 - 250 °C
• Tolerance of operation range:	+/- 10 °C
• Switching differential:	10-30K depending on mounting and design
• Turning range:	≈ 300° ∠ limited turning ranges
• Speed of temperature change:	> 1K / min.

Connection
• Push-on terminal (for receptacle 4,8 mm or 6,3 mm) and M3 screw terminal are alternative.

Dimensions
• Length of control shaft and angle of terminal plates depend on customer requirement.
• All dimensions are only for reference.

Approvals: VDE - CE



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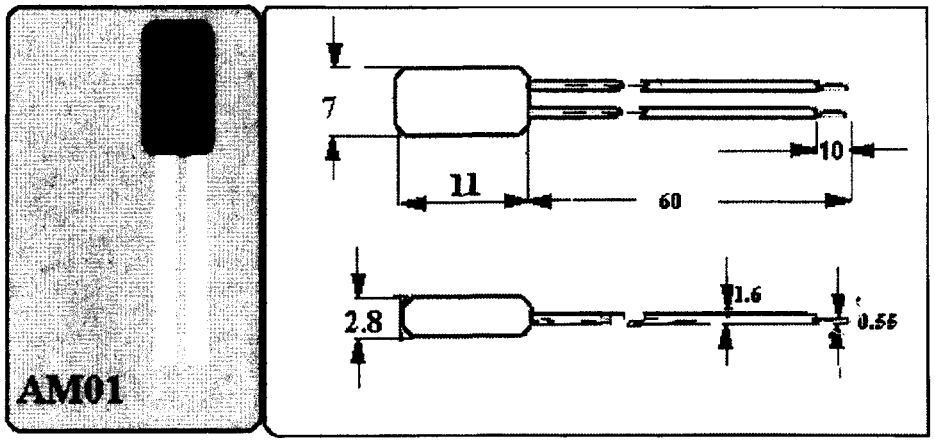
AM01 FOR COIL WINDINGS MOTORS TRANSFORMERS BALLASTS

Motoprotettore termostatico - Motorprotector

The 5 x 5 mm size bimetal snap action disc operates an electric contact. It breakes or makes within a temperature range from 50° C to 160° C with a differential of 15 to 45 degree. The housing is of thermosetting epoxy and therefore withstands mechanical stress and peak temperatures.
Ratings are 2.5 (1.6) A 250 V AC at 10.000 oper. Max. current is 4 A at cosγ = 1. The housing is sealed for impregnation together with the windings.
Standard terminals are 2 silicone lead wires 0.25 mm^2 of 60 mm lenght. 0.6 dia bare copper wire with a pitch of 5 (5.08) mm are available as well as specified wiring according to the drawings.
An alternate type with reinforced contacts (AM06) breaks 5 (3.2) A 250 V AC.

Electrical ratings:	Rated Voltage	250 VAC , 50 - 60 Hz.
	Load	2,5 A cos φ = 1,0 (In)
		1,6 A cos φ = 0,6 (Ix)
	Maximum load	4,0 A cos φ = 1,0 .
Electrical strength of the insulation:		1,25 kV , 50 Hz.
Temperature range:		+50°C to 160°C.
Working temperature of the output leads:		- 60°C to +180°C
Temperature tolerance:		± 5°C to ± 10°C
Contact system:		Normally Closed
Hysteresis zone:		From 15up to 45°C below the temp of release .
Resistance of the unit:		<50 mΩ
Life cycle at nominal load:		10,000 cycles
Sealing strength:		IP 34 has no addional coating
Approval:		BEAB CENELEC VDE



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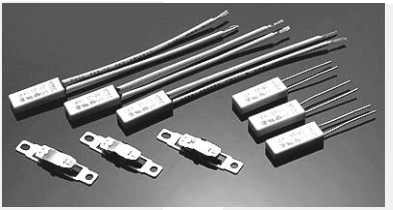
TERMOSTATO

Tipo: ST



Caratteristiche
Termoprotettori snap action bimetallici a riarmo automatico, alta risposta al calore. Solo per ST22: 100% impermeabile, involucro in resina PBT termoplastico isolato di alta qualità.

Applicazioni
ST22: protezione surriscaldamento dei motori elettrici, carica batteria, trasformatori, solenoidi, distribuzione riscaldamento, lampade di controllo fluorescenti, ecc
ST12: protezione surriscaldamento per asciugacapelli, ventilatori elettrici, macchine per popcorn, forni elettrici, asciugapiatti, ecc.

Scala di temperatura (non a carico) 65°C ~ 150°C

Tolleranza ±5°C

Differenziale di temperatura ON-OFF (generale) 30 ± 15K

Resistenza al calore
temperatura di apertura +50°C/continuità, 200°C/1 min.

Cicli di vita (carico resistivo)
ST22: 8A/125V 10.000 cicli, 5A/250V 10.000 cicli
ST12: 15A/125V 6.000 cicli, 10A/250V 6.000 cicli

Portata contatti
ST22: corrente minima 50mA/continuità, corrente massima 30A/5 cicli
ST12: corrente minima 100mA/continuità, corrente massima 30A/5 cicli

Sistema contatti
Normalmente chiusi

Approvazioni
UL - VDE

THERMOSTAT

Type: ST

Feature
Snap action, automatic reset bimetals, superior heat response.
Only for ST22: 100% water proof, high grade thermoplastic insulated PBT resin case

Application
ST22: overheat protection for electric motors, battery chargers, transformers, solenoids, heating pads, fluorescent ballasts, etc
ST12: overheat protection for hair dryer, electric fan heaters, popcorn machines, electric ovens, dish dryers, etc.

Temperature setting range (at no load) 65°C ~ 150°C

Tolerance ±5°C

ON-OFF Differential temp (general) 30 ± 15K

Heat endurance Open temp. +50°C/continuity, 200°C/1 min.

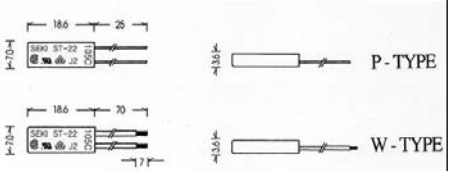
Life test (resistive load)
ST22: 8A/125V 10,000 cycles, 5A/250V 10,000 cycles
ST12: 15A/125V 6,000 cycles, 10A/250V 6,000 cycles

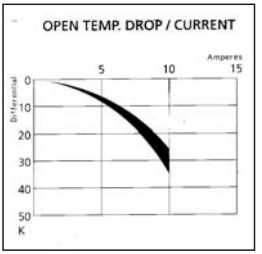
Contact capacity
ST22: min. current 50mA/continuity, max. current 30A/5 cycles
ST12: min. current 100mA/continuity, max. current 30A/5 cycles

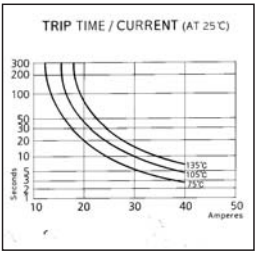
Contact system
Normally closed

Approvals
UL – VDE

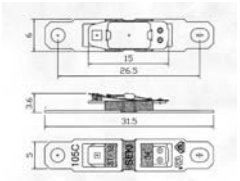
ST22

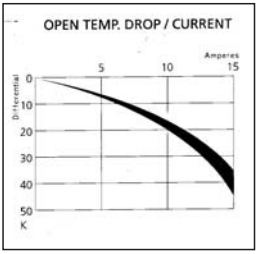


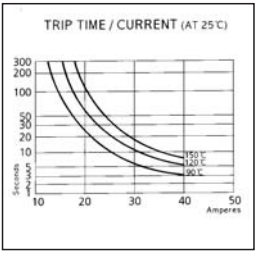




ST12







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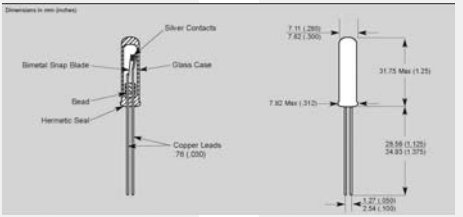
TERMOPROTETTORE IN AMPOLLA DI VETRO

Tipo: SB/ESB

Questa famiglia di protettori è costituita da un interruttore bimetallico a scatto rapido (snap action) racchiuso in un'ampolla di vetro completamente stagna. Ciò forma un apparecchio ultra affidabile ed estremamente versatile per tutte le applicazioni, e che lo rende leader nel campo dei protettori a ripristino automatico.
La serie SB e ESB, in ampolla di vetro, è stata realizzata per la protezione contro i danni dovuti a sovracorrente o surriscaldamento.
Approvazioni: UL, VDE, CSA.



Applicazioni tipiche
Protettori sui guasti di linea in:
- piccoli motori AC
- carica batteria
- regolatori di corrente
- trasformatori
- motori DC
- compressori (protezione interna)
- treni giocattolo
- batterie Ni-cad

Provata affidabilità
- test di vita effettuato per garantire l'operazione in condizioni estreme
- soddisfa ampiamente le richieste del mercato dell'automotive e di quei mercati ove venga richiesta una termoprotezione

Caratteristiche
- sigillato ermeticamente
- compatto
- temperatura di apertura da 60°C a 170°C con aumenti di 5°C
- scatto rapido (snap action)
- conduttori in rame o in rame stagnato

Vantaggi del design
- al sicuro dalle penetrazioni di fluidi o gas
- protezione contro la corrosione
- non necessita di ulteriori isolazioni
- può operare in ambienti ad alta pressione
- aumenta la sicurezza del prodotto finale

GLASS ENCAPSULATED THERMAL PROTECTOR

Type: SB/ESB

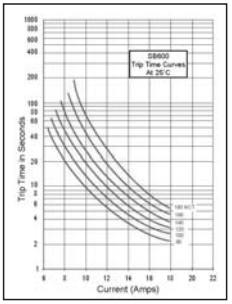
This family of miniature, glass encapsulated thermal protectors provide both thermal and current overload protection. The SB/ESB family of protectors combine bimetal protection technology with a true glass to metal hermetic seal. It is a reliable combination that makes this product leader in the field of automatic reset thermal protectors.
Approvals: UL, VDE, CSA.

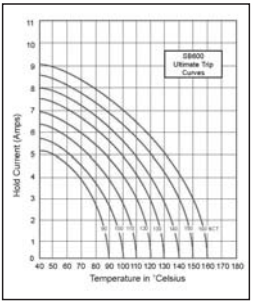
Typical applications
Line break protectors in:
- small AC fractional horsepower motors
- battery chargers
- ballasts
- transformers
- DC motors
- compressors (internal protection)
- toy trains
- Ni-cad battery pack

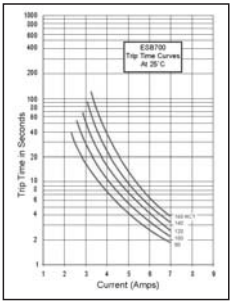
Proven reliability
- extensive accelerated life testing performed to ensure operation under extreme conditions
- meets or exceeds demanding performance requirements for the automotive and residential markets

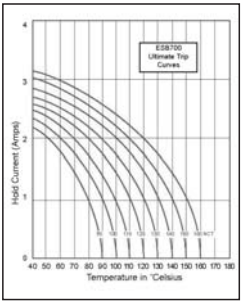
Advanced features
- hermetically sealed
- compact
- opening temperature range of 60°C to 170°C in 5°C increments
- snap action
- copper or tin plated copper leads

Design benefits
- safe from penetration of fluids or gasses
- ultimate corrosion protection
- no secondary insulation needed
- can operate in high pressure environments
- improves safety of end product









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TERMOSTATO DIGITALE

Tipo: K400-3

DESCRIZIONE GENERALE:
- Alimentazione: 200÷240 VAC; 45÷55Hz
- Temperatura di deposito: -20°C÷80°C
- Range della temperatura su display: 0°C a 250°C
- Il Termistore NTC montato in un supporto metallico con 1,5 mt. di cavo
- Temperatura viene misurata e aggiornata una volta ogni 5 secondi
- Temperatura di precisione:
  ± 0,7°C a 100°C
  ± 4% (max) entro 0°C a 250°C
- Dimensioni: 66x55x41,8 mm.
- Dimensioni cava mm. 66x49. Profondità 39 mm.
- **Disponibile anche con sonda resistente a 300°C Mod. k400/300**

ISTRUZIONI:
- Premere "MODE" per selezionare la modalità d'intervento

POSIZIONE OFF:
- La temperatura viene misurata una volta ogni 8 secondi
- La temperatura misurata e la posizione "OFF" vengono visualizzate alternativamente
- Il relé è sempre spento

AUTO-MODE:
- La temperatura viene misurata una volta ogni 8 secondi
- La temperatura misurata e AUT vengono visualizzate alternativamente
- Il relé rimane sempre acceso se la temperatura è di1°C più alta rispetto al valore predisposto
- Il relé rimane sempre spento se la temperatura è di1 °C più bassa rispetto al valore predisposto
- Per rivedere la regolazione
- Premere "SET" una volta. La regolazione s'illumina sul LED
- Premere " UP" o "DOWN" per cambiare la regolazione di 1°C
- Premere e alzare "UP" o "DOWN" per regolare nel modo più veloce
- Quando nessun tasto viene premuto per 5 secondi, ritorna in AUTO

POSIZIONE ON:
- La temperatura viene misurata una volta ogni 8 secondi
- La temperatura misurata e " ON" vengono alternativamente visualizzate
- Il relé rimane sempre acceso

DIGITAL THERMOSTAT

Type: K400-3

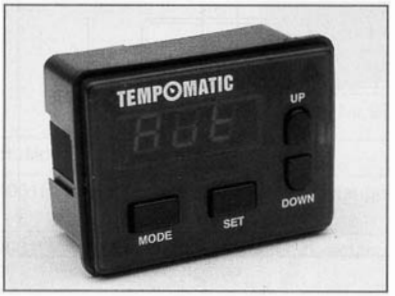
FEATURES:
- Imput voltage: 200÷240 VAC; 45÷55Hz
- Storage temperature: -20°C÷80°C
- Temperature display range: 0°C to 250°C
- NTC Thermistor is mounted in a metallic bracket with 1,5 m cable
- Temperature is measured and updated once every 5 seconds
- Temperature accuracy:
  ± 0,7°C at 100°C
  ± 4% (max) within 0°C to 250°C
- Dimensions: 66x55x41,8 mm.
- Hole in the panel mm. 66x49. Depth 39 mm.
- **Available also with 300°C resistant sensor Mod. k400/300**

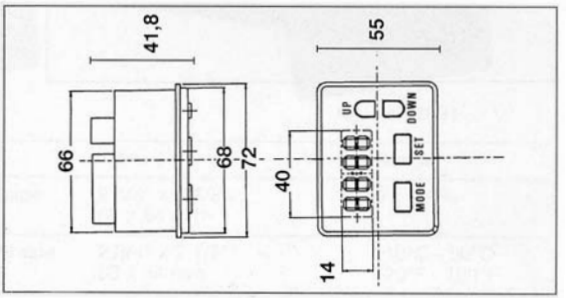
OPERATION:
- When the unit is powered up, OFF mode is initiated
- Press <MODE> to select the desired operating mode

OFF-MODE:
- Temperature is measured once every 8 seconds
- The measured temperature and "OFF" are displayed alternatively
- Relay is always switched OFF

AUTO-MODE:
- Temperature is measured once every 8 seconds
- The measured temperature and "AUT" are displayed alternatively
- Relay is always switched ON if the temperature is 1°C higher than the setting value
- Relay is always switched OFF if the temperture is 1°C lower than the setting value
- To review the setting:
- Press <SET> once. The setting goes flashing in the LED
- Press <UP> or <DOWN> to change the setting by 1°C/step
- Press and hold <UP> or <DOWN> to set in the fast mode
- When no keys has been pressed for 5 seconds, it returns to AUTO

ON-MODE:
- Temperature is measured once every 8 seconds
- The measured temperature and "ON" are displayed alternatively
- Relay is always switched ON





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MICROCOMPUTER PER IL CONTROLLO DELLA TEMPERATURA

Tipo: ETC-100 / ETC-200

SPECIFICHE:

- Di piccole dimensioni e semplice utilizzo dotato di trasformatore interno e sensore di temperatura tipo "usa dallas" adatto per misurazione e controllo temperatura delle apparecchiature di refrigerazione
- Con password di protezione al menù
- Impostazione del ritardo d'avviamento
- Taratura della temperatura
- Possibilità di fissare i limiti max/min di temperatura
- Campo misurazione -50°C~120°C
- Precisione ±0.5°C (-10°C~85°C) oltre: <±2°C
- Risoluzione 0.1°C / >100°C, 1°C
- Voltaggio 110/220VAC ±10%, 50~60HZ
- Capacità relé 10A/240VAC
- Consumo <5V
- Temperatura ambiente 55°C
- Umidità relativa 10%~95% (no condensa)
- Dimensioni prodotto 75x34.5x50 mm
- Foro fissaggio 70.5x28.5 mm
- Lunghezza cavo 2 m
- ETC-100: codice tabella da F01 a F04
- ETC-200: medesime caratteristiche dell'ETC-100, con l'aggiunta di:
  - regolazione dello scongelamento
  - possibilità di scambio tra le modalità di refrigerazione e riscaldamento
  - allarme se si superano i limiti di temperatura

MICROCOMPUTER TEMPERATURE CONTROLLER

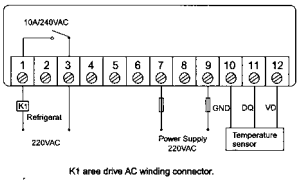
Type: ETC-100 / ETC-200

SPECIFICATIONS:

- Small size and easy to use - with internal transformer and "usa dallas" integrated temperature sensor suitable for temperature measuring and controlling refrigeration equipments
- Password protection
- Delay protection when start-up
- Temperature calibration
- Temperature upper and lower limits setting
- Measuring range -50°C~120°C
- Accuracy ±0.5°C (-10°C~85°C) other range: <±2°C
- Resolution 0.1°C / >100°C, 1°C
- Power supply 110/220VAC ±10%, 50~60HZ
- Relay contact capacity 10A/240VAC
- Power consumption <5V
- Ambient temperature 55°C
- Relative humidity 10%~95% (no condensate)
- Product size 75x34.5x50 mm
- Hole size 70.5x28.5 mm
- Wire length 2 mt
- ETC-100: table codes from F01 to F04
- ETC-200: in addition to the functions of ETC-100, this model presents also:
  - timing defrost
  - switch between modes of refrigerating and heating
  - alarms when beyond temperature limits

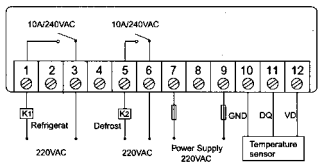
Code	Meaning	Range	Unit	Default
F01	Set temp. upper limit	-49~+120	°C	-15
F02	Set temp. lower limit	-50~+119	°C	-18
F03	Temp. calibration	-5~+5	°C	0
F04	Start-delay time	0~30	minute	3
F05	Defrosting cycle	0~99	hour	6
F06	Defrosting time	0~99	minute	30
F07	Temp. alarming range	0~20	°C	20
F08	Modes	0: refrigeration 1: heating		0

ETC-100



K1 aree drive AC winding connector.

ETC-200



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MICROCOMPUTER PER IL CONTROLLO DELLA TEMPERATURA

Tipo: ETC-300 / ETC-600 / ETC-800

SPECIFICHE

- Di piccole dimensioni, dotato di doppio sensore e caratterizzato da funzioni complete - adatto per tutte le apparecchiature di refrigerazione che necessitano di misurazione e controllo della temperatura ad alto livello
- Doppia possibilità di scongelamento: riscaldamento elettrico o termico
- Possibilità di scambio tra le modalità di refrigerazione e riscaldamento
- Controllo ventola: funzione start/stop insieme al compressore oppure funzionamento continuo
- Funzione di controllo dello scongelamento per mezzo sia del tempo sia della temperatura
- Voltaggio 220VAC ±10%, 50~60HZ
- Risoluzione 0.1°C
- Capacità relé 7A/240VAC
- Temperatura ambiente 60°C
- Umidità relativa 20%~85% (no condensa)
- Foro fissaggio 70.5x28.5 mm

ETC-300

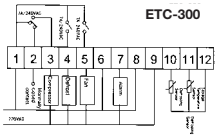
- Campo misurazione -50°C~50°C
- Precisione ±0.5°C (-10°C~10°C)
- Oltre: <±1°C
- Dimensioni prodotto 75x34.5x50 mm
- Sensore NTC

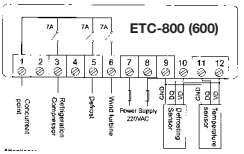
ETC-800

- Campo misurazione -40°C~110°C
- Precisione ±0.5°C (-10°C~85°C)
- Oltre: <±2°C
- Dimensioni prodotto 75x34x85 mm
- Sensore USA DALLAS

ETC-600

- come l'ETC-800 ma con meno funzioni (vedi codici tabella da F01 a F09)





ETC-300

Code	Description	Range	Unit	Default
F01	Temp. upper limit Setting	-49~+50	°C	-15
F02	Temp. lower limit Setting	-50~+49	°C	-20
F03	Exceeding temp. alarm	0~20	°C	10
F04	Compressor delay time	0~9	minute	3
F05	Defrosting cycle	0~99	hour	6
F06	Defrosting time	0~99	minute	30
F07	Defrosting end temp.	-50~+50	°C	10
F08	Storage Temp. calibration	-5~+50	°C	2
F09	Fan ending Temp.			
F10	Defrosting mode	0: Electric Heating		0
		1:Thermal		
F11	Fan mode	0: Start/stop with compressor simultaneously		0
		1: Continuous Run		

MICROCOMPUTER TEMPERATURE CONTROLLER

Type: ETC-300 / ETC-600 / ETC-800

SPECIFICATIONS

- Small size, double sensor, with complete functions - suitable for all kinds of refrigerated storage which needs complex measuring and controlling of temperature
- Defrosting type options: – electric-heat or thermal
- Switch between modes of refrigerating and heating
- Fan control: start/stop simultaneously with the compressor or continuous running
- Defrost controlled by time and temperature
- Resolution 0.1°C
- Power supply 110/220VAC ±10%, 50~60HZ
- Relay contact capacity 7A/240VAC
- Ambient temperature 60°C
- Relative humidity 20%~85% (no condensate)
- Hole size 70.5x28.5 mm

ETC-300

- Measuring range -50°C~50°C
- Accuracy ±0.5°C (-10°C~10°C)
- Other range: <±1°C
- Product size 75x34.5x50 mm
- Sensor NTC

ETC-800

- Measuring range -40°C~110°C
- Accuracy ±0.5°C (-10°C~85°C)
- Other range: <±2°C
- Product size 75x34x85 mm
- Sensor USA DALLAS

ETC-600

- simplifying model of ETC-800 with functions from table code F01 to F09

ETC-800 (600)

Code	Description	Range	Unit	Default
F01	Set temp. upper limit	39~+110	°C	-15
F02	Set temp. lower limit	-40~+109	°C	-20
F03	Set alarming values when temp. exceeding limit	0~20	°C	10
F04	Fast refrigeration time	0~20	hour	4
F05	Compressor start delay	0~20	minute	3
F06	Defrosting interval (cycle)	0~99	hour	6
F07	Defrosting time	0~99	minute	30
F08	Temperature when the defrosting process ends	-40~+50	°C	10
F09	Temperature when the fan stop working	-40~+50	°C	2
F10	Temp. calibration	-5~+5	°C	0
F11	Temp for defrosting and water dropping	0~99	minute	3
F12	Fan's delayed operation after defrosting			
	and being electrified	0~99	minute	10
F13	Alarm delayed when exceeding temp. limit	0~99	minute	15
F14	Delay when sensor error	0~20	minute	1
F15	Compressor start working when sensor error	0~99	minute	15
F16	Compressor stops working when sensor error	0~99	minute	30
F17	Defrosting mode	0: Electric-heat defrost		0
		1:Thermal defrost		
F18	Fan's operation mode	0: Work or stop together with compressor (stops when to defrost)		0
		1: Continuous working (stops when to defrost)		
F19	Refrigeration / Heating mode	0: Refrigeration mode		0
		1: Heating mode		
	Alarm when temperature is higher than upper limit	HHH	°C	≥+110
	Alarm when temperature is lower than bottom limit	LLL	°C	≤-40

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TERMOSTATO AMBIENTE

Tipo: TH2

Questo termostato di facile uso consente una perfetta scelta per il consumatore che cerca qualcosa di semplice.
Infatti l'utente può impostare la temperatura ambiente desiderata solamente regolando la manopola rotativa.
Questo termostato è ideale per il comfort della casa e il risparmio energetico.

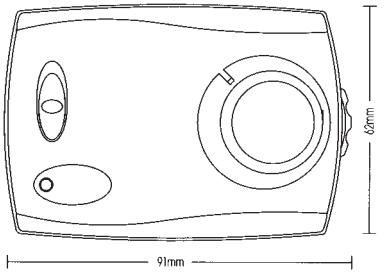
- Lavora con impianti di riscaldamento
- Scala di temperatura 5°C - 30°C
- Led indicatore esterno funzionamento
- Selettore acceso-spento
- Facile installazione e uso
- Potenza max 250 VCA 50 Hz
- Carico Resistivo 7A
- Carico induttivo 3A

LINE VOLTAGE THERMOSTAT

Tipo: TH2

The simple line voltage thermostat provides a perfect choice for consumers who are looking for simple and easy to use thermostat. Users would set the desired temperature by adjusting the rotary knob.
Ideal for home comfort and energy saving.

- Works with heating system
- Temperature control range 5°C - 30°C
- Output indicator
- Heat/Off selection
- Easy operations & installation
- Max rating 250 VCA 50 Hz
- Resistive load 7A
- Inductive load 3A



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MINI TERMOSTATO DIGITALE

Tipo: 098

CARATTERISTICHE GENERALI:

- Adatto a sistemi di riscaldamento e raffreddamento
- Regolazione della temperatura spostando i tasti UP/DOWN
- Mantiene la vostra casa sempre confortevole e alla temperatura desiderata
- Vi fa risparmiare sulla bolletta dell'eletricità regolando la temperatura
- Facile istallazione e programmazione
- Design compatto

SPECIFICHE:

- Alimentazione: Max 250VAC 50Hz
  5 A per carico resistivo
  3 A per carico induttivo
- Range di misurazione della temperatura: 0 °C -40°C
- Range di controllo della temperatura: 0 °C -40°C

- **Modello 098:** per riscaldare o refrigerare con voltaggio 220-250VAC
- **Modello 098A:** per riscaldare o refrigerare con diversi voltaggi (12VAC / 24VAC / 240VAC) (Potenza: 2 batterie AAA, non incluse)

MINI DIGITAL THERMOSTAT

Type: 098

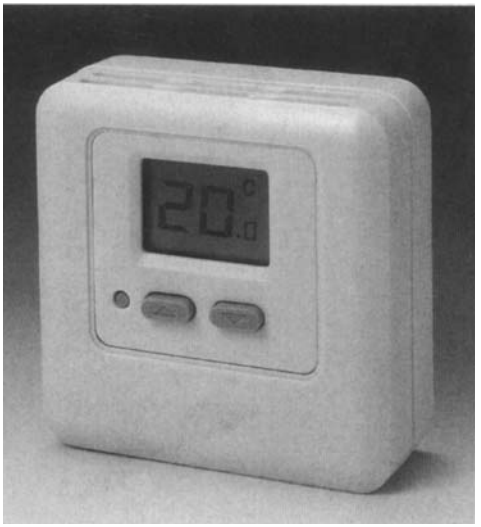
GENERAL FEATURES:

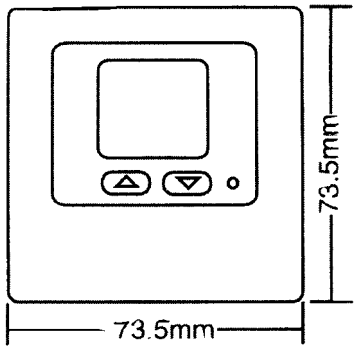
- Operate heating or cooling system (buyer selected)
- Simple temperature setting by pushing UP/DOWN buttons
- Keep your home always at comfort and desired temperature
- Save your electricity bill by setting temperature
- Easy installation & programming
- Compact design

SPECIFICATION:

- Switching cap: 250VAC 50Hz maximum
  5 A for resistive load
  3 A for inductive load
- Temp. measurement range: 0 °C -40°C
- Temp. control range: 0 °C -40°C

- **Modello 098:** for heater or cooler with operating voltage 220-250VAC
- **Modello 098A:** for heater or cooler with varius operating voltage (12VAC / 24VAC / 240VAC) (Power source: Two AAA batteries, not included)





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CRONOTERMOSTATO DIGITALE

Tipo: 101

CARATTERISTICHE:
- Facile programmazione
- Grande display per una facile lettura
- 3 livelli di temperatura programmabili
- 1 livello di temperatura antigelo

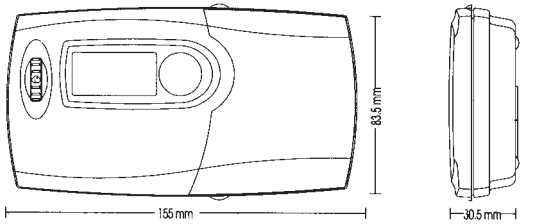
SPECIFICHE:
- Campo di regolazione: 0° a +35 °C (0,5 °C step)
- Precisione della temperatura: ± 1 °C
- Precisione sul tempo: ± 1 minuto mese
- Programmi:
  6 prestabiliti, 3 programmabili dall'utente
- Interruzione: 1C o 2C selezionabili
- Utilizzo: caldo o freddo
- Intervento minimo: 5 minuti
- Portata: massimo AC 350/5A (corrente resistiva)
- Batterie: AA tipo alcalino x 2 da 1,5V
- Dimensioni: mm 156 x 80 x 32 (L x A x P)
- Temperatura di funzionamento: 0° a 50 °C
- Temperatura memorizzabile: -25° a +50 °C
- Umidità ambiente: 5 - 90%

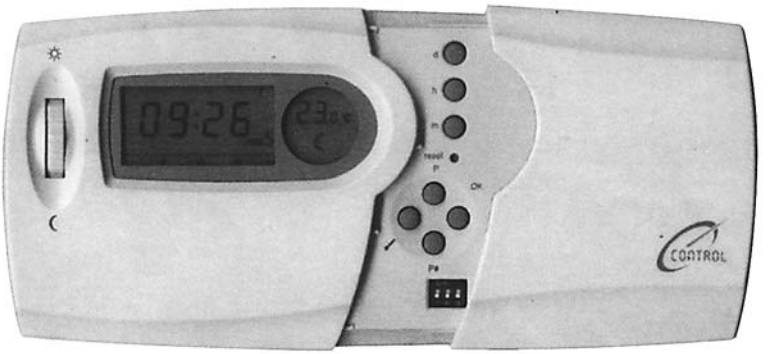
DIGITAL THERMOSTAT

Type: 101

SPECIFICATIONS:
- Easy to program
- Large display easy to read
- 3 temperature setting
- One level defrost temperature

SPECIFICATIONS:
- Temperature measurement range:
  0° a +35 °C (0,5 °C step)
- Temperature accuracy: ± 1 °C
- Clock accuracy: ± 1 minute month
- Program: 6 preset, 3 user programmable
- Switching span: 1C or 2C selectable
- Control mode: heating or cooling system
- Minimum air con.: cycle time: 5 minutes
- Switching: maximum AC 350/5A (resistive load)
- Battery: AA size alcaline battery 1,5V x 2
- Dimensions: mm 156 x 80 x 32 (W x H x D)
- Operating temperature: 0 a 50 °C
- Storage temperature: -25° a +50 °C
- Operating humidity: 5 - 90%





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