



Enclosure climate control

Temperature and humidity control of electrical enclosures

Filter fans and air vents (exhaust filters)



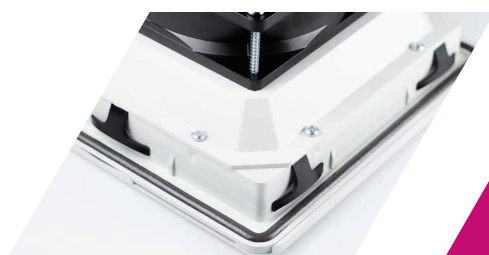
High-performance axial fans, with built-in thermal protection, provide the required airflow.



Push-in terminals provide reliable contact, without the need for tools.



Sliding system for quick filter replacement



Special mounting clips ensure quick installation without the need for tools.



Disassembly system, from the front of the case, provides access to the fan from outside.



Replacement filters available in all 5 sizes

Filter fans

Application

EF series filter fans and vents are used to ensure optimal climatic conditions in electrical enclosures. The use of a filter fan in combination with a filter vent (exhaust filter) is a reliable way to reduce the temperature in an enclosure and reduce the possibility of dust and other particles entering the enclosure in order to prevent overheating of installed equipment.

Features

- Wide range of airflows
- Tool-free installation
- Built-in thermal protection of the fan motor
- Quick connection with push-in terminals
- Direction of airflow into the enclosure
- 5 different sizes

Technical data

Voltage	230V AC (50/60Hz)
IP protection	IP54 (IP51 for EF-325-900-230V) / I
Filtration class	ISO coarse 55% / ISO coarse 30% (for EF-325-900-230V) acc. ISO 16890 G3 / G2 (for EF-325-900-230V) acc. EN 779
Filter material	Synthetic fiber
Fan bearing type	Ball bearing
Fan motor protection	Thermal / Impedance (for EF-107-22-230V)
Connection	Push-in/ cable (for EF-107-22-230V)
Cable cross section	0,75-2,5mm ²
Operating temperature range	-25°C to +60°C for: EF-325-457-230V -30°C to +55°C for: EF-107-22-230V, EF-250-230-230V, EF-325-315-230V -10°C to +55°C for: EF-150-67-230V, EF-204-110-230V, EF-250-122-230V, EF-325-680-230V, EF-325-900-230V
Housing material	PC/ABS UL94 V-0
Color	RAL 7035

Filter fans EF-...-230V

Type	Code No.	Description	Max. air flow (m ³ /h)	Air flow with filter(*) (m ³ /h)	Nominal Current [mA]	Power (W)	Noise level (dB)	kg	pcs
EF-107-22-230V	001344010	Filter fan 22m ³ /h	22	15	78	12	37	0,65	1/16
EF-150-67-230V	001344011	Filter fan 67m ³ /h	67	43	130	18	40	0,90	1/20
EF-204-110-230V	001344012	Filter fan 110m ³ /h	110	84	126	19	40	1,15	1/20
EF-250-122-230V	001344013	Filter fan 122m ³ /h	122	108	126	19	40	1,55	1/10
EF-250-230-230V	001344014	Filter fan 230m ³ /h	230	159	140	32	50	1,80	1/10
EF-325-315-230V	001344015	Filter fan 315m ³ /h	315	264	270	45	58	2,80	1/4
EF-325-457-230V	001344016	Filter fan 457m ³ /h	457	325	343	92	60	3,65	1/4
EF-325-680-230V	001344017	Filter fan 680m ³ /h	680	420	530	120	72	4,75	1/4
EF-325-900-230V	001344018	Filter fan 900m ³ /h	900	630	530	120	72	4,70	1/4

* In pair with filter vent of the same size as filter fan
Example: 15m³/h for the set:
EF-107-22-230V + EF-107E



EF-107...



EF-150...



EF-204...



EF-250...



EF-325...

EF series filter vents (exhaust filters)

Features

- Tool-free installation with mounting clips
- Fast and easy replacement of filters
- 5 dimensions
- Self-extinguishing termoplastic



EF-107E



EF-150E



EF-204E



EF-250E



EF-325E



EF-...M

Technical data

IP protection	IP54
Filtration class	ISO coarse 55% acc. ISO 16890 G3 acc. EN 779
Color	RAL 7035
Operating temperature range	-30°C to +60°C
Housing material	PC/ABS UL94 V-0
Filter material	Synthetic fiber

Filter vents

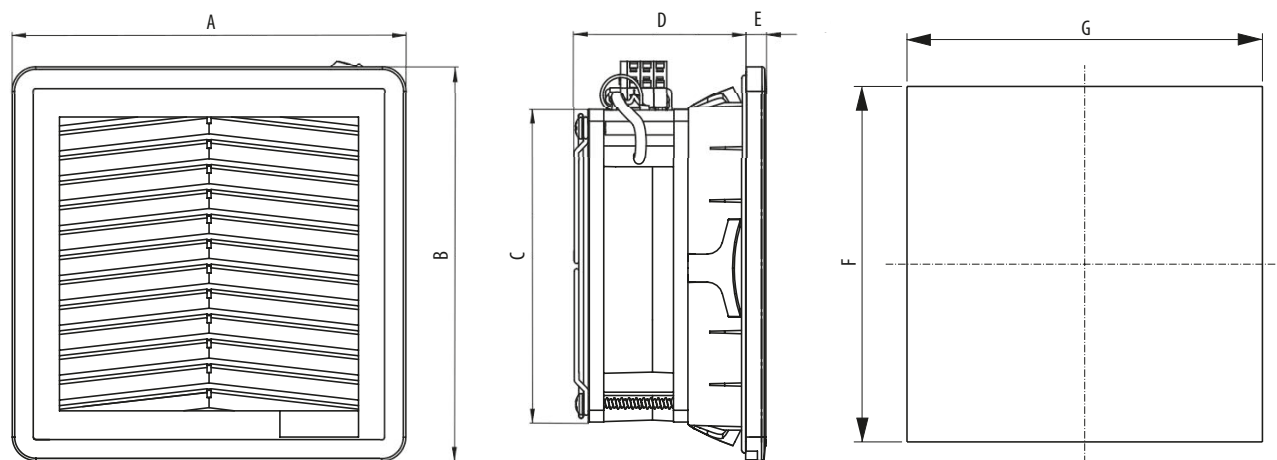
Type	Code No.	Description	kg	(pcs)
EF-107E	001344030	Vent with filter 107x107	0,15	1/48
EF-150E	001344031	Vent with filter 150x150	0,20	1/30
EF-204E	001344032	Vent with filter 204x204	0,40	1/22
EF-250E	001344033	Vent with filter 250x250	0,60	1/18
EF-325E	001344034	Vent with filter 325x325	1,00	1/16

Dimensions and mounting details on page 5.

Replacement filters EF-...M

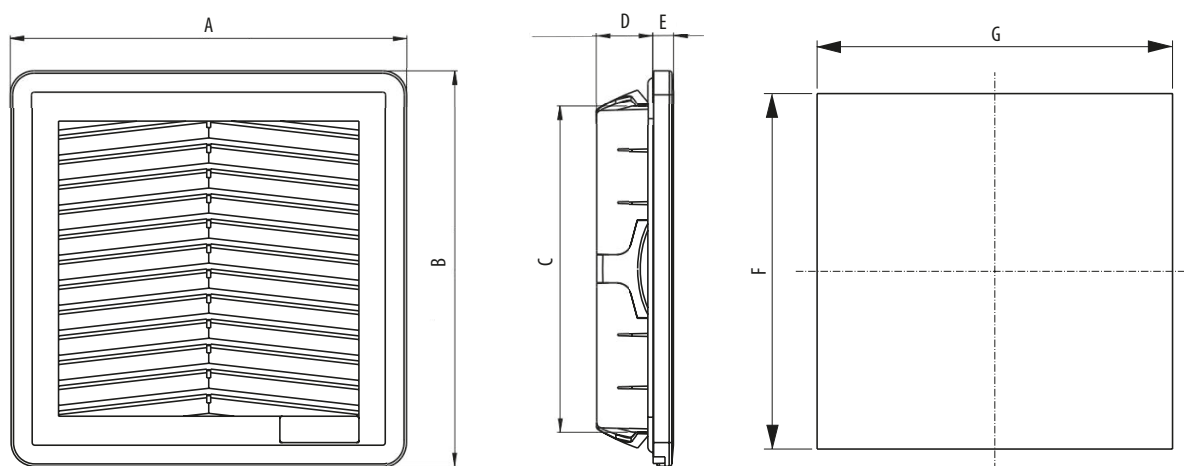
Type	Code No.	Description	For use with	kg	(pcs)
EF-107M	001344050	Filter 107x107 (1 code=6 items)	EF-107E, EF-107-...-230V	0,10	1
EF-150M	001344051	Filter 150x150 (1 code=6 items)	EF-150E, EF-150-...-230V	0,10	1
EF-204M	001344052	Filter 204x204 (1 code=6 items)	EF-204E, EF-204-...-230V	0,20	1
EF-250M	001344053	Filter 250x250 (1 code=6 items)	EF-250E, EF-250-...-230V	0,30	1
EF-325M	001344054	Filter 325x325 (1 code=6 items)	EF-325E, EF-325-...-230V	0,50	1

Dimensions and mounting details



Filter fans EF-...-230V

Type/Size (mm)	A	B	C	D	E	F	G
EF-107-22-230V	106,5	106,5	92,0	73,0	7,0	92,5	92,5
EF-150-67-230V	150,0	150,0	119,0	66,0	8,0	124,0	124,0
EF-204-110-230V	204,0	204,0	119,0	87,5	8,0	177,0	177,0
EF-250-122-230V	250,0	250,0	119,0	103,0	9,0	223,0	223,0
EF-250-230-230V	250,0	250,0	172,0	116,0	9,0	223,0	223,0
EF-325-315-230V	325,0	325,0	172,0	154,0	9,5	291,0	291,0
EF-325-457-230V	325,0	325,0	218,0	151,0	9,5	291,0	291,0
EF-325-680-230V	325,0	325,0	280,0	149,0	9,5	291,0	291,0
EF-325-900-230V	325,0	325,0	280,0	149,0	9,5	291,0	291,0



Filter vents

Type/Size (mm)	A	B	C	D	E	F	G
EF-107E	106,5	106,5	91,5	16,5	7,0	92,0	92,0
EF-150E	150,0	150,0	124,0	22,0	8,0	124,0	124,0
EF-204E	204,0	204,0	176,0	22,0	8,0	177,0	177,0
EF-250E	250,0	250,0	223,0	25,0	9,0	223,0	223,0
EF-325E	325,0	325,0	291,0	25,0	9,5	291,0	291,0

El. heaters **EF-HTE** and heaters with fan **EF-HFE**



Aluminium housing ensures efficient heat distribution.



Push-in terminals provide reliable contact, without the need for tools.



Metal cage for protection against touching the fan



Axial fan with integrated thermal protection (EF-HFE).



Spring latch provides secure mounting on TH35 din rail.



PTC heating element for self-regulation (current depending on temperature of heater).

El. heaters EF-HTE

Application

The EF-HTE series heaters are used to prevent condensation and to maintain a safe temperature inside the el. enclosure. Specially designed housing provides even distribution of warm air to protect equipment installed in el. enclosure from the harmful effects of condensation and low temperatures.

Features

- Wide range of supply voltage
- Self regulating PTC element with temperature limiter
- Quick connection with push-in terminals
- Snap on mounting system for TH35 DIN rail
- Compact housing

Technical data

Supply voltage	110-240V AC/DC
IP protection	IP20
Operating temperature range	-30°C to +50°C
Connection	Push-in terminals
Cable cross section	1-2,5mm ²
Orientation(mounting position)	Vertical at bottom of enclosure
Mounting	TH35 DIN rail
Housing material	Aluminum
Color	Black
Heating element	Self regulating PTC element with temp. limit

Heaters EF-HTE

Type	Code No.	Descr.	Power (W)	Current (A)	Dimensions (mm)						kg	pcs
					A	B	C	D	E	F		
EF-HTE45	001344070	Grzałka 45W	45	1,0	138,0	40,0	35,0	87,4	81,8	61,5	0,60	1/18
EF-HTE60	001344071	Grzałka 60W	60	1,7	138,0	40,0	35,0	87,4	81,8	61,5	0,47	1/18
EF-HTE80	001344072	Grzałka 80W	80	1,7	188,0	65,0	35,0	87,4	81,8	61,5	0,80	1/15
EF-HTE100	001344073	Grzałka 100W	100	2,6	188,0	65,0	35,0	87,4	81,8	61,5	0,80	1/15
EF-HTE150	001344074	Grzałka 150W	150	6,5	238,0	90,0	35,0	87,4	81,8	61,5	0,95	1/11



EF-HTE45

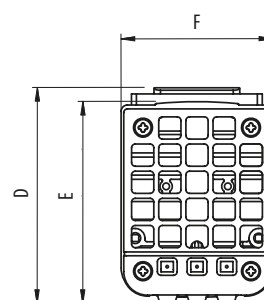
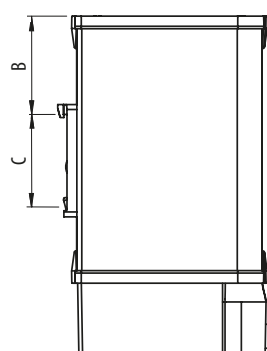
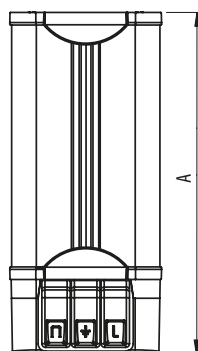


EF-HTE100



EF-HTE150

Dimensions



Heaters with fan EF-HFE

Application

Heaters EF-HFE with built-in axial fan are used to prevent condensation inside the el. enclosure in order to protect the installed equipment. The built-in fan ensures forced circulation of warm air and provides even temperature distribution inside the enclosure.

Features

- Efficient axial fan
- Self regulating PTC element with temperature limiter
- Quick connection with push-in terminals
- Snap on mounting system for TH35 DIN rail



EF-HFE250



EF-HFE350

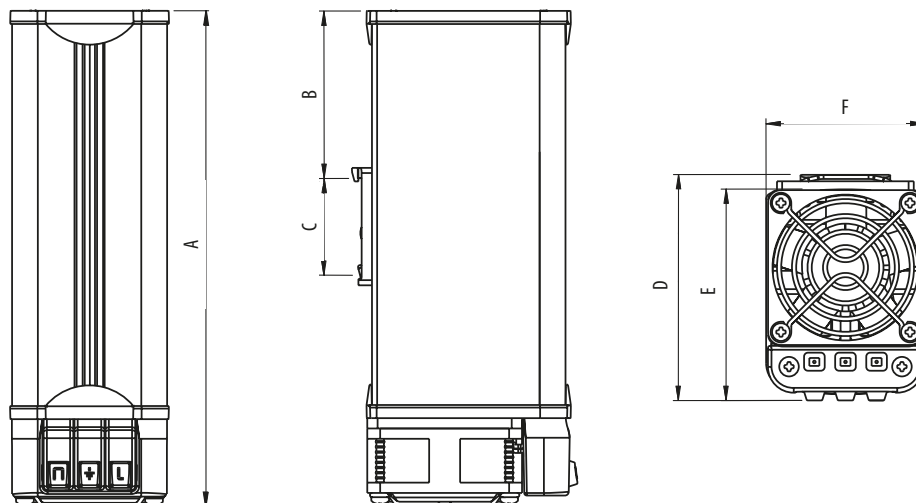
Technical data

Supply voltage	230V AC
IP protection	IP20
Operating temperature range	-10°C to +40°C
Connection	Push-in terminals
Cable cross section	1-2,5mm ²
Orientation(mounting position)	Vertical at bottom of enclosure
Mounting	TH35 DIN rail
Material	Aluminum
Color	Black
Heating element	Self regulating PTC element with temp. limit

Heaters with fan EF-HFE

Type	Code No.	Description	Power (W)	Dimensions (mm)						kg	(pcs)
				A	B	C	D	E	F		
EF-HFE250	001344075	Grzałka z wentylatorem 250W	250	193,0	65,0	35,0	87,4	81,8	61,5	0,90	1/15
EF-HFE350	001344076	Grzałka z wentylatorem 350W	350	243,0	90,0	35,0	87,4	81,8	61,5	1,05	1/11

Dimensions



Thermostats EF-TER

Application

Thermostats EF-TER series are used for control of heaters and fans in order to provide optimum climatic conditions inside el. enclosure to ensure proper use and functioning of installed equipment.

Single thermostats

Single thermostat is equipped with 1 NO or 1 NC control contact. Depending on operation, for ventilation and cooling NO is used, for heating NC is used.

Features

- 1xNO(cooling) or 1xNC(heating) options are available
- Wide temperature setting range
- High current rating of output contacts (NO or NC)
- Can be adjusted by hand or with flat screwdriver
- Mounting on TH35/15/32 DIN rails
- Small size

Technical data

Supply voltage	110-250V AC / 60V DC
Rated nominal/maximum current rating	10A/15A
IP protection	IP20
Operating temperature range	-10°C to +80°C
Setting resolution	5°C
Accuracy	±3K
Hysteresis	7K
Senzor type	Bimetal
Connection	Screw terminals
Cable cross section	0,75-2,5mm ²
Mounting	TH35/15/32 DIN rails
Housing material	PA66 UL94 V-0
Color	RAL 7035



EF-TER-NC

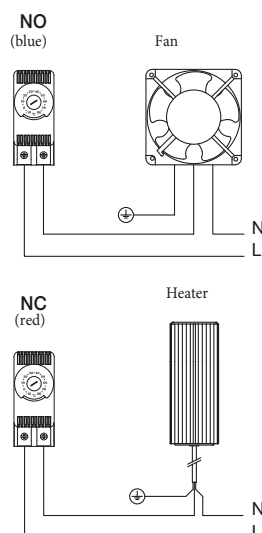


EF-TER-NO

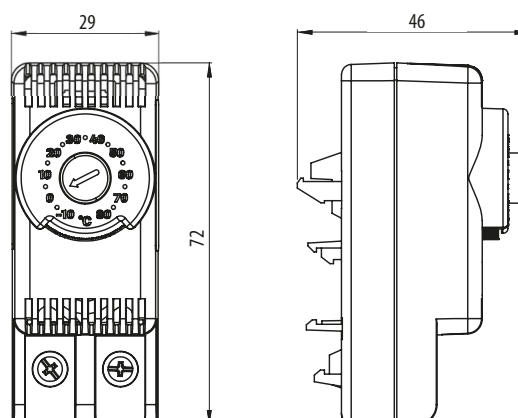
Thermostats EF-TER

Type	Code No.	Description	kg	(pcs)
EF-TER-NC	001344000	Thermostat-10÷80°C, 1NC	0,07	1/25
EF-TER-NO	001344001	Thermostat-10÷80°C, 1NO	0,07	1/25

El. scheme



Dimensions



Double thermostat EF-TER2

Application

Double thermostats have 2 control contacts, 1 NO and 1 NC. The same thermostat can be used for cooling with ventilation (NO) and heating (NC).

Features

- Built in 2 control contacts 1NO and 1NC
- Independent adjustment of both contacts
- Wide temperature setting range
- Mounting on TH35 DIN rail
- Can be adjusted by hand or with flat screwdriver
- Small size



EF-TER2-NCNO

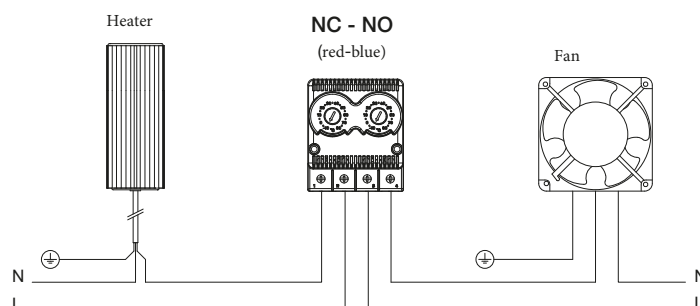
Technical data

Supply voltage	110-250V AC / 60V DC
Rated nominal/maximum current rating	10A/15
IP protection	IP20
Operating temperature range	-10°C to +80°C
Setting resolution	5°C
Accuracy	±3K
Hysteresis	7K
Senzor type	Bimetal
Connection	Screw terminals
Cable cross section	0,75-2,5mm
Mounting	TH35 DIN rail
Housing material	PC/ABS
Color	RAL 7035

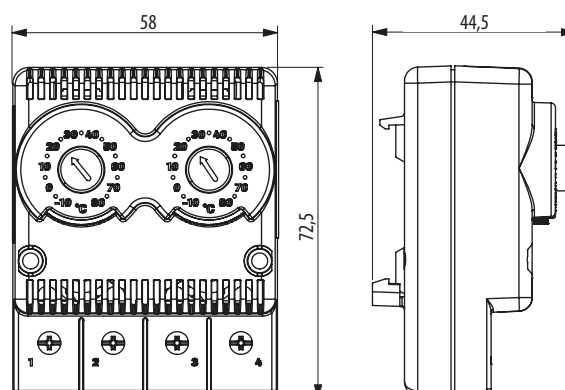
Thermostat EF-TER2

Type	Code No.	Description	kg	(pcs)
EF-TER2-NCNO	001344002	Thermostat -10÷80 °C, 1NO+1NC	0,15	1/9

El. scheme



Dimensions



Hygrostat EF-HGR

Application

Device controls the humidity level inside el. enclosure, it activates ventilation and heating devices when the humidity level is above the set point. It prevents the formation of condensation on equipment installed inside the el. enclosure.

Features

- Adjustable relative humidity
- Can be set manually or with a screwdriver
- Wide setting range
- Built-in changeover contact
- Mounting on TH35 DIN rail
- Small size

Technical data

Supply voltage	120-240V AC
Rated nominal current	5A
Contact type	1CO
IP protection	IP20
Operating temperature range	+10°C to +40°C
Setting range	10% to 90% RH
Setting resolution	5% RH
Accuracy	±5% RH
Hysteresis	5% RH
Connection	Screw terminals
Cable cross section	1,5 - 4 mm ²
Mounting	Szyna TH35

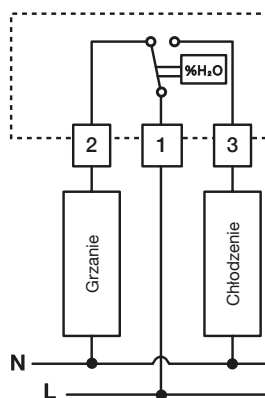


EF-HGR

Hygrostat EF-HGR

Type	Code No.	Description	kg	(pcs)
EF-HGR	001344003	Hygrostat 10-90% RH, 1CO	0,20	1/9

El. scheme



Dimensions

