SMALL COMPACT THERMOSTAT KTO 011 / KTS 011



> Large setting range

- > Small size
- > Simple to mount

> High switching performance

KTO 011: Thermostat (normally closed); contact breaker for regulating heaters. The contact opens when temperature is rising.

KTS 011: Thermostat (normally open); contact maker for regulating of filter fans and heat exchangers or for switching signal devises when temperature limit has been exceeded. The contact closes when temperature is rising.



Connection diagrams





Thermostat KTO 011 (NC) Examples of connection







<u> Heater</u> Filter fan, Cooling equipment, Signal device

Setting range	Art. No. Contact breaker (NC)	Art. No. Contact maker (NO)		Approvals		
0 to +60°C	01140.0-00	01141.0-00	VDE	-	-	EAC
-10 to +50°C	01142.0-00	01143.0-00	VDE	UL File No. E164102	-	EAC
+20 to +80°C	01159.0-00	01158.0-00	VDE	UL File No. E164102	CSA	EAC
+32 to +140°F	01140.9-00	01141.9-00	VDE	UL File No. E164102	CSA	EAC
+14 to +122°F	01142.9-00	01143.9-00	VDE	UL File No. E164102	CSA	EAC
0 to +60°C	01146.9-00	01147.9-00	VDE	UL File No. E164102	CSA	EAC



TECHNICAL	DATA

.

Switch temperature difference	7K (±4K tolerance)
Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	> 100,000 cycles
Max. switching capacity	250VAC, 10 (2) A / 120VAC, 15 (2) A DC 30W at 24VDC to 72VDC
Max. inrush current	AC 16A for 10 sec.
Connection	2-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm² (AWG 14) stranded wire' 1.5mm² (AWG 16)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	60 x 33 x 43mm
Weight	approx. 40g
Fitting position	variable
Operating/Storage temperature	-45 to +80°C (-49 to +176°F)
Operating/Storage humidity	max. 90% RH (non-condensing)

Protection type

¹ When connecting with wires, wire end ferrules must be used.

Important note: The contact system of the regulator is subjected to environmental influences, thus the contact resistance may change. This can lead to a voltage drop and/or self-heating of the contacts.

IP20

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SMALL COMPACT THERMOSTAT STO 011 / STS 011



> Thumbwheel setting dial

- > Small hysteresis
- > High switching capacity
- > Anti frost assurance <u>> Optimized housing for</u> better air flow

The mechanical thermostat is a two state regulator with small hysteresis. The setting wheel has an anti frost assurance. The housing ensures an optimized air circulation around the bimetal.

STO 011: Thermostat (NC); contact breaker for regulating heaters. The contact opens when temperature is rising.

STS 011: Thermostat (NO); contact maker for regulating of filter fans and heat exchangers or for switching signal devices when temperature limit has been exceeded. The contact closes when temperature is rising.



TECHNICAL DATA

Switch temperature difference	4K (±3K tolerance)
Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	> 100,000 cycles
Max. switching capacity	250VAC, 10 (2) A / 120VAC, 15 (2) A DC 30W at 24VDC to 72VDC
Max. inrush current	AC 16A for 10 sec.
Connection	2-pole terminal, clamping torque 1Nm max.: rigid/stranded ¹ wire 2.5mm ² (AWG 14)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94V-0, light grey
Dimensions	70 x 33 x 42mm
Weight	approx. 50g
Fitting position	variable
Operating/Storage temperature	-45 to +80°C (-49 to +176°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20
Approvals	VDE, UL File No. E164102, EAC

¹ When connecting with stranded wires, wire end ferrules must be used.

Important note: The contact system of the regulator is subjected to environmental influences, thus the contact resistance may change. This can lead to a voltage drop and/or self-heating of the contacts.



Setting range	Art. No. Contact breaker (NC)	Art. No. Contact maker (NO)
0 to +60°C	01115.0-00	01116.0-00
+32 to +140°F	01115.9-00	01116.9-00









 Heater

 Filter fan, Cooling equipment, Signal device

TAMPER-PROOF THERMOSTAT (PRE-SET) FTO 011 / FTS 011



> Small size > Default temperature settings

> Easy to install

TECHNICAL DATA

Max. switching capacity

Max. inrush current

Sensor element

Contact type

Service life

Connection

Mounting

Dimensions

Fitting position

Protection type

Approvals

Operating/Storage temperature

Operating/Storage humidity

Casing

Weight

> High switching accuracy

Tamper-proof (Pre-set) Thermostat FTO 011: Contact breaker/NC (red casing) for regulating heaters or for switching signal devices when temperature has fallen below the minimum value. The contact opens when temperature is rising.

Tamper-proof (Pre-set) Thermostat FTS 011: Contact maker/NO (blue casing) for regulating filter fans, heat exchangers, cooling devices or for switching signal devices when temperature limit has been exceeded. The contact closes when temperaure is rising.

thermostatic bimetal

snap-action contact

> 100,000 cycles

AC 16A for 10 sec.

47 x 33 x 33mm

approx. 30g

variable

IP20

DC 30W

250VAC, 5 (1.6) A / 120VAC, 10 (2) A

2-pole terminal, clamping torque 0.8Nm max.:

-40 to +80°C (-40 to +176°F) / -45 to +80°C (-49 to +176°F)

rigid/stranded¹ wire 2.5mm² (AWG 14)

plastic according to UL94 V-0, light grey

clip for 35mm DIN rail, EN 60715

max. 90% RH (non-condensing)

VDE, UL File No. E164102, EAC



Connection diagrams



Filter fan, Cooling equipment, Signal device

M Heater

Thermostat Heater FTO 011 Examples of 00 connection 0000





Art. No. Contact Switch-on temperature Switch-off temperature 01160.0-00 Contact breaker (NC) +15°C / +59°F (±5K tolerance) +5°C / +41°F (±5K tolerance) Contact breaker (NC) 01160.0-01 +15°C / +59°F (±5K tolerance) +25°C / +77°F (±5K tolerance) 01160.0-05 Contact breaker (NC) +10°C / +50°F (±5K tolerance) 0°C / +32°F (±5K tolerance) Contact Switch-on temperature Switch-off temperature Art. No. 01161.0-00 +50°C / +122°F (±6K tolerance) +40°C / +104°F (±7K tolerance) Contact maker (NO) +50°C / +122°F (±7K tolerance) 01161.0-01 +60°C / +140°F (±6K tolerance) Contact maker (NO) 01161.0-02 Contact maker (NO) +35°C / +95°F (±6K tolerance) +25°C / +77°F (±7K tolerance)

¹ When connecting with stranded wires, wire end ferrules must be used.

Note: Other switch-off and switch-on temperatures on request

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DUAL THERMOSTAT ZR 011



> NO and NC in one casing

> Separate adjustable temperatures

- > High switching capacity
- > Terminals easily accessible> Clip fixing

Two thermostats in one casing:

Thermostat (contact breaker, normally closed) for regulating heaters. The contact opens when temperature is rising. **Thermostat (contact maker, normally open)** for regulating filter fans and heat exchangers or switching signal devices when temperature limit has been exceeded. The contact closes when temperature is rising.

Heaters and cooling equipment can be switched independently from each other with a temperature offset as opposed to the usual change-over contacts.



Connection diagram





01176.0-01²

TECHNICAL DATA

Switch temperature difference	7K (±4K tolerance)
Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	> 100,000 cycles
Max. switching capacity	250VAC, 10 (2) A 120VAC, 15 (2) A DC 30W at 24VDC to 72VDC
Max. inrush current	AC 16A for 10 sec.
Connection	4-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm² (AWG 14) stranded wire¹ 1.5mm² (AWG 16)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0. light grey
Dimensions	67 x 50 x 46mm
Weight	approx. 90g
Fitting position	variable
Operating/Storage temperature	-45 to +80°C (-49 to +176°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20
Approvals	VDE, UL File No. E164102, CSA, EAC

¹ When connecting with wires, wire end ferrules must be used.

Example of connection

Important note: The contact system of the regulator is subjected to environmental influences, thus the contact resistance may change. This can lead to a voltage drop and/or self-heating of the contacts.

Heater

Contact maker (NO)

Thermostat ZR 011

Filter fan

+32 to +140°F

∭ Heater Filter fan, Cooling equipment, Signal device 0000 Setting range Setting range Contact maker (NO) 01172.0-00 Contact breaker (NC) 0 to +60°C 0 to +60°C 01172.0-01 +32 to +140°F +32 to +140°F Contact breaker (NC) Contact maker (NO) 01175.0-00 Contact breaker (NC) -10 to +50°C Contact maker (NO) +20 to +80°C 01175.0-01 Contact breaker (NC) +14 to +122°F +68 to +176°F Contact maker (NO) 01176.0-00² Contact maker (NO) Contact maker (NO) 0 to +60°C 0 to +60°C

+32 to +140°F

² For regulating heat exchangers and fans (e. g. LE 019) and as an alarm contact for monitoring the interior temperature of electronic enclosures.

Contact maker (NO)



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Thermostat FTD 011 (NC/NO)

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Connection diagram

Filter fan, Cooling equipment, Signal device

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<u> </u>Heater

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NO and NC in one casingDefault temperature settings

> High switching accuracy > Clip fixing

Two thermostats in one casing:

Tamper-proof (Pre-set) Thermostat/Contact breaker (NC) for regulating heaters or for switching signal devices when temperature has fallen below the minimum value. The contact opens when temperature is rising. Tamper-proof (Pre-set) Thermostat/Contact maker (NO) for regulating filter fans, heat exchangers or for switching signal devices when temperature limit has been exceeded. The contact closes when temperature is rising.

Heaters and cooling equipment can be switched independently from each other with a temperature offset as opposed to the usual change-over contacts.



TECHNICAL DATA

Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	> 100,000 cycles
Max. switching capacity	250VAC, 5 (1.6) A / 120VAC, 10 (2) A DC 30W
Max. inrush current	AC 16A for 10 sec.
Connection	4-pole terminal, clamping torque 0.8Nm max.: rigid wire 2.5mm² (AWG 14) stranded wire' 1.5mm² (AWG 16)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	47 x 63 x 33mm
Weight	approx. 40g
Fitting position	variable
Operating/Storage temperaure	-40 to + 80°C (-40 to +176°F) / -45 to + 80°C (-49 to +176°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20
Approvals	VDE, UL File No. E164102, EAC

¹ When connecting with stranded wires, wire end ferrules must be used.



	Contact breaker (NC)		Contact maker (NO)	
Art. No.	Switch-off temperature	Switch-on temperature	Switch-on temperature	Switch-off temperature
01163.0-00	+15°C / +59°F (±5K tolerance)	+5°C / +41°F (±5K tolerance)	+50°C / +122°F (±6K tolerance)	+40°C / +104°F (±7K tolerance)
01163.0-01	+25°C / +77°F (±5K tolerance)	+15°C / +59°F (±5K tolerance)	+60°C / +140°F (±6K tolerance)	+50°C / +122°F (±7K tolerance)
01163.0-02	+15°C / +59°F (±5K tolerance)	+5°C / +41°F (±5K tolerance)	+35°C / +95°F (±6K tolerance)	+25°C / +77°F (±7K tolerance)
01163.0-03	+25°C / +77°F (±5K tolerance)	+15°C / +59°F (±5K tolerance)	+50°C / +122°F (±6K tolerance)	+40°C / +104°F (±7K tolerance)
	Contact n	Contact maker (NO)		aker (NO)
Art. No.	Switch-on temperature	Switch-off temperature	Switch-on temperature	Switch-off temperature
01164.0-00	+50°C / +122°F (±6K tolerance)	+40°C / +104°F (±7K tolerance)	+60°C / +140°F (±6K tolerance)	+50°C / +122°F (±7K tolerance)

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Note: Other switch-off and switch-on temperatures on request.

FZK 011

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MECHANICAL THERMOSTAT

> Adjustable temperature

> High switching capacity

> Small hysteresis

> Change-over contact
> Clip fixing

The mechanical thermostat is used for controlling heating and cooling equipment, filter fans or signal devices. The thermostat registers the surrounding air and can switch both inductive and resistive loads via snap-action contact. Functionality: The temperature setting on the scale equals to the upper switch point, which means that the NC contact opens. The temperature setting minus switch temperature difference (and tolerances) equals to the lower switch point, which means that the NC contact closes.





HeaterFilter fan,

Cooling equipment, Signal device



TECHNICAL DATA

Switch temperature difference	5K (-3/+2K tolerance) ¹
Sensor element	thermostatic bimetal
Contact type	change-over snap-action contact
Service life	> 100,000 cycles
Min. switching capacity	10mA
Max. switching capacity, NC	250VAC / 120VAC, 10 (4) A DC 30W
Max. switching capacity, NO	250VAC / 120VAC, 5 (2) A DC 30W
Max. inrush current	AC 16A for 10 sec.
Connection	4-pole terminal, clamping torque 0.5Nm max.: rigid/stranded ² wire 2.5mm ² (AWG 14)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	67 x 50 x 38mm
Weight	approx. 0.1kg
Fitting position	variable
Operating/Storage temperature	-45 to +65°C (-49 to +149°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20
Approvals	UL File No. E164104, EAC

¹ If the Normally Closed contact is used, the switch temperature difference could be reduced by connecting terminal "N" (RF heating resistor). It causes the thermal feedback which is subject to surrounding conditions and thus has to be determined for each individual application.

² When connecting with wires, wire end ferrules must be used.

Important note: The contact system of the regulator is subjected to environmental influences, thus the contact resistance may change. This can lead to a voltage drop and/or self-heating of the contacts.

Art. No.	Operating voltage	Setting range
01170.0-00	230VAC	+5 to +60°C
01170.0-01	230VAC	+40 to +140°F
01170.0-02	230VAC	-20 to +35°C
01170.9-00	120VAC	+40 to +140°F
01170.9-01	120VAC	+5 to +60°C



Heater





Examples of connection

e.g. Signal device Thermostat FZK 011



ELECTRONIC THERMOSTAT ETR 011



> Large setting range

> Small hysteresis

> Status indicator (LED)

TECHNICAL DATA

Sensor element

Switch temperature difference

Operating/Storage temperature

Operating/Storage humidity

Protection type

Operating voltage

230VAC, 50/60Hz

120VAC, 50/60Hz

> Change-over contact > Clip fixing

The electronic thermostat is used for controlling heating and cooling equipment, filter fans or signal devices. The thermostat registers the surrounding air and can switch both and inductive and resistive loads via relay with change-over contact. The LED integrated in the adjustment knob is lit when the NC is closed. (e.g. when a connected heater is operating).





Reaction time	approx. 5 sec.
Contact type	change-over contact (relay)
Service life	> 50,000 cycles
Max. switching capacity (relay output)	240VAC / 120VAC, 8 (1.6) A DC 100W at 24VDC
Max. inrush current	AC 16A for 10 sec.
Optical indicator	LED
Connection	5-pole terminal, clamping torque 0.5Nm max.: rigid/stranded ¹ wire 2.5mm ² (AWG 14)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL 94V-0, light grey
Dimensions	64.5 x 42 x 38mm
Weight	approx. 70g
Fitting position	vertical



Connection diagram

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M Heater Filter fan, Cooling equipment, Signal device

Art. No.

01131.0-00

01131.9-00

¹ When connecting with stranded wires, wire end ferrules must be used.



Setting range

-20 to +60°C

-4 to +140°F

-40 to +85°C (-40 to +185°F)

IP20

max. 90% RH (non-condensing)

e.g. Signal device



EAC

EAC

Examples of connection

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Approvals

UL File No. E164102

UL File No. E164102



VDE

4K (± 1K tolerance) at +20°C (+68°F)
NTC
approx. 5 sec.
change-over contact (relay)
> 50,000 cycles
240VAC / 120VAC, 8 (1.6) A

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ELECTRONIC THERMOSTAT

ET 011 24VDC



> High DC breaking capacity

> Low hysteresis

TECHNICAL DATA

- > Adjustable temperature
- > Change-over contact > Clip fixing

Electronic thermostat for regulating high performance 24VDC equipment. Heating or cooling appliances as well as signal devices can be switched via the potential free change-over contact. In comparison to mechanical thermostats, the ET 011 has a low hysteresis making the switching point and setting accuracy more precise.





Switch temperature difference	арргох. ЗК
Sensor element	PTC
Contact type	change-over
Service life	> 100,000 cycles
Max. switching capacity	28VDC, 16A
Max. inrush current	DC 16A
Connection	5-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm ² (AWG 14) stranded wire ¹ 1.5mm ² (AWG 16)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	67 x 50 x 46mm
Weight	approx. 80g
Fitting position	vertical
Operating/Storage temperature	-10 to +60°C (+14 to +140°F) / -45 to +80°C (-49 to +176°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20
Approvals	EAC

¹ When connecting with stranded wires, wire end ferrules must be used.



Connection diagram

Art. No.

01190.0-00





Operating voltage

24VDC (20-28VDC)





Examples of connection



Setting range

0 to +60°C

ELECTRONIC THERMOSTAT

ETL 011 | 12 to 48VDC



> Large setting range

> Small hysteresis

> Optical operating display (LED)

> Change-over contact > Signal application

The electronic thermostat registers the surrounding air temperature and can switch a signal current via its internal relay with a potential-free change-over contact. Signal-processing devices can be controlled directly with the ETL 011. In order to control heating and cooling equipment, filter fans and signal devices the switch module SM 010 or a similar device is needed. The LED integrated in the adjustment knob shows the closed status of the contact 1-2. When temperature is rising contact 1-2 opens and the LED turns off. In currentless state (no supply voltage) contact 1-2 opens.





Connection diagram

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Switch temperature difference	4K (± 1K tolerance) at +20°C (+68°F)
Sensor element	NTC
Reaction time	approx. 5 sec.
Contact type	change-over contact (relay)
Service life	>100.000 cycles (at 10mW)
Max. switching current (relay output)	DC 0.5A at 48VDC
Min. switching capacity	DC 10mW (at 0.1V, 100mA or 1mA, 10V)
Optical indicator	LED
Connection	5-pole terminal, clamping torque 0.5Nm max.: rigid wire/stranded wire ¹ 2.5mm ² (AWG 14)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	64.5 x 42 x 38mm
Weight	approx. 70g
Fitting position	vertical
Operating/Storage temperature	-40 to +85°C (-40 to +185°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20

¹ When connecting with wires, wire end ferrules must be used.



Art. No.	Operating voltage	Setting range		Approvals	
01131.2-00	12-48VDC (min. 10VDC, max. 60VDC)	-20 to +60°C	UL File No. E164102	EAC	VDE submitted
01131.2-01	12-48VDC (min. 10VDC, max. 60VDC)	-4 to +140°F	UL File No. E164102	EAC	VDE submitted

e.g. Filter fan

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> Adjustable relative humidity

- > Change-over contact
- > High switching capacity
- > Easily accessible terminals > Clip fixing

The electromechanical hygrostat is designed to control enclosure heaters so that the dew point is raised when a critical relative humidity of 65% is exceeded. In this way condensation and corrosion in enclosures with electric/ electronic components is effectively prevented.



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Switch difference ¹	4% RH (±3% tolerance)
Permissible air velocity	15m/sec.
Contact type	change-over contact
Service life	> 50,000 cycles
Min. switching capacity	20VAC/DC 100mA
Max. switching capacity	250VAC, 5A DC 20W
Connection	3-pole terminal for 2.5mm ² , clamping torque 0.5Nm max.: rigid wire 2.5mm ² (AWG 14) stranded wire ² 1.5mm ² (AWG 16)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	67 x 50 x 38mm
Weight	approx. 60g
Fitting position	variable
Operating/Storage temperature	0 to +60°C (+32 to +140°F) / -40 to +60°C (-40 to +140°F)
Operating/Storage humidity	max. 95% RH (non-condensing)
Protection type	IP20
Approvals	UL File No. E164102, EAC

¹ at 50% RH

² When connecting with stranded wires, wire end ferrules must be used.



<u> Heater</u> Filter fan, Cooling equipment, Signal device



Examples of connection

Hygrostat

MFR 012

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Art. No.	Setting range
01220.0-00	35 to 95% RH

ELECTRONIC HYGROSTAT EFR 012



> Adjustable and pre-set relative humidity

> Status indicator (LED)

> High switching capacity

- > Clip fixing > Temperature-compensated

The electronic hygrostat senses the relative humidity in an enclosure with electric/electronic components and turns on a heater at the set point, helping prevent the formation of condensation in the enclosure. The LED integrated in the adjustment knob is lit when the connected heater is in operation.





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Switch difference	5% RH (±3% RH tolerance) at +25°C (+77°F), 50% RH
Reaction time	5 sec.
Contact type	change-over contact (relay)
Service life	> 50,000 cycles
Max. switching capacity (relay output)	240VAC / 120VAC 8 (1.6) A DC 100W at 24VDC
Max. inrush current	AC 16A for 10 sec.
Optical indicator	LED
Connection	5-pole terminal, clamping torque 0.5Nm max.: rigid/stranded ¹ wire 2.5mm ² (AWG 14)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	64.5 x 42 x 38mm
Weight	approx. 70g
Fitting position	vertical
Operating/Storage temperature	0 to +60°C (+32 to +140°F) / -20 to +70°C (-4 to +158°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20

¹ When connecting with stranded wires, wire end ferrules must be used.



Connection diagram



Example of connection

Art. No.	Operating voltage	Setting range		Approvals	
01245.0-00	230VAC, 50/60Hz	40 to 90% RH	VDE	UL File No. E164102	EAC
01246.0-00	230VAC, 50/60Hz	65% RH pre-set	VDE	UL File No. E164102	EAC
01246.0-01	230VAC, 50/60Hz	50% RH pre-set	VDE	UL File No. E164102	EAC
01245.9-00	120VAC, 50/60Hz	40 to 90% RH	-	UL File No. E164102	EAC
01246.9-00	120VAC, 50/60Hz	65% RH pre-set	-	UL File No. E164102	EAC

ELECTRONIC HYGROSTAT EFL 012 | 12 to 48VDC



> Large setting range

- > Small hysteresis
- > Optical operating display (LED)
- > Change-over contact> Signal application

The electronic hygrostat registers the surrounding relative humidity and can switch a signal current via its internal relay with a potential-free change-over contact. Signal-processing devices can be controlled directly with the EFL 012. In order to control heating and cooling equipment, filter fans and signal devices the switch module SM 010 or a similar device is needed. The LED integrated in the adjustment knob shows the closed status of the contact 1-2. When relative humidity drops contact 1-2 opens and the LED turns off. In currentless state (no supply voltage) contact 1-2 opens.





ΤE	CHN	IICAL	DATA

Switch difference	5% RH (±3% RH tolerance) at +25°C (+77°F), 50% RH
Reaction time	approx. 5 sec.
Contact type	change-over contact (relay)
Service life	>100.000 cycles (at 10mW)
Max. switching current (relay output)	DC 0.5A at 48VDC
Min. switching capacity	DC 10mW (at 0.1V, 100mA or 1mA, 10V)
Optical indicator	LED
Connection	5-pole terminal, clamping torque 0.5Nm max.: rigid wire/stranded wire ¹ 2.5mm ² (AWG 14)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	64.5 x 42 x 38mm
Weight	approx. 70g
Fitting position	vertical
Operating/Storage temperature	0 to +60°C (+32 to +140°F) / -20 to +70°C (-4 to +158°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20

¹ When connecting with wires, wire end ferrules must be used.

Heater HG 140

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Example of connection



Hygrostat



Art. No.	Operating voltage	Setting range		Approvals	
01245.2-00	12-48VDC (min. 10VDC, max. 60VDC)	40 to 90% RH	UL File No. E164102	EAC	VDE submitted

ELECTRONIC HYGROTHERM ETF 012



- > Temperature and humidity adjustable
- > Wide voltage range
 > Operating temperature down to -40°C
- > High switching capacity > Status indicator (LED)

The electronic hygrotherm senses the ambient temperature and relative humidity in an enclosure with electric/ electronic components and turns on a heater (or alternatively a fan) at either set point, helping prevent the formation of condensation in the enclosure. Due to its wide voltage range the hygrotherm can be utilised anywhere in the world. Gnbsp; The LED integrated in the adjustment knob on the active controller is lit when the connected device is in operation.







TECHNICAL DATA

Switch difference (temperature)	2K (±1K tolerance) at +25°C (+77°F), 50% RH
Switch difference (humidity)	4% RH (±1% tolerance) at +25°C (+77°F), 50% RH
Reaction time (humidity)	approx. 5 sec.
Contact type	change-over contact (relay)
Service life	VDE: NO/NC > 15,000 cycles UL: NO/NC > 30,000 cycles
Max. switching capacity (relay output)	240VAC, 10 (1.6) A 60VDC, 0.6A ¹
Max. inrush current	AC 30A for 10 sec.
Optical indicator	LED
Connection	5-pole terminal, clamping torque 0.5Nm max.: rigid/stranded ² wire 2.5mm ² (AWG 14)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-O, light grey
Dimensions	77 x 60 x 43mm
Weight	approx. 0.2kg
Fitting position	vertical
Operating/Storage temperature	-40 to +60°C (-40 to +140°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20
Approvals	VDE, UL File No. E164102, EAC

¹ not UL confirmed

² When connecting with stranded wires, wire end ferrules must be used.



Art. No.	Operating voltage	Setting range temperature	Setting range humidity
01230.0-00	100-240VAC, 50/60Hz (min. 90VAC, max. 265VAC)	0 to +60°C	50 to 90% RH
01230.9-00	100-240VAC, 50/60Hz (min. 90VAC, max. 265VAC)	+32 to +140°F	50 to 90% RH
01230.1-00	24-48VDC (min. 20VDC, max. 60VDC)	0 to +60°C	50 to 90% RH

ELECTRONIC HYGROTHERM WITH EXTERNAL SENSOR **ETF 012**



- > Temperature and humidity adjustable
- > Wide voltage range
- > Operating temperature down to -40°C
- > High switching capacity > With external sensor

The electronic hygrotherm senses the ambient temperature and relative humidity in an enclosure with electric/electronic components and turns on a heater (or alternatively a fan) at either set point, helping prevent the formation of condensation in the enclosure. Due to its wide voltage range the hygrotherm can be utilised anywhere in the world. The external sensor can be positioned freely anywhere in the enclosure for precise measurements.













Switch difference (temperature)	2K (±1K tolerance) at +25°C (+77°F), 50% RH
Switch difference (humidity)	4% RH (±1% tolerance) at +25°C (+77°F), 50% RH
Reaction time (humidity)	approx. 5 sec.
Contact type	change-over contact (relay)
Service life	VDE: NO/NC > 15,000 cycles UL: NO/NC > 30,000 cycles
Max. switching capacity (relay output)	240VAC, 10 (1.6) A 60VDC, 0.6A ¹
Max. inrush current	AC 30A for 10 sec.
Optical indicator	LED
Connection	5-pole terminal, clamping torque 0.5Nm max.: rigid/stranded ² wire 2.5mm ² (AWG 14)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	77 x 60 x 43mm
Weight	approx. 0.2kg
Fitting position	vertical
Operating/Storage temperature	-40 to +60°C (-40 to +140°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20
Approvals	VDE, UL File No. E164102, EAC

¹ not UL confirmed

² When connecting with stranded wires, wire end ferrules must be used.





Art. No. Cable 1m	Art. no. Cable 2m	Operating voltage	Setting range temperature	Setting range humidity
01231.0-00	01231.0-01	100-240VAC, 50/60Hz (min. 90VAC, max. 265VAC)	0 to +60°C	50 to 90% RH
01231.9-00	01231.9-01	100-240VAC, 50/60Hz (min. 90VAC, max. 265VAC)	+32 to +140°F	50 to 90% RH
01231.1-00	01231.1-01	24-48VDC (min. 20VDC, max. 60VDC)	0 to +60°C	50 to 90% RH

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SWITCH MODULE

SM 010 24VDC and 48VDC



> High DC switching capacity

- > Variety of applications
- > Compact design

> Simple connection> Clip fixing

The Switch Module is designed for switching DC equipment with high currents. It is controlled via an external, potential-free contact (thermostat or hygrostat) connected between terminals 1 and 2. For switching the Module, the internally generated signal current has to be used. It must ne ensured that the external contact can safely switch this signal current. The SM 010 is available in 24VDC and 48VDC versions.





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TECHNICAL DATA

Contact type	contact maker normally open (Relay/MOSFET)
Service life	> 100,000 cycles
Max. inrush current	DC 16A
Connection	6-pole terminal, clamping torque 0.5Nm max.: rigid wire 2.5mm² (AWG 14) stranded wire ¹ 1.5mm² (AWG 16)
Mounting	clip for 35mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	67 x 50 x 46mm
Weight	approx. 90g
Fitting position	variable
Operating/Storage temperature	-45 to +70°C (-49 to +158°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type	IP20
Approvals	VDE, EAC



Connection diagram



Load, e.g. heater,

cooling device

Switch module SM 010 Control contact, e.g. thermostat



Example of connection

www.stego.de | www.stego.co.uk | www.stegonorden.se

Art. No.	Operating voltage	Max. switching capacity	Signal current
01001.0-00	24VDC (20-28VDC)	28VDC, 16A	13mA at 20VDC / 22mA at 28VDC
01000.0-00	48VDC (38-56VDC)	56VDC, 16A	10mA at 38VDC / 18mA at 56VDC

HAZARDOUS AREA THERMOSTAT REx 011 | 15°C, 25°C

(Ex)



> Compact design
 > Set temperature
 > High switching capacity

Compact small mechanical thermostat for temperature regulation and monitoring of heaters, for example in transmitter cabinets, control panels and measuring equipment which are deployed in areas with explosion hazard. The special switch construction enables high response accuracy, small switch temperature difference and a very long service life. High switching performance allows direct control of the heaters.



TECHNICAL DATA

Sensor element	thermostatic bimetal
Contact type (1-pole)	opens with rising temperature
Service life	> 100 000 cycles
Max. switching capacity	250VAC, 1.3 (0.65) A
Max. inrush current	AC 4A for 12 sec.
Connection	Si HF - JZ 3 x 0.75mm ² , length 1m
Mounting	mounting bracket with nut M8 (see illustration)
Casing	aluminium, black anodised
Dimensions	length 110mm
Weight	approx. 0.2kg
Fitting position	variable
Storage temperature	-45 to +70°C (-49 to +158°F)
Operating/Storage humidity	max. 90% RH (non-condensing)
Protection type/Protection class	IP6X / I (earthed)
Approvals	LCIE 01 ATEX 6074 IECEx LCI 07.0021 INMETRO DNV 14.0139X EAC





Art. No.	Ambient temperature ¹	Ex protection type 🐼 II 2 GD		Switch-off temperature	Switch temperature difference
		Gases	Dusts		
01180.0-00	-40 to +60°C (-40 to +140°F)	Ex d IIC T6 Gb	Ex tb IIIC T85°C Db IP6X	+15°C (±4K tolerance)	4K (±1K tolerance)
01181.0-00	-40 to +60°C (-40 to +140°F)	Ex d IIC T6 Gb	Ex tb IIIC T85°C Db IP6X	+25°C (±4K tolerance)	4K (±1K tolerance)

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