

ENCLOSURE ACCESSORIES

Explosion Proof Regulators Heaters Lighting









REX 011 EXPLOSION PROOF | 15°C, 25°C (T6) HAZARDOUS AREA THERMOSTAT

Compact, small mechanical thermostat offering a high response accuracy, small switching difference, and a very long service life (switching cycles). This thermostat of temperature class T6 (140 °F / 60 °C max.) is utilized for the regulation of heaters deployed in hazardous areas. The high switching performance allows direct control of a heater.

Temperature Class	Т6
Ex Protection type Ex II 2 GD Gases Dusts	Ex db IIC T6 Gb Ex tb IIIC T85 °C Db IP66
Ambient Temperature	-76 to +140 °F (-60 to +60 °C)
Sensor Element	thermostatic bimetal
Service Life	> 100,000 cycles
Max. Switching Capacity	10 A* resistive @ AC 250 V, 1 A resistive @ DC 24 V
Min. Switching Capacity	DC 1.5 V 5 mA
Max. Inrush Current	AC 16 A for 12 sec.
Connection	halogen-free silicone cable 3 x AWG 18 (1.0 mm²)
Connection Pe	AWG 18 to 14 (1.0 to 2.5 mm ²)
Mounting	clip for 35mm DIN rail, EN 60715 screw mounting M5, optional sideways mounting
Housing	aluminum, silver anodized
Dimensions	3.7 x 1.8 x 1.9" (95 x 45 x 30 mm)
Weight	approx. 0.66 lbs (0.3 kg)
Mounting Position	variable
Storage Temperature	-76 to +185 °F (-60 to +85 °C)
Operating / Storage Humidity	max. 90 % RH (non-condensing)
Protection Class / Type	l (grounded) / IP66
Approvals	EPS 16 ATEX 1 118 X IECEx EPS 16.0054X FAC

*currents above 4A affect the switching difference





Dimentioned Drawing.

- For use in hazardous areas
- High switching capacity
- Compact Design
- "Pre-set" temperature
- Ready-to-use with strain relief
- Temperature class T6



Part No.	Contact Type (1-Pole)	Switch Temperature	Switching Difference (Hysteresis)
01185.0-00	Normally Closed (NC)	59 °F / 15 °C (± 5 °F /3 K tolerance)	9 °F ± 5 °F tolerance (5 K ± 3 K)
01185.1-00	Normally Closed (NC)	77 °F / 25 °C (± 5 °F /3 K tolerance)	9 °F ± 5 °F tolerance (5 K ± 3 K)



CREX 020 EXPLOSION PROOF | 50 W, 100 W (T5) HAZARDOUS AREA HEATER

Compact convection heater of temperature class T5 (212 °F / 100 °C max.) for use in hazardous areas for prevention of formation of condensation, temperature fluctuations, and for protection against frost in control and switch cabinets, as well as in measuring equipment.

Temperature Class	Т5
Ex Protection Type Ex II 2 GD Gases Dusts	Ex db IIC T5 Gb Ex tb IIIC T100 °C Db IP66
Ambient Temperature	-76 to +122 °F (-60 to +50 °C)
Surface Temperature	max. +212 °F (+100 °C)
Heating Element	high performance cartridge
Heater Body	aluminum profile, silver anodized
Connection	halogen-free silicone cable 3 x AWG 18 (0.75 mm²), length 3 ft (1 m)
Connection PE	AWG 18 to 14 (0.75 to 2.5 mm ²)
Mounting	clip for 35 mm DIN rail, EN 60715 for heating body size 4.7 x 2.4", screw mounting with 2 mounting brackets for all heating body sizes, optional sideways mounting
Mounting Position	vertical airflow (connection at bottom)
Storage Temperature	-76 to +185 °F (-60 to +85 °C)
Operating / Storage Humidity	max. 90 % RH (non-condensing)
Protection Class / Type	I (grounded) / IP66
Approvals	EPS 16 ATEX 1 109 X IECEx EPS 16.0048X EAC



Dimentioned Drawing. A) with DIN clip. B) with screw mounting bracket.

- For use in hazardous areas
- Large convection surface
- DIN rail and screw mounting
- Ready-to-use with strain relief
- Maintenance free
- Temperature class T5



Part No. Din Clip	Part No. Screw Mounting	Hole Spacing X	Operating Voltage	Heating Capacity	Rec. Pre-Fuse T (Time-Delay)	Dimensions (D X W X H)	Weight (Approx.)
02051.0-00	02051.0-10	8.9″ (225 mm)	AC 230 V	50 W	0.5 A	4.7 x 2.4 x 7.1″ (120 x 60 x 180 mm)	3.1 lbs (1.4 kg)
02051.9-00	02051.9-10	8.9″ (225 mm)	AC 120 V	50 W	0.5 A	4.7 x 2.4 x 7.1″ (120 x 60 x 180 mm)	3.1 lbs (1.4 kg)
N/A	02052.0-10	13.8″ (350 mm)	AC 230 V	100 W	1.0 A	6.3 x 3.2 x 11.8" (160 x 80 x 300 mm)	6.2 lb (2.8 kg)
N/A	02052.9-10	13.8″ (350 mm)	AC 120 V	100 W	1.0 A	6.3 x 3.2 x 11.8″ (160 x 80 x 300 mm)	6.2 lbs (2.8 kg)



CREX 020 EXPLOSION PROOF | 50 W TO 200 W (T4) HAZARDOUS AREA HEATER

Compact convection heater of temperature class T4 (275 °F / 135 °C max.) for use in hazardous areas for prevention of formation of condensation, temperature fluctuations, and for protection against frost in control and switch cabinets, as well as in measuring equipment.

Temperature Class	T4
Ex Protection Type Ex II 2 GD Gases Dusts	Ex db IIC T4 Gb Ex tb IIIC T135 °C Db IP66
Ambient Temperature	-76 to +122 °F (-60 to +50 °C)
Surface Temperature	max. +275 °F (+135 °C)
Heating Element	high performance cartridge
Heater Body	aluminum profile, silver anodized
Connection	halogen-free silicone cable 3 x AWG 18 (0.75 mm²), length 3 ft (1 m)
Connection PE	AWG 18 to 14 (0.75 to 2.5 mm ²)
Mounting	clip for 35 mm DIN rail, EN 60715 for heating body sizes 3.2 x 1.9" and 4.7 x 2.4"; screw mounting with 2 mounting brackets for all heating body sizes, optional sideways mounting
Mounting Position	vertical airflow (connection at bottom)
Storage Temperature	-76 to +185 °F (-60 to +85 °C)
Operating / Storage Humidity	max. 90 % RH (non-condensing)
Protection Class / Type	l (grounded) / IP66
Approvals	EPS 16 ATEX 1 109 X IECEx EPS 16.0048X EAC



Dimentioned Drawing. A) with DIN clip. B) with screw mounting bracket.

- For use in hazardous areas
- Large convection surface
- DIN rail and screw mounting
- Ready-to-use with strain relief
- Maintenance free
- Temperature class T4



Part No. Din Clip	Part No. Screw Mounting	Hole Spacing X	Operating Voltage	Heating Capacity	Rec. Pre-Fuse T (Time-Delay)	Dimensions (D X W X H)	Weight (Approx.)
02041.0-00	02041.0-10	5.9″	AC 230 V	50 W	0.5 A	3.2 x 1.9 x 4.3"	1.5 lbs
02041.9-00	02041.9-10	5.9″	AC 120 V	50 W	1.0 A	3.2 x 1.9 x 4.3"	1.5 lbs
02042.0-00	02042.0-10	8.9″	AC 230 V	100 W	1.0 A	4.7 x 2.4 x 7.1"	3.1 lbs
02042.9-00	02042.9-10	8.9″	AC 120 V	100 W	2.0 A	4.7 x 2.4 x 7.1"	3.1 lbs
-	02043.0-10	10.8″	AC 230 V	150 W	1.5 A	6.3 x 3.2 x 8.6"	5.1 lbs
-	02043.9-10	10.8″	AC 120 V	150 W	3.0 A	6.3 x 3.2 x 8.6"	5.1 lbs
-	02044.0-10	13.8″	AC 230 V	200 W	2.0 A	6.3 x 3.2 x 11.8"	6.2 lbs
-	02044.9-10	13.8″	AC 120 V	200 W	4.0 A	6.3 x 3.2 x 11.8"	6.2 lbs



CREX 020 EXPLOSION PROOF | 50 W TO 200 W (T3) HAZARDOUS AREA HEATER

Compact convection heater of temperature class T3 (392 °F / 200 °C max.) for use in hazardous areas for prevention of formation of condensation, temperature fluctuations, and for protection against frost in control and switch cabinets, as well as in measuring equipment.

Temperature Class	T3
Ex Protection Type Ex II 2 GD Gases Dusts	Ex db IIC T4 Gb Ex tb IIIC T135 °C Db IP66
Ambient Temperature	-76 to +185 °F (-60 to +85 °C)
Surface Temperature	max. +392 °F (+200 °C)
Heating Element	high performance cartridge
Heater Body	aluminum profile, silver anodized
Connection	halogen-free silicone cable 3 x AWG 18 (0.75 mm²), length 3 ft (1 m)
Connection PE	AWG 18 to 14 (0.75 to 2.5 mm ²)
Mounting	clip for 35 mm DIN rail, EN 60715 for heating body sizes 3.2 x 1.9" and 4.7 x 2.4"; screw mounting with 2 mounting brackets for all heating body sizes, optional sideways mounting
Mounting Position	vertical airflow (connection at bottom)
Storage Temperature	-76 to +185 °F (-60 to +85 °C)
Operating / Storage Humidity	max. 90 % RH (non-condensing)
Protection Type / Protection Class	IP66 / I (grounded)
Approvals	EPS 16 ATEX 1 109 X IECEx EPS 16.0048X EAC



Dimentioned Drawing. A) with DIN clip. B) with screw mounting bracket.

- For use in hazardous areas
- Large convection surface
- DIN rail and screw mounting
- Ready-to-use with strain relief
- Maintenance free
- Temperature class T3



Part No. Din Clip	Part No. Screw Mounting	Hole Spacing X	Operating Voltage	Heating Capacity	Rec. Pre-Fuse T (Time-Delay)	Dimensions (D X W X H)	Weight (Approx.)
02031.0-00	02031.0-10	5.9″	AC 230 V	50 W	0.5 A	3.2 x 1.9 x 4.3"	1.5 lbs
02031.9-00	02031.9-10	5.9″	AC 120 V	50 W	1.0 A	3.2 x 1.9 x 4.3"	1.5 lbs
02032.0-00	02032.0-10	8.9″	AC 230 V	100 W	1.0 A	4.7 x 2.4 x 7.1"	2.2 lbs
02032.9-00	02032.9-10	8.9″	AC 120 V	100 W	2.0 A	4.7 x 2.4 x 7.1"	2.2 lbs
02033.0-00	02033.0-10	8.9″	AC 230 V	150 W	1.5 A	4.7 x 2.4 x 7.1"	3.1 lbs
02033.9-00	02033.9-10	8.9″	AC 120 V	150 W	3.0 A	4.7 x 2.4 x 7.1"	3.1 lbs
02034.0-00	02034.0-10	11.8"	AC 230 V	200 W	2.0 A	4.7 x 2.4 x 9.5"	3.7 lbs
02034.9-00	02034.9-10	11.8″	AC 120 V	200 W	4.0 A	4.7 x 2.4 x 9.5"	3.7 lbs
-	02035.0-10	10.8″	AC 230 V	250 W	2.5 A	6.3 x 3.2 x 8.6"	5.1 lbs
-	02035.9-10	10.8″	AC 120 V	250 W	5.0 A	6.3 x 3.2 x 8.6"	5.1 lbs



HVL 031 FAN HEATERS | 100 - 400 W TOUCH-SAFE PTC FAN HEATER

The compact HVL 031 high-performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. For large OEM use, this fan heater can also be provided without the fan, in which case the OEM/customer must provide a fan which meets the minimum airflow requirements.

Heating Element	high performance cartridge
Overheat Protection	built-in temperature limiter
Heater Body	die-cast aluminum, glass bead finish
Axial Fan, Ball Bearing	service life 50,000 h at 77 °F (25 °C)
Air Flow, Free Blowing	see table below
Axial Fan Connection	2-pole terminal AWG 14 max. (2.5 mm²), terminals L2/N2
Connection	3-pole terminal AWG 14 max. (2.5 mm²), torque 0.8 Nm max.
Connection Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	horizontal
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Protection Class / Type	l (grounded) / IP20
Approvals	UL File No. E234324 (all) EAC (all) VDE (AC 230 V only)

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Dimentioned Drawings. A) 100 W/ 150 W Heater. B) 200 W/ 300 W/ 400 W Heater.

- Compact size
- Flat design
- Built-in overheat protection
- 3-side DIN rail mountable

Part No.	Part No.	Heating Capacity	Recommended Pre-Fuse T (Time-Delay)		Min. Airflow (Free Blowing)	Dimensions (D X W X H)	Weight (Approx.)
AC 120 V, 50/60 Hz	AC 230 V, 50/60 Hz		AC 120 V	AC 230 V			
03102.9-00	03102.0-00	100 W	2.0 A	1.0 A	20 cfm (35 m³/h)	1.85 x 3.15 x 4.41" (47 x 80 x 112 mm)	1.3 lbs. (600 g)
03103.9-00	03103.0-00	150 W	2.5 A	1.25 A	20 cfm (35 m³/h)	1.85 x 3.15 x 4.41″ (47 x 80 x 112 mm)	1.3 lbs. (600 g)
03113.9-00	03113.0-00	200 W	3.0 A	2.0 A	63 cfm (108 m³/h)	1.85 x 4.68 x 5.94″ (47 x 119 x 151 mm)	2.0 lbs. (900 g)
03114.9-00	03114.0-00	300 W	4.0 A	2.0 A	63 cfm (108 m³/h)	1.85 x 4.68 x 5.94″ (47 x 119 x 151 mm)	2.0 lbs. (900 g)
03115.9-00	03115.0-00	400 W	6.3 A	4.0 A	63 cfm (108 m ³ /h)	1.85 x 4.68 x 5.94″ (47 x 119 x 151 mm)	2.0 lbs. (900 g)



CS 028 CSL 028 FAN HEATERS | 150 - 400 W TOUCH-SAFE PTC FAN HEATER

The CS 028 / CSL 028 fan heaters prevent formation of condensation and provide an evenly distributed interior air temperature in enclosures. The heaters are connected using the internal terminal connectors. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the heater design. The small size of the CS 028 / CSL 028 heaters make them ideal for use in enclosures where space is at a premium.

Heating Element	PTC resistor - temperature limiting
Axial Fan, Ball Bearing	service life 40,000 h at 104 °F (40 °C)
Air Flow, Free Blowing	CS 028: 8 cfm (13.8 m³/h) CSL 028: 32 cfm (54 m³/h) @ AC 120 V 26 cfm (45 m³/h) @ AC 230 V
Connection	2-pole terminal AWG 14 max. (2.5 mm ²) with strain relief, torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	screw mount (Ø 2.11″/5.3 mm) or clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical
Operating / Storage Temp.	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Class / Type	II (double insulated) / IP20
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Protection Class / Type	I (grounded) / IP20

• Heating power adjusts to ambient temperature

DIN rail or screw mount available







Dimentioned Drawings. A) CS 028 with DIN clip. B) CS 028 with

screw mount tabs.

C) CSL 028 with screw mount tabs.

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Part No. Din Mount	Part No. Screw Mount	Operating Voltage	Heating Capacity*	Max. Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Weight	Approvals	CS 028
02800.9-00	02800.9-01	AC 120 V, 50/60 Hz	150 W	1.0 A	10.0 A	10.6 oz.	UL File No. E234324 - EAC	
02800.0-00	02800.0-01	AC 230 V, 50/60 Hz	150 W	1.25 A	10.0 A	10.6 oz.	UL File No. E234324 VDE EAC	

Part No. Din Mount	Part No. Screw Mount	Operating Voltage	Heating Capacity*	Max. Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Weight	Approvals	CSL 028
02811.9-00	02811.9-01	AC 120 V, 50/60 Hz	250 W	6.0 A	10.0 A	17.6 oz.	UL File No. E234324 - EAC	
02810.9-00	02810.9-01	AC 120 V, 50/60 Hz	400 W	9.0 A	10.0 A	17.6 oz.	UL File No. E234324 - EAC	
02811.0-00	02811.0-01	AC 230 V, 50/60 Hz	250 W	9.0 A	10.0 A	17.6 oz	UL File No. E234324 VDE EAC	
02810.0-00	02810.0-01	AC 230 V, 50/60 Hz	400 W	15.0 A	16.0 A	17.6 oz	UL File No. E234324 VDE EAC	

*at 68 °F (20 °C) ambient temperature

Compact size

Quiet operation

(972) 580-0200 | www.thermaledge.com | thermalinfo@thermaledge.com





CSF 028 FAN HEATERS | 250 W, 400 W TOUCH-SAFE PTC FAN HEATER

The CSF 028 fan heater prevents formation of condensation and provides evenly distributed interior air temperature in enclosures. The touch-safe plastic housing and the small size makes it ideal for use in enclosures with a high packing density. The heater is equipped with a fixed set point thermostat and is easily wired via external pressure clamps. Two different mounting options are available - DIN rail or screw tabs. The robust screw tab mounting is particularly suitable for applications with high vibration.

Heating Element	PTC resistor - temperature limiting
Overheat Protection	built-in temperature limiter
Axial Fan, Free Blowing	32 cfm (54 m³/h) @ AC 120 V26 cfm (45 m³/h) @ AC 230 V
Connection	2-pole dual pressure clamp for solid wire AWG 14 max. (2.5 mm ²), stranded wire (with wire end ferrule) AWG 16 max. (1.5 mm ²)
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or screw mount (Ø 5.5 mm), clamping torque 2 Nm max., washers must be used
Mounting Position	vertical airflow (air outlet up)
Dimensions	models with DIN clip: 4.13 x 3.35 x 4.65" (105 x 85 x 118 mm), models w/ screw tabs: 4.13 x 4.53 x 4.25" (105 x 115 x 108 mm)
Weight	17.6 oz. (500 g)
Operating / Storage Temp.	-40 to +158 °F (-40 to +70 °C) / -49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Class / Type	II (double insulated) / IP20













- Dimentioned Drawings.
- Compact size
- Quiet operation
- Integrated preset thermostat
- Heating power adjusts to ambient temperature
- DIN rail or screw tab mount available

Part No. DIN Mount	Part No. Screw Mount	Operating voltage	Heating capacity*	Max. current (inrush)	Rec. pre-fuse T (time-delay)	Switch-off temp**	Switch-on temp**	Approvals
02821.9-06	02821.9-08	AC 120 V, 50/60 Hz	250 W	6.0 A	10.0 A	59 °F	41 °F	UL File No. E234324 - EAC
02821.9-09	02821.9-11	AC 120 V, 50/60 Hz	250 W	6.0 A	10.0 A	77 °F	59 °F	UL File No. E234324 - EAC
02820.9-06	02820.9-08	AC 120 V, 50/60 Hz	400 W	9.0 A	10.0 A	59 °F	41 °F	UL File No. E234324 - EAC
02820.9-09	02820.9-11	AC 120 V, 50/60 Hz	400 W	9.0 A	10.0 A	77 °F	59 °F	UL File No. E234324 - EAC
02821.0-06	02821.0-08	AC 230 V, 50/60 Hz	250 W	9.0 A	10.0 A	59 °F	41 °F	UL/VDE/EAC
02821.0-09	02821.0-11	AC 230 V, 50/60 Hz	250 W	9.0 A	10.0 A	77 °F	59 °F	UL/VDE/EAC
02820.0-06	02820.0-08	AC 230 V, 50/60 Hz	400 W	15.0 A	16.0 A	59 °F	41 °F	UL/VDE/EAC
02820.0-09	02820.0-11	AC 230 V, 50/60 Hz	400 W	15.0 A	16.0 A	77 °F	59 °F	UL /VDE/EAC

*at 68 °F (20 °C) ambient temperature.

** tolerance of ± 5 K. Note: Other Switch-off and Switch-on temperatures on request.



CS 032 | CSF 032 FAN HEATERS | 1000 W COMPACT PTC FAN HEATER

The compact CS 032 high performance fan heater prevents the formation of condensation and provides an evenly distributed interior air temperature in enclosures. The plastic housing provides protection against contact with current-carrying components via double insulation (protection class II). The fan heater is also available with an optional fixed-point thermostat as the CSF 032. These series were designed to accommodate DIN rail or screw mounting.

Heating Element	PTC resistor - temperature limiting
Heating Capacity*	1,000 W
Overheat Protection	built-in temperature limiter
Surface Temperature	max. 176 °F (80 °C), except upper protective grille at 68 °F (20 °C) ambient temperature
Axial Fan, Ball Bearing	service life 70,000 h at 77 °F (25 °C)
Air Flow, Free Blowing	37 cfm (63 m³/h)
Connection	male power insert connector according to IEC320 C18
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or screw mount (M5, not included), tightening torque 2 Nm max.
Mounting Position	air flow directed up
Operating / Storage Temp.	-40 to +140 °F (-40 to +60 °C) / -40 to +158 °F (-40 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Dimensions	5.9 x 3.5 x 2.6" (150.5 x 88 x 66 mm)
Protection Class / Type	II (double insulated) / IP20
Approvals	UL File No. E234324 VDE, EAC







Dimentioned Drawings CS 032.

Compact design

6.0" (152.5

- High heating performance
- Double insulated plastic housing
- DIN or screw mount
- Optional integrated fixed thermostat

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Part No. Din Mount	Part No. Screw Mount	Series	Operating Voltage	Max. Current (Inrush)	Switch-Off Temp.	Switch-On Temp.	CS 032
03209.0-00	03209.0-01	CS 032, no thermostat	AC 230 V, 50/60 Hz	12.0 A	-	-	
03209.9-00	03209.9-01	CS 032, no thermostat	AC 120 V, 50/60 Hz	18.0 A	-	-	

Part No. Din Mount	Part No. Screw Mount	Series	Operating Voltage	Max. Current (Inrush)	Switch-Off Temp.	Switch-On Temp.	CSF 032
03201.0-00	03201.0-01	CSF 032, with thermostat	AC 230 V, 50/60 Hz	12.0 A	77 °F	59 °F	
03201.9-00	03201.9-01	CSF 032, with thermostat	AC 120 V, 50/60 Hz	18.0 A	77 °F	59 °F	
03202.0-00	03202.0-01	CSF 032, with thermostat	AC 230 V, 50/60 Hz	12.0 A	59 °F	41 °F	
03202.9-00	03202.9-01	CSF 032, with thermostat	AC 120 V, 50/60 Hz	18.0 A	59 °F	41 °F	

**tolerance of ±5 K. Note: Other Switch-off and Switch-on temperatures on request.



CR 027 FAN HEATERS | UP TO 650 W

The semiconductor CR 027 fan heater prevents the formation of condensation and ensures an even temperature in enclosures. The integrated thermostat is used to set the desired temperature while the high performance axial fan provides forced air circulation. The CR 027 is also available with a continuously running fan (when powered).

Heating Element	PTC resistor - temperature limiting
Overheat Protection	built-in temperature limiter
Axial Fan, Ball Bearing	service life 50,000 h at 77 °F (25 °C)
Air Flow, Free Blowing	see table below
Connection	2-pole terminal AWG 14 max. (2.5 mm²), torque 0.8 Nm max.
Housing	plastic, UL 94V-0, light grey
Function Control Light	LED
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical airflow (air outlet up)
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Dimensions	6.5 x 3.94 x 5.0" (165 x 100 x 128 mm)
Recommended Pre-Fuse T (Time-Delay)	10.0 A
Protection Class / Type	II (double insulated) / IP20
Approvals	UL File No. E204590 / VDE / EAC









Dimentioned Drawing. Wiring note: only connect the L and N1 terminals. N2 is not used and grounding is not required.

- Compact fan heater
- Heating power adjusts to ambient temperature
- Integrated adjustable thermostat
- Built-in overheat protection
- DIN rail mountable

Part No.	Heating Capacity* 50 Hz	Heating Capacity* 60 Hz	Operating Voltage	Min. Airflow (Free Blowing)	Thermostat Setting Range**	Weight (Approx.)
02700.0-00	475 W	550 W	AC 220-240 V	20 cfm (35 m³/h)	0 to 60 °C	2.0 lbs (0.9 kg)
02700.9-00	400 W	550 W	AC 100-120 V	20 cfm (35 m³/h)	32 to 140 °F	2.0 lbs (0.9 kg)
02701.0-00	550 W	650 W	AC 220-240 V	26 cfm (45 m³/h)	0 to 60 °C	2.4 lbs (1.1 kg)
02701.9-00	510 W	650 W	AC 100-120 V	26 cfm (45 m³/h)	32 to 140 °F	2.4 lbs (1.1 kg)

*at 68 °F (20 °C) ambient temperature

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**switch temperature difference 7K (±4K tolerance)



HGL 046

FAN HEATERS | 250 W, 400 W

The compact HGL 046 fan heater prevents formation of condensation. The integrated high performance axial fan provides forced air circulation and so guarantees an even temperature in enclosures. The heater is wired using the internal terminal connectors.

Heating Element	resistance - micanite
Overheat Protection	built-in temperature limiter
Heater Body	extruded aluminum, anodized
Surface Temperature	400 W heater - max. 167 °F (75 °C)
Axial Fan, Ball Bearing	service life 50,000 h at 77 °F (25 °C)
Mounting Air Flow, Free Blowing	AC: 26 cfm (45 m ³ /h) - 50 Hz 32 cfm (54 m ³ /h) - 60 Hz DC: 32 cfm (54 m ³ /h)
Connection	3-pole terminal AWG 16 max. (1.5 mm²) with strain relief, clamping torque 0.8 Nm max.
Connection Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Class / Type	I (grounded) / IP20
Protection Class / Type	II (double insulated) / IP20











Dimentioned Drawings.

- Compact size
- Built-in overheat protection
- Long service life
- DIN rail mountable



Part No.	Heating Capacity	Operating Voltage	Rec. Pre-Fuse T (Time-Delay)	Weight (Approx.)	Length	Approvals
04640.0-00	250 W	AC 230 V, 50/60 Hz	2.0 A	2.4 lbs.	7.2"	UL File No. E234324 / VDE / EAC
04640.9-00	250 W	AC 120 V, 50/60 Hz	2.0 A	2.4 lbs.	7.2"	UL File No. E234324 / VDE / EAC
04641.0-00	400 W	AC 230 V, 50/60 Hz	2.0 A	3.1 lbs.	8.7″	UL File No. E234324 / VDE / EAC
04641.9-00	400 W	AC 120 V, 50/60 Hz	2.0 A	3.1 lbs.	8.7″	UL File No. E234324 / VDE / EAC



HVI 030 FAN HEATERS | 500 - 700 W OEM VERSION - NO FAN PROVIDED

The compact high-performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures with electric/electronic components. The heater may only be operated together with a fan, but is also available without axial fan (for self-installation). The fan heaters are available with two different mounting systems – either mounting by screws or with a new and unique twist clip mounting system. These options allow for a quick and easy installation of the fan heater.

Heating Element	high performance cartridge
Overheat Protection	with automatic reset and second-tier one shot fuse
Connection	2-pole dual pressure clamp for solid wire AWG 14 max. (2.5 mm ²), stranded wire (with wire end ferrule) AWG 16 max. (1.5 mm ²)
Housing	plastic, UL 94V-0, black
Mounting	twist clip for 35 mm DIN rail, EN 60715 or M6 screws and washers (not included), torque 2 Nm max.
Mounting Position	vertical airflow (air outlet up)
Operating Temperature	UL: +14 to +104 °F (-10 to +40 °C) VDE: +14 to +122 °F (-10 to +50 °C)
Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Dimensions	6.65 x 5.0 x 1.77″ (169 x 127 x 45 mm)
Weight	approx. 1.7 lbs (0.77 kg)
Protection Class / Type	II (double insulated) / IP20
Approvals	UL File No. E234324 EAC VDE



Dimentioned Drawings.

- Compact size
- Flat design
- Built-in overheat protection
- Twist clip or screw mountable
- End user must attach fan



Part No. Twist Clip	Part No. Screw Mount	Heating Capacity	Operating Voltage	Recommended Pre-Fuse T (Time-Delay)
03082.0-00	03082.0-01	700 W	AC 230 V, 50/60 Hz	6.3 A
03082.9-00	03082.9-01	700 W	AC 120 V, 50/60 Hz	10.0 A
03083.0-00	03083.0-01	600 W	AC 230 V, 50/60 Hz	4.0 A
03083.9-00	03083.9-01	600 W	AC 120 V, 50/60 Hz	8.0 A
03084.0-00	03084.0-01	500 W	AC 230 V, 50/60 Hz	4.0 A
03084.9-00	03084.9-01	500 W	AC 120 V, 50/60 Hz	8.0 A

Important note: Heater may only be operated together with fan (min. 88 cfm). Danger of overheating!



HVI 030 FAN HEATERS | 500 - 700 W FAN INCLUDED

The compact high-performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures with electric/electronic components. The heater may only be operated together with a fan, but is also available without axial fan (for self-installation). The fan heaters are available with two different mounting systems – either mounting by screws or with a new and unique twist clip mounting system. These options allow for a quick and easy installation of the fan heater.

Heating Element	high performance cartridge
Temperature Safety Cut-Out	with automatic reset and second-tier one shot fuse
Axial Fan, Ball Bearing	service life 50,000 h at +77 °F (+25 °C)
Air Flow, Free Blowing	88 cfm (150 m³/h)
Connection	2-pole dual pressure clamp for solid wire AWG 14 max. (2.5 mm ²), stranded wire (with wire end ferrule) AWG 16 max. (1.5 mm ²)
Housing	plastic, UL 94V-0, black
Mounting	twist clip for 35 mm DIN rail, EN 60715 or M6 screws and washers (not included), torque 2 Nm max.
Mounting Position	vertical airflow (air outlet up)
Operating Temperature	UL: +14 to +104 °F (-10 to +40 °C) VDE: +14 to +122 °F (-10 to +50 °C)
Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Dimensions	6.65 x 5.0 x 3.5″ (169 x 127 x 89 mm)
Weight	approx. 3.1 lbs (1.4 kg)
Protection Class / Type	heater: II (double insulated), fan: I (grounded) / IP20
Approvals	UL File No. E234324 EAC VDE





Dimentioned Drawings.

- Compact size
- Flat design
- Built-in overheat protection
- Twist clip or screw mountable



Part No. Twist Clip	Part No. Screw Mount	Heating Capacity	Operating Voltage	Recommended Pre-Fuse T (Time-Delay)
03072.0-00	03072.0-01	700 W	AC 230 V, 50/60 Hz	6.3 A
03072.9-00	03072.9-01	700 W	AC 120 V, 50/60 Hz	10.0 A
03073.0-00	03073.0-01	600 W	AC 230 V, 50/60 Hz	4.0 A
03073.9-00	03073.9-01	600 W	AC 120 V, 50/60 Hz	8.0 A
03074.0-00	03074.0-01	500 W	AC 230 V, 50/60 Hz	4.0 A
03074.9-00	03074.9-01	500 W	AC 120 V, 50/60 Hz	8.0 A

Important note: Heater may only be operated together with fan (min. 88 cfm). Danger of overheating!





CR 030 FAN HEATERS | 950 W FOOT-MOUNT FAN HEATER

The compact CR 030 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an integrated thermostat for temperature control or a pre-set hygrostat for humidity control. The CR 030 was designed as a stationary unit for the bottom of the enclosure. For panel or DIN rail mount, the CR 130 fan heater is recommended.

Heating Element	high performance cartridge
Overheat Protection	with automatic reset and second-tier one shot fuse
Heater Body	extruded aluminum
Axial Fan, Ball Bearing	service life 50,000 h at +77 °F (+25 °C)
Air Flow, Free Blowing	94 cfm (160 m³/h)
Connection	2-pole terminal AWG 16 max. (1.5 mm²) with strain relief, clamping torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	M5 screws (not included)
Mounting Position	vertical airflow (air outlet up)
Operating* / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Dimensions	3.9 x 5.7 x 6.6″ (100 x 145 x 168 mm)
Weight	approx. 3.1 lbs. (1.4 kg)
Protection Class / Type	II (double insulated) / IP20

5.6" (142mm)

Dimentioned Drawings.

- Compact design
- Built-in overheat protection
- Integrated adjustable thermostat or fixed hygrostat
- Double insulated plastic housing

*Operating temperature of heater with integrated hygrostat: +32 to +140 °F (0 to +60 °C)



Part No.	Operating Voltage	Heating Capacity	Rec. Pre-Fuse T (Time-Delay)	Setting Range**	Approvals
03051.0-00	AC 230 V 50/60 Hz	950 W	6.3 A	0 to 60 °C	UL File No. E234324 / VDE / EAC
03051.0-02	AC 230 V 50/60 Hz	950 W	6.3 A	65 %RH, factory-set	UL File No. E234324 / VDE / EAC
03051.0-07	AC 230 V 50/60 Hz	950 W	6.3 A	none (no integrated controls)	UL File No. E234324 / VDE / EAC
03059.9-00	AC 120 V 50/60 Hz	950 W	10.0 A	32 to 140 °F	UL File No. E234324 / EAC
03059.9-02	AC 120 V 50/60 Hz	950 W	10.0 A	none (no integrated controls)	UL File No. E234324 / EAC

**Switching difference 12.6 °F \pm 7 °F tolerance (7 K \pm 4 K)





CR 130 FAN HEATERS | 950 W PANEL-MOUNT FAN HEATER

The compact CR 130 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an integrated thermostat for temperature control or a pre-set hygrostat for humidity control. The CR 130 was designed as a stationary unit for panel or DIN rail mounting. For foot mounting on the bottom of an enclosure, the CR 030 fan heater is recommended.

Heating Element	high performance cartridge
Overheat Protection	with automatic reset and second-tier one shot fuse
Heater Body	extruded aluminum
Axial Fan, Ball Bearing	service life 50,000 h at +77 °F (+25 °C)
Air Flow, Free Blowing	94 cfm (160 m³/h)
Connection	2-pole terminal AWG 16 max. (1.5 mm²) with strain relief, clamping torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or M6 screws (not included)
Mounting Position	vertical airflow (air outlet up)
Operating [*] / Storage Temp.	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Dimensions	3.9" x 6.6" x 7.2" (99 x 168 x 182 mm)
Weight	approx. 3.1 lbs. (1.4 kg)
Protection Class / Type	II (double insulated) / IP20



Dimentioned Drawings.

- Compact design
- Built-in overheat protection
- Integrated adjustable thermostat
 or fixed hygrostat
- Double insulated plastic housing
- Panel or DIN rail mounting

*Operating temperature of heater with integrated hygrostat: +32 to +140 °F (0 to +60 °C)



Part No.	Operating Voltage	Heating Capacity	Rec. Pre-Fuse T (Time-Delay)	Setting Range**	Approvals
13051.0-00	AC 230 V 50/60 Hz	950 W	6.3 A	0 to 60 °C	UL File No. E234324 / VDE / EAC
13051.0-02	AC 230 V 50/60 Hz	950 W	6.3 A	65 %RH, factory-set	UL File No. E234324 / VDE / EAC
13051.0-03	AC 230 V 50/60 Hz	950 W	6.3 A	none (no integrated controls)	UL File No. E234324 / VDE / EAC
13059.9-00	AC 120 V 50/60 Hz	950 W	10.0 A	32 to 140 °F	UL File No. E234324 / EAC
13059.9-02	AC 120 V 50/60 Hz	950 W	10.0 A	none (no integrated controls)	UL File No. E234324 / EAC

**Switching difference 12.6 °F \pm 7 °F tolerance (7 K \pm 4 K)



DCR 030 FAN HEATERS | 200 W TO 800 W 24 VDC, 56 VDC

The compact high performance fan heater DCR 030 prevents formation of condensation and frost and provides an evenly distributed interior air temperature in enclosures with electric/electronic components. The fan heater is available with an integrated electronic thermostat or integrated electronic hygrostat. The model with thermostat is available with internal or external sensor. The fan heater with integrated hygrostat is equipped with an external sensor. The external sensor can be positioned freely anywhere in the enclosure for precise measurements of temperature and humidity. The DCR 030 was designed as a stationary unit for the bottom of the enclosure. For wall fixing the fan heater DCR 130 is recommended.

Heating Element	high performance cartridge
Overheat Protection	with automatic reset and second-tier one shot fuse to protect against overheating in case of fan failure
Heater Body	extruded aluminium profile
Axial Fan, Ball Bearing	service life 50,000 h at +77 °F (+25 °C)
Air Flow, Free Blowing	94 cfm (160 m³/h)
Connection	2-pole "Push-In" connection clamp stranded wire* AWG 16 (1.5 mm²) with strain relief; max. AWG 12 (2.5 mm²)
Housing	plastic, UL 94V-0, black
Mounting	M5 screws and washers (not included), torque 2 Nm max.
Mounting Position	vertical airflow (air outlet up)
Operating Temperature	-4 to +167 °F (-20 to +75 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Dimensions	3.9 x 5.7 x 6.5″ (100 x 145 x 166 mm)
Weight	approx. 2.86 lbs. (1.3 kg)
Protection Class / Type	IP20 / II (double insulated)
Approvals	UL File No. E234324 / VDE / EAC

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





Dimentioned Drawings.

- High DC heating performance
- Integrated adjustable thermostat or hygrostat
- Small hysteresis
- Integrated switch module
- Screw mounting
- Optical indicator (LED)



Part No.	Model	Operating Voltage	Heating Capacity	Rec. Pre-fuse T (time-delay)	Setting Range [†] (temperature/ humidity)
03092.1-16	Fan heater with integrated thermostat with internal temperature sensor	DC 24 V	200 W	16.0 A	-4 to 104 °F
03092.1-17	Fan heater with integrated thermostat with connector for external temperature sensor**	DC 24 V	200 W	16.0 A	-4 to 104 °F
03097.3-16	Fan heater with integrated thermostat with internal temperature sensor	DC 56 V	800 W	20.0 A	-4 to 104 °F
03097.3-17	Fan heater with integrated thermostat with connector for external temperature sensor**	DC 56 V	800 W	20.0 A	-4 to 104 °F
03092.1-03	Fan heater with integrated hygrostat with connector for external humidity sensor**	DC 24 V	200 W	16.0 A	40 to 90 % RH
03095.3-03	Fan heater with integrated hygrostat with connector for external humidity sensor**	DC 56 V	600 W	20.0 A	40 to 90 % RH

**The external sensor needs to be ordered separately; [†] Switching difference temperature: 3 K (±1 K tolerance) at +77 °F (+25 °C), 50 % RH; switching difference humidity: 4 % RH (±1 % tolerance) at +77 °F (+25 °C), 50 % RH.



DCR 130 FAN HEATERS | 200 W TO 800 W 24 VDC, 56 VDC

The compact high performance fan heater DCR 130 prevents formation of condensation and frost and provides an evenly distributed interior air temperature in enclosures with electric/ electronic components. The fan heater is available with an integrated electronic thermostat or electronic hygrostat. The model with thermostat is available with internal or external sensor. The fan heater with integrated hygrostat is equipped with an external sensor. The external sensor can be positioned freely anywhere in the enclosure for precise measurements of temperature and humidity. The DCR 130 was designed for wall fixing. For fixing on the bottom of the enclosure the fan heater DCR 030 is recommended.

Heating Element	high performance cartridge
Overheat Protection	with automatic reset and second-tier one shot fuse to protect against overheating in case of fan failure
Heater Body	extruded aluminium profile
Axial Fan, Ball Bearing	service life 50,000 h at +77 °F (+25 °C)
Air Flow, Free Blowing	94 cfm (160 m³/h)
Connection	2-pole "Push-In" connection clamp stranded wire* AWG 16 (1.5 mm²) with strain relief; max. AWG 12 (2.5 mm²)
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or M6 screws and washers (not included), torque 2 Nm max.
Mounting Position	vertical airflow (air outlet up)
Operating Temperature	-4 to +167 °F (-20 to +75 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Dimensions	3.9 x 6.6 x 7.0″ (99 x 168 x 179 mm)
Weight	approx. 2.86 lbs. (1.3 kg)
Protection Class / Type	IP20 / II (double insulated)
Approvals	UL File No. E234324 / VDE / EAC

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





Dimentioned Drawings.

- High DC heating performance
- Integrated adjustable thermostat or hygrostat
- Small hysteresis
- Integrated switch module
- Panel or DIN rail mounting
- Optical indicator (LED)



Part No.	Model	Operating Voltage	Heating Capacity	Rec. Pre-fuse T (time-delay)	Setting Range [†] (temperature/ humidity)
13092.1-16	Fan heater with integrated thermostat with internal temperature sensor	DC 24 V	200 W	25.0 A	-4 to 104 °F
13092.1-17	Fan heater with integrated thermostat with connector for external temperature sensor**	DC 24 V	200 W	25.0 A	-4 to 104 °F
13097.3-16	Fan heater with integrated thermostat with internal temperature sensor	DC 56 V	800 W	25.0 A	-4 to 104 °F
13097.3-17	Fan heater with integrated thermostat with connector for external temperature sensor**	DC 56 V	800 W	25.0 A	-4 to 104 °F
13092.1-03	Fan heater with integrated hygrostat with connector for external humidity sensor**	DC 24 V	200 W	25.0 A	40 to 90 % RH
13095.3-03	Fan heater with integrated hygrostat with connector for external humidity sensor**	DC 56 V	600 W	25.0 A	40 to 90 % RH

**The external sensor needs to be ordered separately. [†] Switching difference temperature: 3 K (±1 K tolerance) at +77 °F (+25 °C), 50 % RH; switching difference humidity: 4 % RH (±1 % tolerance) at +77 °F (+25 °C), 50 % RH.





CS 030 FAN HEATERS | 1200 W FOOT-MOUNT PTC FAN HEATER

The compact CS 030 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an optional integrated thermostat for temperature control. The CS 030 was designed as a stationary unit for the bottom of the enclosure. For panel or DIN rail mount, the CS 130 fan heater is recommended.

Heating Element	PTC resistor, temperature limiting
Overheat Protection	built-in temperature limiter
Axial Fan, Ball Bearing	service life 50,000 h at +77 °F (+25 °C)
Air Flow, Free Blowing	94 cfm (160 m³/h)
Connection	2-pole terminal AWG 16 max. (1.5 mm²) with strain relief, clamping torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	M5 screws (not included)
Mounting Position	vertical airflow (air outlet up)
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Dimensions	4.7 x 5.7 x 6.6″ (120 x 145 x 168 mm)
Weight	approx. 2.6 lbs. (1.2 kg)
Protection Class / Type	IP20 / II (double insulated)
Heating Capacity*	1,200 W





Dimentioned Drawings.

- Compact design
- Built-in overheat protection
- Integrated adjustable thermostat (optional)
- Double insulated plastic housing

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Part No.	Operating Voltage	Max Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Setting Range**	Approvals
03060.0-00	AC 230 V 50/60 Hz	13.0 A	10.0 A	0 to 60 °C	UL File No. E150057 [†] / VDE / EAC
03060.0-01	AC 230 V 50/60 Hz	13.0 A	10.0 A	none (no integrated controls)	UL File No. E150057 [†] / VDE / EAC
03060.9-00	AC 120 V 50/60 Hz	16.0 A	16.0 A	32 to 140 °F	UL File No. E150057† / EAC
03060.9-01	AC 120 V 50/60 Hz	16.0 A	16.0 A	none (no integrated controls)	UL File No. E150057† / EAC

**Switching difference 12.6 °F \pm 7 °F tolerance (7 K \pm 4 K); [†] according to UL 508A, NITW File on request.

*at 68 °F (20 °C) ambient temperature





CS 130 FAN HEATERS | 1200 W PANEL-MOUNT PTC FAN HEATER

The compact CS 130 high performance fan heater prevents formation of condensation and provides an evenly distributed interior air temperature in enclosures. This fan heater is available with an optional integrated thermostat for temperature control. The CS 130 was designed as a stationary unit for panel or DIN rail mounting. For foot mounting on the bottom of an enclosure, the CS 030 fan heater is recommended.

Heating Element	PTC resistor, temperature limiting		
Overheat Protection	built-in temperature limiter		
Axial Fan, Ball Bearing	service life 50,000 h at +77 °F (+25 °C)		
Air Flow, Free Blowing	94 cfm (160 m³/h)		
Connection	2-pole terminal AWG 16 max. (1.5 mm²) with strain relief, clamping torque 0.8 Nm max.		
Housing	plastic, UL 94V-0, black		
Mounting	clip for 35 mm DIN rail, EN 60715 or M6 screws (not included)		
Mounting Position	vertical airflow (air outlet up)		
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)		
Operating / Storage Humidity	max. 90 %RH (non-condensing)		
Dimensions	4.7" x 6.6" x 7.2" (120 x 168 x 182 mm)		
Weight	approx. 2.6 lbs. (1.2 kg)		
Protection Class / Type	IP20 / II (double insulated)		
Heating Capacity*	1,200 W		





Dimentioned Drawings.

- Compact design
- Built-in overheat protection
- Integrated adjustable thermostat (optional)
- Double insulated plastic housing
- Panel or DIN rail mounting

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Part No.	Operating Voltage	Max Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Setting Range**	Approvals
13060.0-00	AC 230 V 50/60 Hz	13.0 A	10.0 A	0 to 60 °C	UL File No. E150057 [†] / VDE / EAC
13060.0-01	AC 230 V 50/60 Hz	13.0 A	10.0 A	none (no integrated controls)	UL File No. E150057 [†] / VDE / EAC
13060.9-00	AC 120 V 50/60 Hz	16.0 A	16.0 A	32 to 140 °F	UL File No. E150057 [†] / EAC
13060.9-01	AC 120 V 50/60 Hz	16.0 A	16.0 A	none (no integrated controls)	UL File No. E150057 [†] / EAC

**Switching difference 12.6 °F \pm 7 °F tolerance (7 K \pm 4 K); [†] according to UL 508A, NITW File on request.

*at 68 °F (20 °C) ambient temperature



RCE 016 PTC HEATERS | 5 W, 9 W

The RCE 016 small heaters have been designed to prevent condensation and to ensure a minimum operating temperature in small enclosures. They are suitable for permanent operation.

Heating Element	PTC resistor, temperature limiting		
Heater Body	aluminum, anodized		
Insulation	PTFE / Kapton		
Mounting	2 pressure clips included (mounting screws not included)		
Mounting Position	variable		
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)		
Operating / Storage Humidity	max. 90 %RH (non-condensing)	D	
Dimensions	length 1.77" , Ø 0.39" (45 mm, Ø 10 mm)		
Protection Class / Type	II (double insulated) / IP54	•	
Approvals	UL File No. E234324 / VDE / EAC	•	



Dimentioned Drawing.

- Compact size
- Wide voltage range
- Heating power adjusts to ambient temperature
- Energy saving

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Part No.	Heating Capacity [*]	Operating Voltage**	Max Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Surface Temperature (Approx.)*	Weight (Approx.)
01622.0-03	5 W	AC/DC 120-240 V	2.0 A	2.0 A	329 °F (165 °C)	0.7 oz. (20 g)
01623.0-01	9 W	AC/DC 120-240 V	4.0 A	4.0 A	347 °F (175 °C)	0.7 oz. (20 g)

*at 68 °F (20 °C) ambient temperature

^{**} operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10% (min. 110 V, max 265 V)



RC 016 PTC HEATERS | 8 W, 10 W, 13 W

The RC 016 small heaters are designed to prevent condensation and to ensure a minimum operating temperature in small enclosures. They are suitable for permanent operation.

Heating Element	PTC resistor, temperature limiting			
Heater Body	aluminum, anodized			
Insulation	PTFE / Kapton			
Mounting	screw (mounting screws not included)			
Mounting Position	variable			
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)			
Operating / Storage Humidity	max. 90 %RH (non-condensing)			
Dimensions	length 1.77", Ø 0.39" (45 mm, Ø 10 mm)			
Protection Class / Type	II (double insulated) / IP54			
Approvals	UL File No. E234324 / VDE / EAC			



Dimentioned Drawings.

- Compact size
- Wide voltage range
- Heating power adjusts to ambient temperature
- Energy saving

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Part No.	Heating Capacity [*]	Operating Voltage**	Max Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Surface Temperature (Approx.)*	Weight (Approx.)
01602.0-00	8 W	AC/DC 120-240 V	2.0 A	2.0 A	302 °F (150 °C)	0.7 oz. (20 g)
01609.0-00	10 W	AC/DC 120-240 V	2.5 A	4.0 A	311 °F (155 °C)	1.0 oz. (28 g)
01610.0-00	13 W	AC/DC 120-240 V	3.0 A	4.0 A	338 °F (170 °C)	1.2 oz. (34 g)

^{*}at 68 °F (20 °C) ambient temperature

** operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10% (min. 110 V, max 265 V)



HGK 047 PTC HEATERS | 10 W TO 30 W

The HGK 047 heaters are used in enclosures to maintain minimum operating temperatures and to help prevent failure of electronic components caused by condensation and corrosion. They are suitable for permanent operation.

Heating Element	PTC resistor, temperature limiting
Heater Body	extruded aluminum profile, anodized
Connection	3 x AWG 20 (0.5 mm²), 12" (300 mm) length
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical airflow (air outlet up, connection on bottom)
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Class / Type	I (grounded) / IP44



Dimentioned Drawings.

- Compact size
- Wide voltage range
- Heating power adjusts to
 ambient temperature
- DIN rail mountable



Part No.	Operating Voltage*	Heating Capacity**	Max Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Length (L)	Weight (Approx.)	Approvals
04700.0-00	10 W	AC/DC 120-240 V	1.0 A	2.0 A	2.05″	3.0 oz.	VDE / EAC
04701.0-00	20 W	AC/DC 120-240 V	2.5 A	4.0 A	2.36″	3.6 oz.	VDE / EAC
04702.0-00	30 W	AC/DC 120-240 V	3.0 A	4.0 A	2.76″	4.0 oz.	VDE / EAC
04700.9-00	10 W	AC/DC 120-230 V	1.0 A	2.0 A	2.05″	3.0 oz.	UL File No. E234324 VDE / EAC
04701.9-00	20 W	AC/DC 120-230 V	1.5 A	2.0 A	2.76	4.0 oz.	UL File No. E234324 VDE / EAC
04702.9-00	30 W	AC/DC 120-230 V	1.5 A	2.0 A	3.94"	5.2 oz.	UL File No. E234324 VDE / EAC

^{*(}min. 110 V, max 265 V) operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10 %

^{**}at 68°F (20°C) ambient temperature



HG 140 PTC HEATERS | 15 W TO 150 W

These heaters are used in enclosures where damage from condensation must be prevented, or where the temperature must be maintained above a minimum value. They are suitable for permanent operation. The aluminum profile heater body design has a chimney effect to distribute heat evenly. The cage clamp connectors save time and simplify installation.

Operating Voltage*	AC/DC 120-240 V (min. 110 V, max. 265 V)		
Heating Element	PTC resistor, temperature limiting		
Heater Body	extruded aluminum profile, anodized		
Connection	3 cage clamps for solid wire AWG 20-14 (0.5-2.5 mm ²), and stranded wire (with wire end ferrule) AWG 20-16 (0.5-1.5 mm ²)		
Connection Casing	plastic, UL 94V-0, black		
Mounting	clip for 35 mm DIN rail, EN 60715		
Mounting Position	vertical airflow (air outlet up, connection on bottom)		
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)		
Operating / Storage Humidity	max. 90 %RH (non-condensing)		
Protection Class / Type	I (grounded) / IP44		
Approvals	UL File No. E150057 / VDE / EAC		



Dimentioned Drawings.

- Compact size
- Wide voltage range
- Heating power adjusts to
 ambient temperature
- Cage clamp connectors for quick & easy wiring
- DIN rail mountable



Part No.	Heating Capacity**	Max Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Length (L)	Weight (Approx.)
14000.0-00	15 W	1.5 A	2.0 A	2.56″ (65 mm)	7.6 oz. (215 g)
14001.0-00	30 W	3.0 A	4.0 A	2.56″ (65 mm)	7.6 oz. (215 g)
14003.0-00	45 W	3.5 A	4.0 A	2.56″ (65 mm)	7.6 oz. (215 g)
14005.0-00	60 W	2.5 A	4.0 A	5.5″ (140 mm)	14.1 oz. (400 g)
14006.0-00	75 W	4.0 A	6.3 A	5.5″ (140 mm)	14.3 oz. (405 g)
14007.0-00	100 W	4.5 A	8.0 A	5.5″ (140 mm)	14.3 oz. (405 g)
14008.0-00	150 W	9.0 A	10.0 A	8.66″ (220 mm)	14.3 oz. (405 g)

**at 68°F (20°C) ambient temperature

*Operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10%.





CS 060 PTC HEATERS | 50 W TO 150 W TOUCH-SAFE PTC HEATER

The CS 060 is a touch-safe heater for use in enclosures. The design of the heater utilizes natural convection which results in a circulating current of warm air. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the heater design. The CS 060 is also available in a version with a plug-in thermostat requiring no additional wiring (CSF 060). These heaters are suitable for permanent operation.

Operating Voltage*	AC/DC 120-240 V (min. 110 V, max. 265 V)
Heating Element	PTC resistor, temperature limiting
Surface Temperature	< 176 °F (80 °C), except upper protective grill
Connection	4-pole terminal AWG 14 max (2.5 mm²), torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical airflow (air outlet up, connection on bottom)
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Class / Type	II (double insulated) / IP20
Approvals	UL File No. E150057 / VDE / EAC

*Operating high voltage heaters below AC/DC 140 V reduces heating



-	3.54" (90 mm)



Dimentioned Drawings.

- Low surface temperature
- Compact size
- Wide voltage range
- Double insulated protection
- DIN rail mountable



Part No.	Heating Capacity*	Dimensions	Max. Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Air Outlet Temperature [†]	Weight (Approx.)
06000.0-00	50 W	4.3 x 2.36 x 3.54"	2.5 A	2.5 A	187 °F (86 °C)	10.4 oz. (295 g)
06010.0-00	100 W	4.3 x 2.36 x 3.54"	4.5 A	4.5 A	248 °F (120 °C)	10.6 oz. (300 g)
06020.0-00	150 W	5.9 x 2.36 x 3.54"	8 A	8 A	293 °F (145 °C)	15.5 oz. (440 g)

 $[*]see \ Heating \ Power \ / \ Ambient \ Temperature \ diagram$

performance by approx. 10%

[†] measured 2" (50 mm) above protective grill





CSF 060 PTC HEATERS | 50 W TO 150 W TOUCH-SAFE PTC HEATER

The CSF 060 is a touch-safe heater for use in enclosures. The design of the heater utilizes natural convection which results in a circulating current of warm air. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the heater design. This model with plug-in thermostat does not require additional wiring. The CSF 060 is also available in a version without thermostat (CS 060). These heaters are suitable for permanent operation.

Operating Voltage*	AC/DC 120-240 V (min. 110 V, max. 265 V)
Heating Element	PTC resistor, temperature limiting
Surface Temperature	< 176 °F (80 °C), except upper protective grill
Connection	4-pole terminal AWG 14 max (2.5 mm²), torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical airflow (air outlet up, connection on bottom)
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Class / Type	II (double insulated) / IP20
Approvals	UL File No. E150057 / VDE / EAC

 $^{*}Operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10\%$







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Dimentioned Drawings.

- Low surface temperature
- Integrated thermostat
- Compact size
- Wide voltage range
- Double insulated protection
- DIN rail mountable



Part No.	Heating Capacity**	Dimensions	Max. Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Air Outlet Temp†	Switch-Off Temp§	Switch-On Temp§	Weight (Approx.)
06001.0-00	50 W	5.24 x 2.36 x 3.54"	2.5 A	4.0 A	187 °F	59 °F	41 °F	10.8 oz.
06002.0-00	50 W	5.24 x 2.36 x 3.54"	2.5 A	4.0 A	187 °F	77 °F	59 °F	10.8 oz.
06011.0-00	100 W	5.24 x 2.36 x 3.54"	4.5 A	8.0 A	248 °F	59 °F	41 °F	11.2 oz.
06012.0-00	100 W	5.24 x 2.36 x 3.54"	4.5 A	8.0 A	248 °F	77 °F	59 °F	11.2 oz.
06021.0-00	150 W	6.8 x 2.36 x 3.54"	8.0 A	10.0 A	293 °F	59 °F	41 °F	15.9 oz.
06022.0-00	150 W	6.8 x 2.36 x 3.54″	8.0 A	10.0 A	293 °F	77 °F	59 °F	15.9 oz.

**see Heating Power / Ambient Temperature diagram;

[†]measured 2" (50 mm) above protective grill; § tolerance of $\pm 5 K$





CSK 060 PTC HEATERS | 10 W, 20 W TOUCH-SAFE PTC HEATER

The CSK 060 is a touch-safe heater for use in enclosures. The design of the heater utilizes natural convection which results in a circulating current of warm air. The surface temperatures on the accessible side surfaces of the housing are minimized as a result of the heater design. This heater is suitable for permanent operation.

Operating Voltage*	AC/DC 120-240 V (min. 110 V, max. 265 V)
Heating Element	PTC resistor, temperature limiting
Surface Temperature	< 185 °F (85 °C), except upper protective grill
Connection	2-pole terminal AWG 14 max (2.5 mm²), torque 0.8 Nm max.
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical airflow (air outlet up, connection on bottom)
Operating / Storage Temperature	-49 to +158 °F (-45 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Class / Type	II (double insulated) / IP20
Approvals	UL File No. E150057 / VDE / EAC

*Operating high voltage heaters below AC/DC 140 V reduces heating performance by approx. 10%









Dimentioned Drawings.

- Low surface temperature
- Compact size
- Wide voltage range
- Double insulated protection
- DIN rail mountable



Part No.	Heating Capacity*	Dimensions	Max. Current (Inrush)	Rec. Pre-Fuse T (Time-Delay)	Weight (Approx.)
06030.0-00	20 W	3.86 x 2.95 x 1.5″	2.5 A	4.0 A	6.1 oz. (170 g)
06040.0-00	10 W	3.86 x 2.95 x 1.5″	1.0 A	2.0 A	5.0 oz. (140 g)

^{*}at 68 °F (20 °C) ambient temperature



CP 061 PTC HEATERS | 50 W, 100 W FLAT HEATER

The Flat Heater CP 061 is used to provide evenly distributed temperature within enclosures and cabinets with electric/electronic components. Its ultra-thin design makes it particularly suitable for high-density applications in which standard enclosure heaters are often too big in size. Depending on the application, the Flat Heater can be used as a convection heater or as a contact heater. When used as a contact heater it offers thermoconductive contact to a component or a cabinet wall in need to be heated. Additionally, a mounting system especially designed for the CP 061 allows for the compensation of an expansion of the heater body as a result of the heating-up when in operation. Operated as a convection heater, the slim heater CP 061 warms up the ambient air within a cabinet. The CP 061 is designed for permanent operation.

Heating Element	resistance heater
Overheat Protection	with automatic reset
Heating Body	aluminum profile
Surface Temperature	max. +302 °F (+150 °C) at +77 °F (+25 °C)
Connection	silicone cable (halogen-free) 3 x AWG 18 (0.75 mm²), length 3 ft (1 m)
Housing	plastic, UL 94V-0, black
Mounting	screw mount M6 (not included)
Mounting Position	horizontal, variable connection or vertical, connection on bottom
Dimensions	L x 4" x .32" (L x 100 x 8 mm)
Operating / Storage Temperature	-40 to +185 °F (-40 to +85 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Class / Type	IP30 / I (grounded)



Dimentioned Drawings.

- Low surface temperature
- Compact size
- Wide voltage range
- Double insulated protection
- DIN rail mountable



Part No.	Heating Capacity	Operating Voltage	Length (L)	Hole Spacing (X)	Weight Approx.	Operating Temperature	Approvals
06100.0-00	50 W	AC 230 V, 50/60 Hz	9.41″	8.9"	.88 lbs	-40 to +140 °F	VDE / EAC
06101.0-00	100 W	AC 230 V, 50/60 Hz	16.3″	15.75"	1.54 lbs	-40 to +140 °F	VDE / EAC
06100.9-00	50 W	AC 120 V, 50/60 Hz	9.41″	8.9"	.88 lbs	-40 to +104 °F	UL / EAC
06101.9-00	100 W	AC 120 V, 50/60 Hz	16.3″	15.75"	1.54 lbs	-40 to +104 °F	UL / EAC



12/14/2023

LE 019 FANS | 286 - 1017 CFM 19" FAN TRAY

The LE 019 is a compact high performance fan tray for forced circulation of air in enclosures and for cooling of 19" rack mount applications. Natural convection is improved and the formation of hot zones is prevented. Also available with integrated thermostat (see photo).

Axial Fans, Ball Bearing	service life 50,000 h at 77 °F (25 °C) and 65 %RH, fan body aluminum, rotor plastic
Material	front panel aluminum, bright anodized casing steel sheet, electrogalvanized
Optical Indicator	integrated in front panel
Connection	power inlet on rear of casing, plug included (no cable)
Mounting Position	horizontal (direction of air upward)
Operating / Storage Temperature	+14 to +140 °F (-10 to +60 °C) -40 to +158 °F (-40 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Class / Type	I (grounded)/ IP20



Dimentioned Drawings.

• High air volume

- Long service life
- Easy installation and connection
- Function control light
- Optional integrated thermostat

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Part No.	Thermostat	Number Of Fans	Operating Voltage	Air Flow, Free Blowing	Power	Avg. Noise Level	Speed (RPM)	Weight (Approx.)	Approvals**
01930.0-00	-	3	AC 230 V, 50 Hz*	286 cfm	45 W	55 db (A)	2600	6.6 lbs.	UL / EAC
01930.1-00	0 to 60 °C	3	AC 230 V, 50 Hz*	286 cfm	45 W	55 db (A)	2600	7.5 lbs.	UL / EAC
01931.0-00	-	3	AC 120 V, 60 Hz	339 cfm	45 W	55 db (A)	2900	6.6 lbs.	UL / EAC
01931.1-00	0 to 60 °C	3	AC 120 V, 60 Hz	339 cfm	45 W	55 db (A)	2900	7.5 lbs.	UL / EAC
01940.0-00	-	6	AC 230 V, 50 Hz*	572 cfm	90 W	57 db (A)	2600	11.7 lbs.	UL / EAC
01940.1-00	0 to 60 °C	6	AC 230 V, 50 Hz*	572 cfm	90 W	57 db (A)	2600	12.5 lbs.	UL / EAC
01941.0-00	-	6	AC 120 V, 60 Hz	678 cfm	90 W	57 db (A)	2900	11.7 lbs.	UL / EAC
01941.1-00	0 to 60 °C	6	AC 120 V, 60 Hz	678 cfm	90 W	57 db (A)	2900	12.5 lbs.	EAC
01950.0-00	-	9	AC 230 V, 50 Hz*	858 cfm	135 W	58 db (A)	2600	17.2 lbs.	UL / EAC
01950.1-00	0 to 60 °C	9	AC 230 V, 50 Hz*	858 cfm	135 W	58 db (A)	2600	17.4 lbs.	EAC
01951.0-00	-	9	AC 120 V, 60 Hz	1017 cfm	135 W	58 db (A)	2900	17.2 lbs.	UL / EAC
01951 1-00	0 to 60 °C	9	AC 120 V. 60 Hz	1017 cfm	135 W	58 db (A)	2900	17.4 lbs	FAC

*air volume increases by 15% when operating AC 230 V filter fans at 60 Hz;

NOTE: The use of a thermostat, whether integrated or external, is recommended. When using a fan tray with integrated thermostat, an additional thermostat (e.g. KTS 111 Part No. 11101.0-00) may be used if it is desired to switch a signal device should the enclosure interior temperature rise above a set limit (e.g. in case of fan failure).

For models without integrated thermostat, the use of a dual thermostat (e.g. ZR 011 Part No. 01176.0-00) provides the same overheat protection, i.e. one thermostat to control the fan tray operation, one thermostat for a signal device.



SJ 019

FANS | 286 - 1017 CFM

The SJ 019 is a compact, powerful built-in fan. It allows precise cooling of heat sources and the air flow prevents formation of heat pockets. Its design offers a maximum rotation range with an air output in almost any direction. The dual clip system (two clips at a 90° angle) allows four different positions on a DIN rail, while the hinge in the housing can be moved at a 40° angle. Additionally, the airflow at the air outlet can be directed at a 45° angle and the air duct can be rotated in steps of 60° .

Axial Fans, Ball Bearing	air flow 16.2 cfm (27.6 m³/h), free flow
Power Consumption	4 W
Average noise level (DIN EN ISO 4871)	44 dB (A)
Connection	2-pole dual cage clamp for solid wire - AWG 14 (2.5 mm²), stranded wire (w/ wire end ferrule) - AWG 16 (1.5 mm²)
Housing	plastic, UL 94V-0, black
Mounting	clip for 35 mm DIN rail, EN 60715 or with M5 screws and washers (not included), torque 2 Nm max.
Mounting Position	variable
Dimensions	5.2 x 2.95 x 2.4" (132 x 75 x 60 mm)
Weight	approx. 7 oz. (0.2 kg)
Operating / Storage Temperature	+14 to +140 °F (-10 to +60 °C) -22 to +158 °F (-30 to +70 °C)
Operating / Storage Humidity	max. 90 %RH (non-condensing)
Protection Type	IP20



Dimentioned Drawings.

A) Screw mounting. B) DIN rail mounting

- Prevents heat pockets
- Wide voltage range
- Compact design
- Quick connection
- Clip or screw mounting



Part No.	Model	Operating voltage	Protection class	Approvals*
01925.0-00	DIN rail mounting	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	ll (double insulated)	UL / EAC
01925.0-01	Screw mounting	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	ll (double insulated)	UL / EAC
01925.1-00	DIN rail mounting	DC 24 V (min. DC 12 V, max. DC 26.4 V)	III (double insulated)	EAC
01925.1-01	Screw mounting	DC 24 V (min. DC 12 V, max. DC 26.4 V)	III (double insulated)	EAC

*UL File No. E234324



KTS 111 KTO 111 THERMOSTATS | SMALL THERMOSTAT

The mechanical thermostats KTO 111 and KTS 111 are two state regulators for use up to 5,000 meters in altitude, thanks to optimized air gap and increased creepage distance. By use of Push-In terminals the thermostat is wired tool-free. The Push-In terminals provide constant pressure on the wires to prevent them from coming loose (e.g. during transport).

KTS 111: 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.

KTO 111: Thermostat (NC); contact breaker for regulating heaters. The contact opens when temperature is rising.

Switch Temperature Difference	7 K (±4 K tolerance)
Sensor Element	thermostatic bimetal
Contact Type	snap-action contact
Service Life	100,000 cycles verified
Max. Operating Voltage, Frequency Range	AC 250 V, 50-60 Hz
Max. Inrush Current	AC 16 A for 10 sec.
Connection*	2 Push-In clamps rigid wire 2.5 mm² (AWG 14) stranded wire 1.5 mm² (AWG 16)
Mounting	clip for 35 mm DIN rail, EN 60715
Casing	plastic according to UL94 V-0, light grey
Dimensions	60 x 33 x 41 mm
Weight	approx. 40 g
Fitting Position	variable
Operating/Storage Temperature	-45 to +80 °C (-49 to +176 °F)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type/Protection Class	IP20 / II
Overvoltage Category/Altitude	II: up to 5,000 m; III: up to 2,000 m
Approvals	UL File No. E164102 / VDE / EAC

*Stripped length of rigid wire: 10 to 12 mm. When connecting with wires, wire end ferrules must be used (square or trapezoid crimp). Length of wire end ferrule: 10 mm or 12 mm.

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.



Dimentioned Drawings

- Safe wiring with Push-In connection terminal
- Faster and tool-free wiring
- Improved air intakes for ventilation
- Easy adjustability of switch
 temperature setting
- For use in up to 16,000 ft.altitude





🗵 Heater

Filter Fan, Cooling Eqpt, Signal Device

Sotting Dange	Dart No. (NC)	Part No. (NO)	Switching C	urrent**/Capac	ity Max
Setting Range			AC 250 V	AC 120 V	DC 24-72 V
+32 to +140 °F	11100.9-00	11101.9-00	10 (2) A	15 (2) A	30 W
+14 to +122 °F	11100.9-01	11101.9-01	10 (2) A	15 (2) A	30 W
0 to +60 °C	11100.0-00	11101.0-00	10 (2) A	15 (2) A	30 W
-10 to +50 °C	11100.0-01	11101.0-01	10 (2) A	15 (2) A	30 W
+20 to +80 °C	11100.0-02	11101.0-02	3 (2) A	3 (2) A	30 W

** The level of switching current has an influence on the tolerance accuracy.



STS 011 | STO 011

THERMOSTATS | COMPACT THUMBWHEEL THERMOSTAT

The ST 011 thermostat is an SPST regulator with small hysteresis. The housing design ensures optimized air circulation around the sensor element.

STS 011 NO (normally open): Thermostat closes on temperature rise (blue thumbwheel) for regulating filter fans, heat exchangers, cooling devices or for switching signal devices when temperature limit has been exceeded.

STO 011 NC (normally closed): Thermostat opens on temperature rise (red thumbwheel) for regulating heaters or for switching signal devices when temperature has fallen below the minimum value.

Switch difference	7 °F (4 K) ± 5.4 °F (3 K) tolerance
Sensor element	thermostatic bimetal
Contact type	snap-action contact
Service life	>100,000 cycles verified
Connection	2-pole terminal, clamping torque 1 Nm max.: solid/ stranded* wire - AWG 14 max. (2.5 mm²)
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting position	variable
Operating/Storage temperature	-45 to +80 °C (-49 to +176 °F)
Operating/Storage humidity	max. 90 % RH (non-condensing)
Protection type/Protection class	IP20
Dimensions	2.76 x 1.3 x 1.65" (70 x 33 x 42 mm)
Weight	approx. 1.8 oz. (50 g)
Protection type	IP20
Approvals	UL File No. E164102, VDE, EAC
Overvoltage Category/Altitude	II: up to 5,000 m; III: up to 2,000 m
Approvals	UL File No. E164102 / VDE / EAC

*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.



2.8 " (70mm) Dimentioned Drawings.

- Adjustable thumbwheel setting
- Compact design
- Small hysteresis
- High switching capacity
- DIN rail mountable





Convenient minimum setpoint symbol on the NC thermostat assures enclosure temperature remains above freezing.

Part No. (NC)	Part No. (NO)	Setting range	Max. switching capacity
01115.9-00	01116.9-00	+32 to +140 °F	15 A resistive / 2 A inductive @ AC 120 V
01115.0-00	01116.0-00	0 to +60 °C	DC 30 W (DC 24-72 V)



FTS 011 FTO 011 THERMOSTATS

TAMPERPROOF THERMOSTAT

Tamperproof (Pre-set) FTS 011 (normally open): Thermostat closes on temperature rise (blue module housing) - for regulating filter fans, heat exchangers, cooling devices or for switching signal devices when temperature limit has been exceeded.

Tamperproof (Pre-set) FTO 011 (normally closed): Thermostat opens on temperature rise (red module housing) - for regulating heaters or for switching signal devices when temperature has fallen below the minimum value.

Sensor Element	thermostatic bimetal
Contact Type	snap-action contact
Service Life	>100,000 cycles verified
Max. Switching Capacity	10 A resistive / 2 A inductive @ AC 120 V 5 A resistive / 1.6 A inductive @ AC 250 V DC 30 W
Max. Inrush Current	AC 16 A for 10 sec.
Connection	2-pole terminal, clamping torque 0.8 Nm max.: solid/ stranded* wire - AWG 14 max. (2.5 mm²)
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical
Operating/Storage Temperature	-40 to +176 °F (-40 to +80 °C) -49 to +176 °F (-45 to +80 °C)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Dimensions	1.85 x 1.3 x 1.3″ (47 x 33 x 33 mm)
Weight	approx. 0.8 oz. (23 g)
Protection Type	IP20
Approvals	UL File No. E164102 / VDE / EAC



Dimentioned Drawings.

- Compact design
- Fixed set point
- Color coded modules
- DIN rail mountable



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

FTS 011	Part No.	Contact	Switch-off temperature	Switch-on temperature
	01161.0-00	NO - close on rise	122 °F / 50 °C (± 12.6 °F / 7 K tolerance)	104 °F / 40 °C (± 11 °F / 6 K tolerance)
	01161.0-01	NO - close on rise	140 °F / 60 °C (± 12.6 °F / 7 K tolerance)	122 °F / 50 °C (± 12.6 °F / 7 K tolerance)
	01161.0-02	NO - close on rise	95 °F / 35 °C (± 12.6 °F / 7 K tolerance)	77 °F / 25 °C (± 11 °F / 6 K tolerance)

FT0 011	Part No.	Contact	Switch-off temperature	Switch-on temperature
	01160.0-00	NC - open on rise	59 °F / 15 °C (± 9 °F / 5 K tolerance)	41 °F / 5 °C (± 9 °F / 5 K tolerance)
	01160.0-01	NC - open on rise	77 °F / 25 °C (± 9 °F / 5 K tolerance)	59 °F / 15 °C (± 9 °F / 5 K tolerance)
	01160.0-05	NC - open on rise	50 °F / 10 °C (± 9 °F / 5 K tolerance)	32 °F / 0 °C (± 9 °F / 5 K tolerance)

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FTD 011 THERMOSTATS

TAMPERPROOF DUAL THERMOSTAT

Two thermostats in one housing:

Tamperproof (Pre-set) Thermostat NC (normally closed): opens on temperature rise (red module housing) - for regulating heaters or for switching signal devices when temperature has fallen below the minimum value.

Tamperproof (Pre-set) **Thermostat NO** (normally open): closes on temperature rise (blue module housing) - for regulating filter fans, heat exchangers, cooling devices or for switching signal devices when temperature limit has been exceeded.

Sensor Element	thermostatic bimetal
Contact Type	snap-action contact
Service Life	>100,000 cycles verified
Max. Switching Capacity	10 A resistive / 2 A inductive @ AC 120 V 5 A resistive / 1.6 A inductive @ AC 250 V DC 30 W
Max. Inrush Current	AC 16 A for 10 sec.
Connection	4-pole terminal, clamping torque 0.8 Nm max. solid wire - AWG 14 max. (2.5 mm²) stranded wire - AWG 16 max. (1.5 mm²)
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical
Operating/Storage Temperature	-40 to +176 °F (-40 to +80 °C) -49 to +176 °F (-45 to +80 °C)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Dimensions	1.85 x 2.5 x 1.3" (47 x 63 x 33 mm)
Weight	approx. 14.1 oz. (40 g)
Protection Type	IP20
Approvals	UL File No. E164102 / VDE / EAC



Dimentioned Drawings.

- NC/NO or NO/NO in one unit
- Fixed set points
- Color coded modules
- DIN rail mountable



NC - Open On Rise		NO - Close On Rise		
ran No.	Switch-Off Temperature	Switch-On Temperature	Switch-On Temperature	Switch-Off Temperature
01163.0-00	59 °F / 15 °C	41 °F / 5 °C	122 °F / 50 °C	104 °F / 40 °C
	(± 9 °F / 5 K tolerance)	(± 9 °F / 5 K tolerance)	(± 11 °F / 7 K tolerance)	(± 12.6 °F / 6 K tolerance)
01163.0-01	77 °F / 25 °C	59 °F / 15 °C	140 °F / 60 °C	122 °F / 50 °C
	(± 9 °F / 5 K tolerance)	(± 9 °F / 5 K tolerance)	(± 11 °F / 7 K tolerance)	(± 12.6 °F / 7 K tolerance)
01163.0-02	59 °F / 15 °C	41 °F / 5 °C	95 °F / 35 °C	77 °F / 25 °C
	(± 9 °F / 5 K tolerance)	(± 9 °F / 5 K tolerance)	(± 11 °F / 7 K tolerance)	(± 12.6 °F / 6 K tolerance)
01163.0-03	77 °F / 25 °C	59 °F / 15 °C	122 °F / 50 °C	104 °F / 40 °C
	(± 9 °F / 5 K tolerance)	(± 9 °F / 5 K tolerance)	(± 11 °F / 7 K tolerance)	(± 12.6 °F / 6 K tolerance)
NO - Close On Rise		NO - Close On Rise		
Part No.	Switch-On Temperature	Switch-Off Temperature	Switch-On Temperature	Switch-Off Temperature
01164.0-00	122 °F / 50 °C	104 °F / 40 °C	140 °F / 60 °C	122 °F / 50 °C
	(± 11 °F / 7 K tolerance)	(± 12.6 °F / 6 K tolerance)	(± 11 °F / 7 K tolerance)	(± 12.6 °F / 7 K tolerance)

ZR 011 THERMOSTATS

DUAL THERMOSTAT

The ZR 011 houses two separate thermostats, allowing the independent control of heating and cooling or other equipment.

Thermostat NC (normally closed): Thermostat opens at temperature rise - for regulating heaters or for switching signal devices. Comes with red temperature dial.

Thermostat NO (normally open): Thermostat closes at temperature rise - for regulating filter fans and heat exchangers or for switching signal devices. Comes with blue temperature dial.

Switch Temperature Difference	12.6 °F \pm 7 °F tolerance (7 K \pm 4 K)
Sensor Element	thermostatic bimetal
Contact Type	snap-action contact
Service Life	>100,000 cycles verified
Max. Switching Capacity	NC: 10 A resistive / 2 A inductive @ AC 250 V NO: 5 A resistive / 2 A inductive @ AC 250 V 15 A resistive / 2 A inductive @ AC 120 V DC 30 W (DC 24-72 V)
Max. Inrush Current	AC 16 A for 10 sec.
Connection*	4-pole terminal, clamping torque 0.5 Nm max.: solid wire - AWG 14 max. (2.5 mm ²) stranded wire*- AWG 16 max. (1.5 mm ²)
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical
Dimensions	2.6 x 2.0 x 1.8" (67 x 50 x 46 mm)
Weight	approx. 3.2 oz. (90 g)
Operating/Storage Temperature	-49 to +176 °F (-45 to +80 °C)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type	IP20
Approvals	UL File No. E164102 / CSA / VDE / EAC

*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.



Dimentioned Drawings.

- NC/NO or NO/NO in one unit
- Separate adjustable temperatures
- Color coded temperature dials
- DIN rail mountable



Part No.	Setting Range		Setting F	Range
01172.0-00	NC - open on rise	0 to +60 °C	NO - close on rise	0 to +60 °C
01172.0-01	NC - open on rise	+32 to +140 °F	NO - close on rise	+32 to +140 °F
01175.0-00	NC - open on rise	-10 to +50 °C	NO - close on rise	+20 to +80 °C
01175.0-01	NC - open on rise	+14 to +122 °F	NO - close on rise	+68 to +176 °F
01176.0-00**	NO - close on rise	0 to +60 °C	NO - close on rise	0 to +60 °C
01176.0-01**	NO - close on rise	+32 to +140 °F	NO - close on rise	+32 to +140 °F

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





FZK 011 THERMOSTATS MECHANICAL THERMOSTAT

The FZK 011 mechanical thermostat is used for controlling heating and cooling equipment, filter fans or signal devices where a higher degree of sensing accuracy is required.

An integrated resistor (RF) can be connected to improve the switch temperature difference (see Option note). The thermostat registers the surrounding air and can switch both inductive and resistive loads via snap-action contact.

Switch Temperature Difference	approx. 9 °F (5 K), tolerance -5.4/+3.6 °F (-3/+2 K)*
Sensor Element	thermostatic bimetal
Contact Type	SPDT / change-over contact
Service Life	> 100,000 cycles verified
Min. Switching Capacity	10 mA
Max. Switching Capacity, Nc	10 A resistive / 4 A inductive @ AC 120 V 10 A resistive / 4 A inductive @ AC 250 V DC 30 W
Max. Switching Capacity, No	5 A resistive / 2 A inductive @ AC 120 V 5 A resistive / 2 A inductive @ AC 250 V DC 30W
Max. Inrush Current	AC 16 A for 10 sec.
Connection*	4-pole terminal, clamping torque 0.5 Nm max.: solid/stranded** wire - AWG 14 max. (2.5 mm ²)
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	variable
Dimensions	2.64 x 1.97 x 1.5″ (67 x 50 x 38 mm)
Weight	approx. 2 oz. (60 g)
Operating/Storage Temperature	-49 to +149 °F (-45 to +65 °C)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type	IP20
Approvals	UL File No. E164102 / EAC



Dimentioned Drawings.

- Wide adjustment range
- High switching capacity
- SPDT (change-over) contact
- Very low hysteresis option
- DIN rail mountable



*If the NC 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. **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.

Part No.	Operating Voltage [†]	Setting Range
01170.0-00	AC 230 V	5 to 60 °C
01170.0-01	AC 230 V	40 to 140 °F
01170.9-00	AC 120 V	40 to 140 °F
01170.9-01	AC 120 V	5 to 60 °C

[†]Voltage only needs to be specified if the optional use of the RF resistor is desired.



ETR 011 THERMOSTATS

ELECTRONIC THERMOSTAT

The ETR 011 electronic thermostat is used for controlling heating and cooling equipment, filter fans or signal devices. The thermostat senses the surrounding air temperature and can switch both resistive and inductive loads via an SPDT contact. The integrated LED is lit when the NC is closed (i.e. connected heater is operating).

Switch Temperature Difference	7 °F (4 K) ±1.8 °F (1 K) tolerance at +68 °F (+20 °C)	
Sensor Element	NTC	
Reaction Time	approx. 5 seconds	
Contact Type	SPDT / change-over contact (relay)	
Service Life	>50,000 cycles	
Max. Switching Capacity (Relay Output)	8 A resistive / 1.6 A inductive @ AC 120 V 8 A resistive / 1.6 A inductive @ AC 240 V 100 W @ DC 24 V	
Max. Inrush Current	AC 16 A for 10 sec.	
Connection*	5-pole terminal, clamping torque 0.5 Nm max.: solid/ stranded* wire - AWG 14 max. (2.5 mm²)	
Housing	plastic, UL 94V-0, light grey	
Mounting	clip for 35 mm DIN rail, EN 60715	
Mounting Position	vertical	
Dimensions	2.54 x 1.65 x 1.5″ (64.5 x 42 x 38 mm)	
Weight	approx. 2 oz. (60 g)	
Operating/Storage Temperature	-49 to +176 °F (-45 to +80 °C)	
Operating/Storage Humidity	max. 90 % RH (non-condensing)	
Protection Type	IP20	
Approvals	UL File No. E164102 / VDE / EAC	







Dimentioned Drawings.

- Large setting range
- Compact design
- Small hysteresis
- Optical function display (LED)
- DIN rail mountable



Part No.	Operating Voltage	Setting Range
01131.0-00	AC 230 V	-20 to +60 °C
01131.9-00	AC 120 V	-4 to +140 °F
01175.0-00	NC - open on rise	+20 to +80 °C



ETL 011 THERMOSTATS ELECTRONIC THERMOSTAT

The ETL 011 electronic thermostat is used for controlling heating and cooling equipment, filter fans or signal devices through the Relay DCM 010 or a similar device. The thermostat registers the surrounding air temperature and can switch a signal current via an internal relay with a potential free change-over contact. The LED integrated in the adjustment knob shows the closed status of the contact 1-2. When the temperature rises contact 1-2 opens and the LED turns off. In currentless state (no supply voltage) contact 1-2 opens.

Switch Temperature Difference	7 °F (4 K) ±1.8 °F (1 K) tolerance at +68 °F (+20 °C)
Sensor Element	NTC
Reaction Time	approx. 5 seconds
Contact Type	SPDT / change-over
Service Life	>100,000 cycles (at 10 mW)
Min. Switching Load	DC 10 mW (at 0.1 V, 100 mA or 1 mA, 10 V)
Optical Indicator	LED
Connection*	5-pole terminal, clamping torque 0.5 Nm max.: solid/ stranded* wire - AWG 14 max. (2.5 mm²)
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical
Dimensions	2.54 x 1.65 x 1.5" (64.5 x 42 x 38 mm)
Weight	approx. 2 oz. (60 g)
Operating/Storage Temperature	-40 to +185 °F (-40 to +85 °C)
Operating/Storage Humidity	max. 95 %RH (non-condensing)
Protection Type	IP20
Approvals	UL File No. E164102 / VDE / EAC







Dimentioned Drawings.

- Large setting range
- Compact design
- Small hysteresis
- Optical function display (LED)
- DIN rail mountable



Part No.	Operating Voltage	Setting Range
01131.2-00	DC 12-48 V (min. DC 10 V, max. DC 60 V)	-20 to +60 °C
01131.2-01	DC 12-48 V (min. DC 10 V, max. DC 60 V)	-4 to +140 °F



THERMOSTATS

24 VDC ELECTRONIC THERMOSTAT

FT 011

The ET 011 is an electronic thermostat for regulating high performance DC 24 V equipment. Heating or cooling equipment, as well as signal devices, can be switched via the SPDT (changeover) contact. A relatively small hysteresis sets the ET 011 Thermostat apart from less accurate mechanical thermostats.

Switching Difference	5.4 °F (3 K) ±1.8 °F (1 K) tolerance at +68 °F (+20 °C)
Sensor Element	PTC
Contact Type	SPDT / change-over contact
Service Life	>100,000 cycles
Max. Switching Capacity	16 A @ DC 28 V
Max. Inrush Current	DC 16 A
Connection	5-pole terminal, clamping torque 0.5 Nm max.: solid wire - AWG 14 max. (2.5 mm²) stranded wire* - AWG 16 max. (1.5 mm²)
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical
Dimensions	2.6 x 2.0 x 1.8″ (67 x 50 x 46 mm)
Weight	approx. 2.4 oz. (70 g)
Operating/Storage Temperature	-40 to +140 °F (-40 to +60 °C) -49 to +176 °F (-45 to +80 °C)
Operating/Storage Humidity	max. 90 %RH (non-condensing)
Protection Type	IP20
Approvals	EAC



Dimentioned Drawings.

- 16 Amp DC switching capacity
- Low hysteresis
- Wide adjustment range
- DIN rail mountable



Part No.	Operating Voltage	Setting Range
01190.0-00	DC 24 V (DC 20-28 V)	0 to 60 °C
01190.0-01	DC 24 V (DC 20-28 V)	32 to 140 °F





DCT 011 THERMOSTATS | 20 VDC TO 56 VDC ELECTRONIC THERMOSTAT

The electronic thermostat with integrated switch module is used to control DC powered devices with high capacities in control and switch cabinets. Heaters, coolers, filter fans or signal devices can directly be controlled via an internal electronic circuit. The external sensor can be positioned freely anywhere in the control cabinet for precise temperature measurements. Additionally, this thermostat is available in versions that not only measure temperature via the external sensor, but also the relative humidity.

3 K (±1 K tolerance) at +77 °F (+25 °C), 50 % RH
approx. 5 sec.
cable 2 m with snap in connector (included)
contact maker NO (MOSFET) or contact breaker NC (MOSFET)
> 100,000 cycles
DC 20 to 56 V
LED
6-pole terminal: stranded wire* AWG 16 (1.5mm²); max. AWG 12 (2.5mm²)
plastic, UL 94V-0, grey (bicolor)
clip for 35 mm DIN rail, EN 60715
vertical
3.7 x 2.1 x 1.7" (93 x 53 x 44 mm)
approx. 4.2 oz. (120 g) incl. sensor
-40 to +176 °F (-40 to +80 °C)
max. 90 % RH (non-condensing)
IP20
UL File No. E164102 / VDE / EAC

1.73" (44mm)





Dimentioned Drawings.

• High DC switching capacity

.66" (93mm)

- Adjustable temperature
- Small hysteresis
- Optical operating display (LED)
- Integrated switch module
- Precise measurement via
 an external sensor



Secondary Switching Max. Switching **Primary Switching** Operating Part No. Function Contact (Primary) Capacity Function** Temperature (Relay Output) Setting Range Temp. **Humidity Setting** 01011.0-31 DC 13 A -22 °F to +122 °F 14 to 122 °F Contact maker (NO) 01011.0-32 DC 11 A -22 °F to +140 °F 32 to 140 °F Contact maker (NO) -01011.0-61 DC 13 A -22 °F to +122 °F 14 to 122 °F 65 % RH pre-set Contact breaker (NC) 01011.0-62 DC 11 A -22 °F to +140 °F 32 to 140 °F 65 % RH pre-set Contact breaker (NC)

**Versions with secondary switching function can also register the humidity and therefore offer an additional protection for electronics. Switching difference: 4 % RH (±1 % tolerance) at +77 °F (+25 °C), 50 % RH.



TRT-10A230V-NCF

12/14/2023

THERMOSTAT

NORMALLY CLOSED

TRT-10A230V-NCF thermostats provide a reliable solution for accurate temperature control in protecting sensitive electronic components. These mechanical regulators are used with ventilation or heating products to keep the desired thermal conditions inside the enclosure.

Appliance Class	11
Max Contact Current	15 A
Operating Voltage	12-60 VDC
Rated Current	10 A
Rated Voltage	110-250 VAC
Rated Voltage	60 VDC
IP Protection Degree	IP20
Max Humidity	90 % RH
Operating Temperature	14 to 176 °F
Storage Temperature	-40 to 194 °F
Accuracy	± 3 K
Casing Material	PA66 UL94 V-0
Electrical Connection	Terminal Block
Fixing System	DIN rail
Life Expectancy	100,000 Cycles
RAL Number	7035
Rated Hysteresis	7 K
Sensor Type	Bi-Metal
Setting Range	14 to 176 °F
Setting Resolution	9 °F
Wires Section	0.75-2.5 mm²
Wires Section	18-14 AWG
UL Ambient Temperature	122 °F
UL File Number Recognized Component	E247491











TRT-10A230V-NOF

12/14/2023

THERMOSTAT NORMALLY OPEN

TRT-10A230V-NOF thermostats provide a reliable solution for accurate temperature control in protecting sensitive electronic components. These mechanical regulators are used with ventilation or heating products to keep the desired thermal conditions inside the enclosure.

Appliance Class	П
Max Contact Current	15 A
Operating Voltage	12-60 VDC
Rated Current	10 A
Rated Voltage	110-250 VAC
Rated Voltage	60 VDC
IP Protection Degree	IP20
Max Humidity	90 % RH
Operating Temperature	14 to 176 °F
Storage Temperature	-40 to 194 °F
Accuracy	± 3 K
Casing Material	PA66 UL94 V-0
Electrical Connection	Terminal Block
Fixing System	DIN rail
Life Expectancy	100,000 Cycles
RAL Number	7035
Rated Hysteresis	7 K
Sensor Type	Bi-Metal
Setting Range	14 to 176 °F
Setting Resolution	9 °F
Wires Section	0.75-2.5 mm²
Wires Section	18-14 AWG
UL Ambient Temperature	122 °F
UL File Number Recognized Component	E247491













12/14/2023

HYGROSTAT MECHANICAL CHANGE OVER

Thermal Edge mechanical hygrostat switches on electrical enclosure heating or cooling units when a preset relative humidity (RH) is exceeded. The relative humidity is kept above the dew point and the condensation of water on electrical components and the corrosion of unprotected sheet metal is prevented.

Appliance Class	П
Rated Current	10-5 A
Rated Voltage	120-240 VAC
IP Protection Degree	IP20
Operating Temperature	50 to 104 °F
Storage Temperature	-4 to 122 °F
Accuracy	± 5% RH
Casing Material	PC/ABS UL94 V-0
Electrical Connection	Terminal Block
Fixing System	DIN rail
Life Expectancy	30,000 Cycles
RAL Number	7035
Rated Hysteresis	5% RH
Sensor Type	Polyamide Ribbon
Setting Range	10 to 90% RH
Setting Resolution	5% RH
Wires Section	1-4 mm ²
Wires Section	18-12 AWG
UL File Number Recognized Component	E247491











HTM045 HEATER 45 WATT

Thermal Edge PTC heaters are used for warming up the air inside enclosure, protecting electrical and electronic components from condensation and corrosion. These H series PTC heaters with screwless terminal block are available in two versions: in metal or plastic, with low surface thermal conductivity to keep safe maintenance operations.

Appliance Class	I	6
Frequency	50/60 Hz	
Max Current	1.0 A	
Operating Voltage	99-264 VAC	
Rated Voltage	110-240 VAC/DC	
IP Protection Degree	IP20	Technical drawing mm (in)
Operating Temperature	-22 to 122 °F	138 (5.43)
Storage Temperature	-40 to 158 °F	
Casing Material	Black Anodized Aluminum	
Electrical Connection	Terminal Block	Power-Voltage
Fixing System	DIN rail	80
Heating Power	45 W	50 40 30 30 40 40 40 40 40 40 40 40 40 40 40 40 40
Wires Section	1-2.5 mm²	
Wires Section	20-16 AWG	Votage
UL Ambient Temperature	122 °F	0 12 24 37 49 61
UL File Number Recognized Component	E237844	60 50 Mu 40 30











HVMS250THP-115 HEATER

250 WATT

Thermal Edge PTC heaters are used for warming up the air inside enclosure, protecting electrical and electronic components from condensation and corrosion. These H series PTC heaters with screwless terminal block are available in two versions: in metal or plastic, with low surface thermal conductivity to keep safe maintenance operations.

Appliance Class	I	
Frequency	50/60 Hz	
Max Current	1.9 A	· · · · ·
Operating Voltage	75-125 VAC	
Rated Voltage	115 VAC	a contraction of the second seco
IP Protection Degree	IP20	
Operating Temperature	14 to 104 °F	Technical drawing mm (in)
Storage Temperature	-40 to 158 °F	<u>193 (7.60)</u> <u>35 (1.38) 65 (2.56)</u> <u>61.5 (2.42)</u>
Casing Material	Black Anodized Aluminum	
Electrical Connection	Terminal Block	
Fixing System	DIN rail	Power-Temperature
Heating Power	250 W	0 12 24 37 49 61 73 85 98 110 122 280 240 240 220
Wires Section	1-2.5 mm²	E 160 E 160 120 100 80
Wires Section	20-16 AWG	0 0 0 0 5 10 15 20 25 30 35 40 45 50 Temperature [*C]
UL Ambient Temperature	122 °F	
UL File Number Recognized Component	E237844	



HVMS350THP-115 HEATER

350 WATT

Thermal Edge PTC heaters are used for warming up the air inside enclosure, protecting electrical and electronic components from condensation and corrosion. These H series PTC heaters with screwless terminal block are available in two versions: in metal or plastic, with low surface thermal conductivity to keep safe maintenance operations.

Appliance Class	I	
Frequency	50/60 Hz	
Max Current	1.9 A	
Operating Voltage	75-125 VAC	
Rated Voltage	115 VAC	a
IP Protection Degree	IP20	
Operating Temperature	14 to 104 °F	Technical drawing mm (in)
Storage Temperature	-40 to 158 °F	
Casing Material	Black Anodized Aluminum	
Electrical Connection	Terminal Block	
Fixing System	DIN rail	Power-Temperature
Heating Power	350 W	0 12 24 37 49 61 73 85 98 110 122 450 V=115 Vac / 50 Hz
Wires Section	1-2.5 mm²	300
Wires Section	20-16 AWG	
UL Ambient Temperature	122 °F	
UL File Number Recognized Component	E237844	



MFR 012 HYGROSTATS MECHANICAL HYGROSTAT

The MFR 012 electromechanical hygrostat is designed to control the relative humidity inside enclosures. When connected to an enclosure heater (dehumidifier), it will energize the heater at the humidity set point in order to raise the dew point. This helps prevent damage and malfunction of electronic components caused by condensation and corrosion^{*}. The MFR 012 can also be used to control cooling fans, warning lights or other devices.

Switch Difference	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 2.5mm², clamping torque 0.5Nm max.: rigid wire 2.5mm² (AWG 14) stranded wire** 1.5mm² (AWG 16)
Housing	plastic, UL 94V-0, light grey
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	variable
Dimensions	2.64 x 1.97 x 1.5″
Weight	approx. 2 oz.
Operating/Storage Temperature	+32 to +140 °F (0 to +60 °C) -40 to +140 °F (-40 to +60 °C)
Operating/Storage Humidity	max. 95 %RH (non-condensing)
Protection Type	IP20



Dimentioned Drawings.

- 16 Amp DC switching capacity
- Low hysteresis
- Wide adjustment range
- DIN rail mountable



*The critical relative humidity level for most components is 65%.

Above 65% RH, condensation can form and cause malfunctions of electronic equipment. Long term, this can lead to corrosion and permanent damage of electronic components and systems.

Part No.	Setting Range	Approvals
01220.0-00	35 to 95 %RH	UL File No. E164102, EAC



DCF 010 HYGROSTATS | 20 VDC TO 56 VDC ELECTRONIC HYGROSTAT

The electronic DC hygrostat with integrated switch module is used to control heating and cooling equipment, filter fans or signal devices through the relay. The hygrostat measures the relative humidity and can switch a signal current via an internal relay. The external sensor can be positioned freely anywhere in the control cabinet for precise measurement of the atmospheric humidity. Additionally, this hygrostat is available in versions that not only measure the relative humidity via the external sensor, but also the temperature.

Switching Difference (Humidity)	4 % RH (±1 % tolerance) at +77 °F (+25 °C), 50 % RH
Reaction Time	approx. 5 sec.
External Sensor	cable 2 m with snap in connector (included)
Contact Type	contact maker NO (MOSFET) or contact breaker NC (MOSFET)
Service Life	>100,000 cycles
Operating Voltage	DC 20 to 56 V
Optical Indicator	LED
Connection	6-pole terminal: stranded wire* AWG 16 (1.5mm²); max. AWG 12 (2.5mm²)
Housing	plastic, UL 94V-0, grey (bicolor)
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical
Dimensions	3.7 x 2.1 x 1.7″ (93 x 53 x 44 mm)
Weight	approx. 4.2 oz. (120 g) incl. sensor
Operating/Storage Temp.	-40 to +176 °F (-40 to +80 °C)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type	IP20
Approvals	UL File No. E164102 / VDE / EAC

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





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Dimentioned Drawings.

- High DC switching capacity
- Adjustable humidity
- Small hysteresis
- Optical operating display (LED)
- Integrated switch module
- Precise measurement via an external sensor



Part No.	Max. Switching Capacity (Relay Output)	Operating Temperature	Primary Switching Function Setting Range Temp.	Secondary Switching Function** Humidity Setting	Contact (Primary)
01012.0-20	DC 15 A	-22 °F to +104 °F	40 to 90 % RH	+41 °F (+5 °C) pre-set	Contact maker (NO)
01012.0-21	DC 13 A	-22 °F to +122 °F	40 to 90 % RH	+41 °F (+5 °C) pre-set	Contact maker (NO)
01012.0-22	DC 11 A	-22 °F to +140 °F	40 to 90 % RH	+41 °F (+5 °C) pre-set	Contact maker (NO)

**Versions with secondary switching function can also register the temperature and therefore offer an additional protection for electronics. Switching difference: 3 K (±1 K tolerance) at +77 °F (+25 °C), 50 % RH.





HYGROSTATS

EFR 012

ELECTRONIC HYGROSTAT

The EFR 012 electronic hygrostat senses the relative humidity in an enclosure and turns on a heater at the set point, helping prevent the formation of condensation in the enclosure. The integrated LED is lit when the connected device is in operation.

Switching Difference	5 %RH (± 1 % tolerance) at 77 °F (25 °C) and 50 %RH
Reaction Time	approx. 5 seconds
Contact Type	SPDT / change-over contact (relay)
Service Life	> 50,000 cycles
Max. Switching Capacity (Relay Output)	8 A resistive / 1.6 A inductive @ AC 120 V 8 A resistive / 1.6 A inductive @ AC 240 V 100 W @ DC 24 V
Connection	5-pole terminal, clamping torque 0.5 Nm max.: solid/ stranded* wire - AWG 14 max. (2.5 mm²)
Mounting	clip for 35 mm DIN rail, EN 60715
Casing	plastic, UL 94V-0, light grey
Dimensions	2.54 x 1.65 x 1.5″ (64.5 x 42 x 38 mm)
Weight	approx. 2.3 oz. (65 g)
Fitting Position	vertical
Operating/Storage Temperature	+32 to +140 °F / -4 to +158 °F
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type	IP20

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









Dimentioned Drawings.

- Adjustable & pre-set relative
 humidity setpoints
- Compact design
- High switching capacity
- Optical function display (LED)
- DIN rail mountable



Part No.	Operating Voltage	Setting Range	Approvals
01245.0-00	AC 230 V, 50/60 Hz	40 to 90 %RH	UL File No. E164102 / VDE / EAC
01245.9-00	AC 120 V, 50/60 Hz	40 to 90 %RH	UL File No. E164102 / EAC
01246.0-00	AC 230 V, 50/60 Hz	65 %RH pre-set	UL File No. E164102 / VDE / EAC
01246.0-01	AC 230 V, 50/60 Hz	50 %RH pre-set	UL File No. E164102 / VDE / EAC
01246.9-00	AC 120 V, 50/60 Hz	65 %RH pre-set	UL File No. E164102 / EAC



EFL 012 HYGROSTATS ELECTRONIC HYGROSTAT

The electronic hygrostat is used for controlling heating and cooling equipment, filter fans or signal devices through the Relay DCM 010 or a similar device. The hygrostat registers the surrounding relative humidity and can switch a signal current via an internal relay with a potential free change-over contact. 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.

Switching Difference	5 %RH (± 1 % tolerance) at 77 °F (25 °C) and 50 %RH
Reaction Time	approx. 5 seconds
Contact Type	SPDT / change-over contact (relay)
Service Life	>100,000 cycles (at 10 mW)
Max. Switching Capacity (Relay Output)	0.5 A at DC 48 V
Min. Switching Load	DDC 10 mW (at 0.1 V, 100 mA or 1 mA, 10 V)
Optical Indicator	LED
Connection	5-pole terminal, clamping torque 0.5 Nm max.: solid/ stranded* wire - AWG 14 max. (2.5 mm²)
Mounting	clip for 35 mm DIN rail, EN 60715
Casing	plastic, UL 94V-0, light grey
Dimensions	2.54 x 1.65 x 1.5″ (64.5 x 42 x 38 mm)
Weight	approx. 2.3 oz. (65 g)
Fitting Position	vertical
Operating/Storage Temperature	+32 to +140 °F / -4 to +158 °F
Operating/Storage Humidity	max. 95 % RH (non-condensing)
Protection Type	IP20





1.5" (38mm)



Dimentioned Drawings.

- Large setting range
- Compact design
- Small hysteresis
- Optical function display
- Signal application



Part No.	Operating Voltage	Setting Range	Approvals
01245.2-00	DC 12-48 V (min. DC 10 V, max. DC 60 V)	40 to 90 %RH	UL File No. E164102 / EAC



ETF 012 HYGROTHERM ELECTRONIC HYGROTHERM

The ETF 012 senses the ambient temperature and relative air humidity in an enclosure. Depending on which contact combination is chosen, it then turns on or off a connected device if either the temperature is below or the humidity is above the set point. The integrated LED in each adjustment knob is lit when indicating the active function.

Switching Difference (Temperature)	2 K (±1 K tolerance) at +25 °C (+77 °F), 50 %RH
Switching 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)	10 A resistive / 1.6 A inductive @ AC 240 V 0.6 A @ DC 60 V*
Max. Inrush Current	AC 30 A for 10 sec.
Connection	5-pole terminal, clamping torque 0.5 Nm max.: solid/ stranded** wire - AWG 14 max. (2.5 mm²)
Mounting	clip for 35 mm DIN rail, EN 60715
Casing	plastic, UL 94V-0, light grey
Dimensions	3.0 x 2.4 x 1.7" (77 x 60 x 43 mm)
Weight	approx. 3.5 oz. (100 g)
Fitting Position	vertical
Operating/Storage Temperature	-40 to +140 °F (-40 to +60 °C)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type	IP20
Approvals	UL File No. E164102 / VDE / EAC







Dimentioned Drawings.

- Efficient temperature
 & humidity control
- Wide voltage range
- Operating temperature down to -40 °C
- High switching capacity
- DIN rail mountable



 $*Not \ UL \ confirmed.$

Part No.	Operating Voltage	Setting Range Temperature	Setting Range Humidity
01230.0-00	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	0 to +60 °C	50 to 90 %RH
01230.9-00	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	+32 to +140 °F	50 to 90 %RH
01230.1-00	DC 24-48 V (min. DC 20 V, max. DC 60 V)	0 to +60 °C	50 to 90 %RH





HYGROTHERM

ELECTRONIC HYGROTHERM WITH EXTERNAL SENSOR

The ETF 012 senses the ambient temperature and relative humidity in an enclosure.

Depending on which contact combination is chosen, it then turns on or off a connected device if either the temperature is below or the humidity is above the set point. The integrated LED in each adjustment knob is lit when indicating the active function.

The external sensor can be positioned freely anywhere in the enclosure for precise measurements.

Switching Difference (Temperature)	2 K (±1 K tolerance) at +25 °C (+77 °F), 50 %RH
Switching 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)	10 A resistive / 1.6 A inductive @ AC 240 V 0.6 A @ DC 60 V*
Max. Inrush Current	AC 30 A for 10 sec.
Connection	5-pole terminal, clamping torque 0.5 Nm max.:solid/ stranded** wire - AWG 14 max. (2.5 mm²)
Mounting	clip for 35 mm DIN rail, EN 60715
Casing	plastic, UL 94V-0, light grey
Dimensions	3.0 x 2.4 x 1.7" (77 x 60 x 43 mm)
Weight	approx. 3.5 oz. (100 g)
Fitting Position	vertical
Operating/Storage Temperature	-40 to +140 °F (-40 to +60 °C)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type	IP20
Approvals	UL File No. E164102 / VDE / EAC







Dimentioned Drawings.

- Efficient temperature & humidity control
- Wide voltage range
- Operating temperature down to -40 °C
- High switching capacity
- With external sensor



 $*Not \ UL \ confirmed.$

Part No.	Operating Voltage	Setting Range Temperature	Setting Range Humidity
01231.0-00	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	0 to +60 °C	50 to 90 %RH
01231.9-00	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	+32 to +140 °F	50 to 90 %RH
01231.1-00	DC 24-48 V (min. DC 20 V, max. DC 60 V)	0 to +60 °C	50 to 90 %RH



CSS 014 SMART SENSOR | 24 VDC

The compact Smart Sensor CSS 014 electronically records temperature and humidity and converts the measured data into a standardized analog 4-20 mA or a digital IO-Link signal. The converted value signals can be utilized or further processed by a control or monitoring unit, e.g. a PLC control. The Smart Sensor is suitable for installation inside and outside the enclosure, even in harsh environmental conditions as can be found in the wind power industry: in shielded outdoor areas and exposed to vibrations.

Measuring Signals: Analog (4-20 Ma)/Digital (IO-Link) Digital (IO-Link)	temperature, humidity events, diagnosis, device data
Max. Reaction Time	3 min.
Load Resistance (External)	≤ 500 Ω (4-20 mA only)
Connection	M12 round plug connector, IEC 61076-2-101, 4-pin, A-coded, shielded
Electrical Protection	Reverse-polarity, short circuit, overvoltage protection
Mounting	clip for 35 mm DIN rail, EN 60715 or M5 screws (not included)
Housing	plastic, UL94 V-0, light grey
Dimensions	5.5 x 1.6 x 1.5" (140 x 40 x 38 mm)
Weight	approx. 1.8 oz. (50 g)
Mounting Position	vertical (connection on top)
Storage Temperature	-40 to +185 °F (-40 to +85 °C)
Operating/Storage Humidity	max. 90% RH (non-condensing)
Protection Type*/Protection Class	IP20 (sensor only: IP57) / III (SELV)
Approvals	UL File No. E500143, VDE (acc. to IEC 61010-1/DIN EN 61010-1),

* The PCB (printed circuit board) is coated on both sides with a certified protective lacquer to protect against corrosion and for improvement of the tracking resistance.

EAC



- High accuracy
- Quick connection
 (M12 plug-in connector)
- Large temperature
 and humidity range
- Various application areas
 (IEC 61010-1/DIN EN 61010-1)



Part No.	Interface	Operating Voltage	Power Consumption Max.	Temperature Measuring Range	Humidity Measuring Range	Operating Temperature
01420.2-00	4-20 mA (analog)	DC 24 V (DC 12-30 V)	1.8 W (typically 0.4 W)	-40 to +140 °F (40 to +60 °C) ± 1 K	0 to 100 % RH ± 4%**	-40 to +158 °F (-40 to +70 °C)
01411.2-00	IO-Link (digital, specified acc. to version 1.1)	DC 24 V (DC 18-30 V)	0.3 W	-40 to +176 °F (-40 to +80 °C) ± 0.3 K	0 to 100% RH ± 3%**	-40 to +176 °F (-40 to +80 °C)

**Tolerance within 20 to 80 % RH (please request diagram for tolerances outside this range)



SHC 071 SENSOR HUB | IO-LINK

The IO-Link Sensor Hub SHC 071 records measuring data from up to four external non IO-Link sensors on a process level and transmits data via an IO-Link Master for control and monitoring applications, using options such as an edge computer, cloud based system or PLC. Standard IO-Link sensors are connected to one IO-Link Master port each. By using the Sensor Hub up to four external sensors can be connected, but they only use one IO-Link Master port (see illustrations Connection Comparison). This allows you to attach up to three more IO-Link devices to an IO-Link Master. The Sensor Hub SHC 071 comes with a universal mounting bracket which offers six different DIN rail or screw mounting options (see operating instructions).

Sensor Connection	4 ports with strain relief for up to 4 sensors (not included)
Io-Link Connection	M12 round plug connector, IEC 61076-2-101, 4-pin, A-coded
Electrical Protection	Reverse-polarity, short circuit, overvoltage protection
Mounting	clip for 35 mm DIN rail, EN 60715 and screw mounting (M5)
Casing	plastic according to UL94 V-0, light grey
Dimensions	107 x 35 x 79 mm (87 mm with universal mounting bracket)
Housing	plastic, UL94 V-0, light grey
Dimensions	5.5 x 1.6 x 1.5" (140 x 40 x 38 mm)
Weight	арргох. 110 g
Fitting Position	variable
Operating/Storage Temperature	-40 to +80 °C (-40 to +176 °F) / -40 to +85 °C (-40 to +185 °F)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Operating Altitude	≤ 4,000 m above sea level
Protection Type/Protection Class	IP40 / III (SELV)
Certificates	CB No. DE1-63389 In conformity with IEC 61010-1 Evaluated in accordance with UL and CSA standards

CE KOHS OIO-Link



Dimentioned Drawings.

- Digital IO-Link Interface
- Small dimensions
- Easy DIN rail and screw mounting
- M12 plug-in connector
- Quick connection of sensors
 via connectors
- 4 sensor types
- For 1 to 4 digital sensors

Part No.	Interface	Operating Voltage	Power Consumption Max.
07100.2-00	IO-Link (digital, specified acc. to version 1.1)	DC 24 V (DC 18-30 V)	0.5 W



LED 021 LED 022 ENCLOSURE LIGHTS

The LED 021/022 Varioline is a powerful and compact LED lamp for use in enclosures. Its LED tube emits more than 1,000/1,700 Lm at only 11 W/16 W power consumption, thereby illuminating even very large enclosures in their full depth and height. The glare-free, 360° rotatable LED tube uses Mid-power LEDs with a service life of 60,000 h. The emitted daylight color of 6,500 K provides safety for the user by a natural and non-fading color reproduction.

Power Consumption	max. 11 W / 16 W
Operating Voltage	AC 100 - 240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)
Luminous Flux	1,080 Lm/1,730 Lm
Lamp Туре	LED, angle of radiation 120°, light color: daylight, color temperature: 6.500 K
Service Life	60,000 h at +20 °C (+68 °F)
Connection	2-pole connector with snap lock, AC: max. 2,5 A / AC 240 V, color: white
Mounting*	magnets or M5 screws (not included), torque 2 Nm max.
Housing	plastic, translucent
Dimensions	see drawings
Weight	approx. 7 oz./10.6 oz. (200 g/ 300 g)
Operating/Storage Temperature	-40 to +104 °F / -40 to +185 °F
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type/Class	IP20 / II (double insulated)
Approvals	UL File No. E234324 / VDE / EAC

*Mounting options: The lamps are available with magnet fixing for easy positioning in any steel cabinet or enclosure. A classic is the LED 021/022 with M5 screws (not included). With a total rotation angle of 360° it provides perfect illumination. NOTE: The lamp must not be used for household lighting.





Dimentioned Drawings. A) LED 021 (Size 1): L1 = 15.8 in, L2 = 14.8 in LED 022 (Size 2): L1 = 23.6 in, L2 = 22.6 in B) View of magnet and screw fixing

- High luminous flux
- Integrated power unit
- Durable and maintenance-free LED technology
- Daisy chain
- On/off switch or movement sensor
- Magnet or screw fixing



Size 1 L1 = 15.8″ (400 mm) Magnet Fixing	Size 1 L1 = 15.8″ (400 mm) Screw Fixing	Size 2 L1 = 23.6″ (600 mm) Magnet Fixing	Size 2 L1 = 23.6" (600 mm) Screw Fixing	Switch
02100.0-30	02100.0-00	02200.0-30	02200.0-00	on/off switch
02110.0-30	02110.0-00	02210.0-30	02210.0-00	PIR motion sensor**
02120.0-30	02120.0-00	02220.0-30	02220.0-00	without switching option

**approx. 5 min. fixed switch-on duration



LED 121 | LED 122 ENCLOSURE LIGHTS | LAMP WITH SOCKET

12/14/2023

The LED 121/122 Varioline is a powerful and compact LED light with integrated receptacle for use in enclosures. Featuring socket standards of many European countries as well as the US and Australia, it allows for the power connection of laptops and diagnostic devices. Its LED tube emits more than 1,000/1,700 Lm thereby illuminating even very large enclosures in their full depth and height. The glare-free, 120° rotatable light tube uses Mid-power LEDs with a service life of 60,000 hcolor of 6,500 K provides safety for the user by a natural and non-fading color reproduction.

Power Consumption	max. 10 W / 15 W
Operating Voltage	AC 220 - 240 V, 50/60 Hz (min. AC 200 V, max. AC 265 V) AC 120 V, 50/60 Hz (min. AC 110 V, max. AC 130 V)
Luminous Flux	1,080 Lm/1,730 Lm
Lamp Туре	LED, angle of radiation 120°, light color: daylight, color temperature: 6.500 K
Service Life	60,000 h at +20 °C (+68 °F)
Connection	3-pole connector with snap lock, AC: max. 16 A / AC 240 V, color: white
Mounting*	magnets or M5 screws (not included), torque 2 Nm max.
Housing	plastic, translucent
Dimensions	see drawings
Weight	approx. 10.6 oz./14.1 oz. (300 g/ 400 g)
Operating/Storage Temperature	-40 to +104 °F / -40 to +185 °F
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type/Class	IP20 / II (double insulated)
Approvals	UL File No. E234324 / EAC

*Mounting options: The lamps are available with magnet fixing for easy positioning in any steel cabinet or enclosure. A classic is the LED 121/122 with M5 screws (not included). With a total rotation angle of 120° it provides perfect illumination. Note: The lamp must not be used for household lighting.



Dimentioned Drawings.

A) LED 121 (Size 1): L1 = 19.7 in, L2 = 18.7 in
LED 122 (Size 2): L1 = 27.6 in, L2 = 26.6 in
B) View of magnet and screw fixing

- High luminous flux
- Integrated receptacle
- Durable and maintenance-free
 LED technology
- Integrated power unit
- Daisy chain
- On/off switch, movement sensor or connection for external door switch



Size 1 L1 = 19.7″ (500 mm) Magnet Fixing	Size 1 L1 = 19.7″ (500 mm) Screw Fixing	Size 2 L1 = 27.6″ (700 mm) Magnet Fixing	Size 2 L1 = 27.6″ (700 mm) Screw Fixing	Operating Voltage	Nominal Current Of Socket
LED 121/122 on/off switch					
12104.0-30	12104.0-00	12204.0-30	12204.0-00	AC 120 V, 50/60 Hz	15.0 A
LED 121/122 PIR Motion	LED 121/122 PIR Motion Sensor (features approx. 5 min fixed switch-on duration)				
12114.0-30	12114.0-00	12214.0-30	12214.0-00	AC 120 V, 50/60 Hz	15.0 A
LED 121/122 with connection for external door switch					
12124.0-30	12124.0-00	12224.0-30	12224.0-00	AC 120 V, 50/60 Hz	15.0 A
LED 121/122 without sw	ritching option				
12134.0-30	12134.0-00	12234.0-30	12234.0-00	AC 120 V, 50/60 Hz	15.0 A



LED 025 ENCLOSURE LIGHTS

12/14/2023

The LED 025 light series is suitable for all types of panels and enclosures, especially where space is at a premium. These lights have a very long service life due to the use of LED technology. They are available with powerful non-slip rubberized magnets allowing them to be easily positioned in any steel enclosure. Screw and clip mounting are also available as options. The power output allows up to 10 lights to be connected to each other (daisy chain) with both the input and output plugs snap-locking into place.

Power Consumption	max. 11 W / 16 W
Luminosity	400 Lm at 120° (1,200 Lm at 360° or equiv. 95W light bulb)
Lamp Туре	LED, 120° angle of radiation light color - daylight, color temperature - 6,000 to 7,000 K
Service Life	60,000 hrs. at 68 °F (20 °C)
Connection	2-pole plug with snap lock AC: max. 2.5 A / AC 240 V, white connector DC: max. 2.5 A / DC 60 V, blue connector
Mounting	magnet, M5 screws (not included), or clip (M6 screws) torque 2 Nm max.
Housing	plastic, translucent
Dimensions	see drawings
Operating/Storage Temperature	-40 to +104 °F / -40 to +185 °F
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type/Class	IP20 / II (double insulated)
Approvals	UL File No. E164102 / EAC



Dimentioned Drawings.

A) On/off switch light w/magnet or screw mount.B) On/off switch light w/clip mount.

- Energy saving LED technology
- Wide voltage range
- Integrated power unit
- Magnet, screw or clip mount
- Wide variety of connections
- On/off switch or motion sensor



Mounting options: The lights are available with magnet mount for easy positioning in any steel cabinet or enclosure. Other options are the LED 025 with screw mount, and specifically designed clip holders for clip mount of the LED 025. These can be positioned anywhere in the cabinet by simply screwing the holders

to the cabinet wall. The light is snapped into the clip holders and can be turned in both directions. With a total rotation angle of 180° it provides perfect illumination within the cabinet or enclosure. NOTE: The lights are not approved for household lighting.

Part No. Magnet Mount	Part No. Screw Mount	Part No. Clip Mount	Operating Voltage	Switch Type	Weight
Light Kits With Input Co	nnector Included				
02540.0-00-0003	02540.0-01-0003	02540.0-03-0003	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	on/off switch	4.8 oz.
02540.1-00-0003	02540.1-01-0003	02540.1-03-0003	DC 24-48 V (min. DC 20 V, max. DC 60 V)	on/off switch	4.8 oz.
02541.0-00-0003	02541.0-01-0003	02541.0-03-0003	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	PIR motion sensor*	5.0 oz.
02541.1-00-0003	02541.1-01-0003	02541.1-03-0003	DC 24-48 V (min. DC 20 V, max. DC 60 V)	PIR motion sensor*	5.0 oz.
Light Only					
02540.0-00	02540.0-01	02540.0-03	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	on/off switch	4.8 oz.
02540.1-00	02540.1-01	02540.1-03	DC 24-48 V (min. DC 20 V, max. DC 60 V)	on/off switch	4.8 oz.
02541.0-00	02541.0-01	02541.0-03	AC 100-240 V, 50/60 Hz (min. AC 90 V, max. AC 265 V)	PIR motion sensor*	5.0 oz.
02541.1-00	02541.1-01	02541.1-03	DC 24-48 V (min. DC 20 V, max. DC 60 V)	PIR motion sensor*	5.0 oz.

*Passive Infrared (PIR) motion sensor is factory pre-set to turn the light off 5 minutes after all motion ceases



LED 025 ENCLOSURE LIGHTS | ECOLINE

12/14/2023

The LED 025 light series is suitable for all types of panels and enclosures, especially where space is at a premium. These lights have a very long service life due to the use of LED technology. They are available with powerful non-slip rubberized magnets allowing them to be easily positioned in any steel enclosure. Screw and clip mounting are also available as options. The power output allows up to 10 lights to be connected to each other (daisy chain) with both the input and output plugs snap-locking into place.

Power Consumption	max. 5 W (~ 75 W incandescent bulb)
Luminosity	400 Lm at 120° (1,200 Lm at 360° or equiv. 95W light bulb)
Lamp Туре	LED, 120° angle of radiation light color - daylight, color temperature - 6,000 to 7,000 K
Service Life	60,000 hrs. at 68 °F (20 °C)
Connection	2-pole dual cage clamp for solid wire AWG 14 (2.5 mm²), and stranded wire (wire end ferrule) AWG 16 (1.5 mm²)
Mounting	magnet, M5 screws (not included), or clip (M6 screws) torque 2 Nm max.
Housing	plastic, translucent
Dimensions	see drawings
Weight	approx. 7 oz. (200 g)
Operating/Storage Temperature	-40 to +104 °F / -40 to +185 °F
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type/Class	IP20 / II (double insulated)
Approvals	UL File No. E234324 VDE (REG. #E788)* / EAC / CCC

*VDE Certificate of Conformity (REG.-Nr. E788). Mounting options: The lights are available with magnet mount for easy positioning in any steel cabinet or enclosure. Other options are the LED 025 with screw mount, and specifically designed clip holders for clip mount of the LED 025. These can be positioned anywhere in the cabinet by simply screwing the holders to the cabinet wall. The light is snapped into the clip holders and can be turned in both directions. With a total rotation angle of 180° it provides perfect illumination within the cabinet or enclosure. NOTE: The lights are not approved for household lighting.



Dimentioned Drawings.

A) On/off switch light w/magnet or screw mount.

B) On/off switch light w/clip mount.

C) LED 025 top view.

- Energy saving LED technology
- Wide voltage range
- Integrated power unit
- Magnet, screw or clip mount
- Wide variety of connections
- Dual cage clamp for quick wiring



Part No. Magnet Mount	Part No. Screw Mount	Part No. Clip Mount	Operating Voltage	Switch Type
02540.3-10	02540.3-11	02540.3-13	AC 100-240 V, 50/60Hz (min. AC 90 V, max. AC 265 V) DC 90-110 V (min. DC 80 V, max. DC 125 V)	on/off switch
02541.3-10	02541.3-11	02541.3-13	AC 100-240 V, 50/60Hz (min. AC 90 V, max. AC 265 V) DC 90-110 V (min. DC 80 V, max. DC 125 V)	PIR motion sensor**
02542.3-10	02542.3-11	02542.3-13	AC 100-240 V, 50/60Hz (min. AC 90 V, max. AC 265 V) DC 90-110 V (min. DC 80 V, max. DC 125 V)	N/A
02540.1-10	02540.1-11	02540.1-13	DC 24-48 V (min. DC 20 V, max. DC 60 V)	on/off switch
02541.1-10	02541.1-11	02541.1-13	DC 24-48 V (min. DC 20 V, max. DC 60 V)	PIR motion sensor**
02542.1-10	02542.1-11	02542.1-13	DC 24-48 V (min. DC 20 V, max. DC 60 V)	N/A

**Passive Infrared (PIR) motion sensor is factory pre-set to turn the light off 5 minutes after all motion ceases

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The SL 025 light was designed to fit in tight spaces in enclosures. It features an optional integrated receptacle so that electrical devices (e.g. power tools) can be easily plugged in when needed. The standard light can be screw mounted in a variety of positions, or the light can be fitted with an available magnet mount.

Power Consumption	11 W	
Luminosity	510 Lm (~ 45 W incandescent bulb)	
Lamp Туре	compact fluorescent, 2G7 base, electronic ballast	
Service Life	10,000 hrs.	
Switch (For Light Only)	on/off switch	
Connection	3-pole terminal AWG 16 max. (2.5 mm ²) with strain relief only (cable not included), clamping torque 0.8 Nm max.	
Mounting	M5 screws (not included), 11.8" (300 mm) hole distance or optional attached magnet	
Housing	plastic, UL 94V-0, light grey	
Operating/Storage Temperature	-4 to +122 °F / -49 to +158 °F	
Operating/Storage Humidity	max. 90 % RH (non-condensing)	
Protection Type	IP20	
Dimensions	13.6 x 3.6 x 1.6"	
Weight	approx. 0.9 lbs. (400 g), 1.3 lbs (600 g) with magnet	



Dimentioned Drawings.

- Compact design
- Electronic ballast
- Optional integrated receptacle
- Screw or magnet mount
- Long-life energy saving lamp
- On/off switch



Part No. with On/Off Switch	Model	Operating Voltage	Protection Class	Approvals
02527.0-00	without magnet	AC 230 V, 50/60 Hz	ll (double insulated)	UL File No. E234324 / VDE / EAC
02527.1-00	with magnet	AC 230 V, 50/60 Hz	ll (double insulated)	UL File No. E234324 / VDE / EAC
02527.1-10	with magnet	AC 120 V, 50/60 Hz	ll (double insulated)	UL File No. E234324 / EAC



with glass doors.

SL 025

ENCLOSURE LIGHTS | MOTION DETECTOR

The SL 025 light was designed to fit in tight spaces in enclosures. It features an optional integrated receptacle so that electrical devices (e.g. power tools) can be easily plugged in when needed. The standard light can be screw mounted in a variety of positions, or the light can be fitted with an available magnet mount. The motion sensor version was designed to eliminate the need for a door switch.

Power Consumption	11 W	
Luminosity	510 Lm (~ 45 W incandescent bulb)	
Lamp Туре	compact fluorescent, 2G7 base, electronic ballast	
Service Life	10,000 hrs.	
Switch (For Light Only)	PIR motion sensor*	
Connection	3-pole terminal AWG 16 max. (2.5 mm ²) with strain relief only (cable not included), clamping torque 0.8 Nm max.	
Mounting	M5 screws (not included), 11.8" (300 mm) hole distance or optional attached magnet	
Housing	plastic, UL 94V-0, light grey	
Operating/Storage Temperature	-4 to +122 °F / -49 to +158 °F	
Operating/Storage Humidity	max. 90 % RH (non-condensing)	
Protection Type	IP20	
Dimensions	13.6 x 3.6 x 1.6″	
Weight	approx. 0.9 lbs. (400 g), 1.3 lbs (600 g) with magnet	

* The Passive Infrared (PIR) motion sensor detects the motion of the enclosure

pre-set to turn the light off 6 minutes after all motion ceases. The motion sensor does not detect movement through glass, allowing for installation in enclosures

door being opened and automatically turns on the light. The sensor is factory



Dimentioned Drawings.

- Compact design
- Electronic ballast
- Optional integrated receptacle
- Screw or magnet mount
- Long-life energy saving lamp
- On/off switch



Part No. with Motion Sensor	Model	Operating Voltage	Protection Class	Approvals
02527.0-04	without magnet	AC 230 V, 50/60 Hz	ll (double insulated)	UL File No. E234324 / VDE / EAC
02527.1-12	with magnet	AC 120 V, 50/60 Hz	ll (double insulated)	UL File No. E234324 / EAC





12/14/2023

SWITCH MODULE | 20 VDC TO 56 VDC

The DCM 010 is used to control DC powered devices with high capacities in control and switch cabinets. It is controlled via an external potential-free contact (thermostat or hygrostat), which is connected between terminal 3 and 4. It must be ensured that the external contact is suitable to switch the required signal current without any problems.

Contact Type	NO - normally open (MOSFET)
Service Life	> 100,000 cycles
Operating Voltage	DC 20 to 56 V
Control Contact - Signal Current	3 mA at DC 20 V / 4.5 mA at DC 24 V 14 mA at DC 48 V / 17 mA at DC 56 V
Connection	6-pole terminal: stranded wire* AWG 16 (1.5 mm²); max. AWG 12 (2.5 mm²)
Housing	plastic, UL 94V-0, grey (bicolor)
Mounting	clip for 35 mm DIN rail, EN 60715
Mounting Position	vertical
Dimensions	3.7 x 2.1 x 1.7″ (93 x 53 x 44 mm)
Weight	approx. 2.3 oz. (65 g)
Operating/Storage Humidity	max. 90 % RH (non-condensing)
Protection Type	IP20
Approvals	UL File No. E164102 / VDE / EAC

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





Dimentioned Drawings.

- High DC switching capacity
- Variety of applications
- Wide DC voltage range
- Simple connection

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Part No.	Max. Switching Capacity (Relay Output)	Operating Temperature
01010.0-00	DC 15 A	-40 °F to +104 °F (-30 °C to +40 °C)
01010.0-10	DC 13 A	-22 °F to +122 °F (-30 °C to +50 °C)
01010.0-20	DC 11 A	-22 °F to +140 °F (-30 °C to +60 °C)

All information subject to change without notice.