

Data sheet

Fan speed controller

Type Saginomiya XGE



Fan speed controller XGE stabilizes condensing pressure by changing condenser's fan speed. The controller reduces fan noise and saves energy in low ambient conditions.

Widespread usage in refrigeration and air conditioning units.

Extensive performance testing under different conditions and strict quality control procedures ensure trouble free operation for many years. Compact size, reduced weight and high degree of protection means that it can be mounted directly on refrigeration lines. Panel mounting also possible.

Easy adjusting made by the turn of a setting screw situated on the top surface. Specially designed heat dissipation radiator ensures no overheating and extended lifetime.

XGE-EC version for EC fan motors.

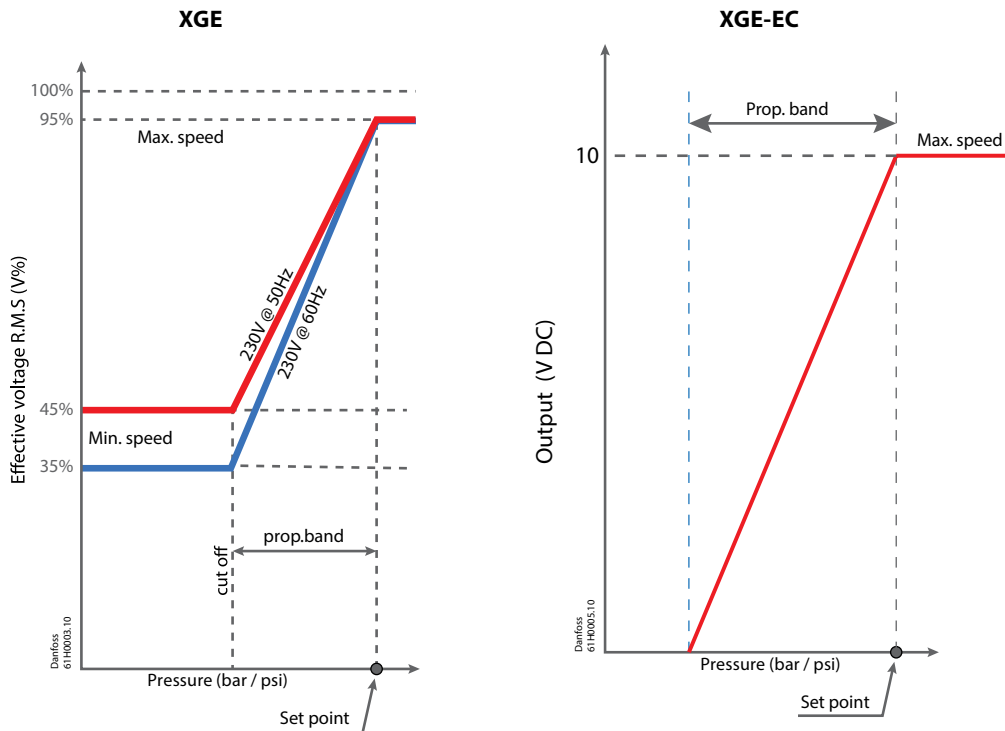
Features

- Wide regulating range
- Compact design
- Male or female pressure connection
- Easy setting and adjusting
- Simple and easy electrical connection
- Cut off type or Minimum speed type
- Fitted with an electro-magnetic suppression filter

Approvals

CE in accordance to EMC directives, UL

Function



Fan speed controller keeps the condensing pressure at a steady level by regulating the speed of the AC/EC fan motors. When pressure is declining the controller decreases the output voltage changing the speed of AC/EC fan motor. The proportional band is a non-adjustable pressure difference between max. and min. pressure where the regulation occurs.

For min. pressure the controller can either operate with min. speed or completely cuts off the output voltage, depending on the type of the controller. XGE saves energy and reduces noise by lowering the fan speed or cutting it off.

Application example

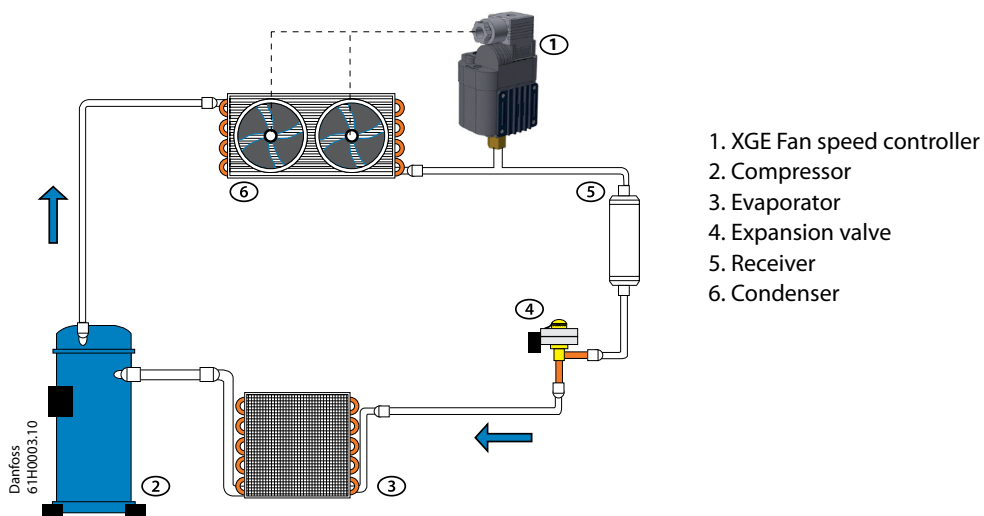


Fig. Typical refrigeration system using XGE fan speed controller

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Technical data

XGE Performance (EN 60770)

Max. current	3A*)
Min. current	0.2A
Enclosure	IP65
Max. working pressure	47 bar / 681 psi
Supply frequency	50 / 60 Hz
Operating ambient temp.	-20 – 55 °C / -4 – 131 °F
Fluid temperature	-20 – 70 °C / -4 – 158 °F
Power supply	200 – 240 V AC
Pressure connection	7/16-20UNF female (with depressor pin) and male
Max. voltage output	95% of supply voltage for 50 Hz
Cut off / Min. speed	45% of supply voltage for 50 Hz
	35% of supply voltage for 60 Hz

*) NOTE: XGE can also be used for 4A rated fans provided the ambient temperature does not exceed 40 °C / 104 °F. Please contact Danfoss regarding the maximum ambient temperature limits at ratings between 3A and 4A

XGE-EC

Input voltage	10 V DC
Output	0 to 10 V DC
Rated current	1 mA
Enclosure	IP65
Max. working pressure	47 bar / 681 psi
Ambient temperature	-20 – 55 °C / -4 – 131 °F
Fluid temperature	-20 – 70 °C / -4 – 158 °F
Pressure connection	7/16 - 20UNF female flare with depressor pin

Ordering

XGE

SI Units

Catalogue number	Refrigerant	Factory setting [bar]	Adjusting range [bar]	Proportional band [bar]	Operational range [bar]	Mode	Pressure connection	Code number ¹⁾
XGE-2C	R22, R134a, R404A, R407A,	8	8 – 18	4.5	3.5 – 18	Cut-off	Female	061H3144
XGE-4C	R407C, R407F, R448A, R449A,	19	10 – 25	6	4 – 25	Cut-off	Female	061H3140
XGE-4CB	R450A, R452A, R513A	19	10 – 25	6	4 – 25	Cut-off	male	061H3142
XGE-6C	R410A*)	28	22 – 39	7	15 – 39	Cut-off	Female	061H3160
XGE-6CB	R410A*)	28	22 – 39	7	15 – 39	Cut-off	male	061H3162
XGE-4M	R22, R134a, R404A, R407A, R407C, R407F,	19	10 – 25	6	4 – 25	Min. speed	Female	061H3240
XGE-4MB	R448A, R449A, R450A, R452A, R513A	19	10 – 25	6	4 – 25	Min. speed	male	061H3242
XGE-6M	R410A*)	28	22 – 39	7	15 – 39	Min. speed	Female	061H3260

¹⁾ Code numbers available in Multipack. Please contact Danfoss for code numbers available in Industrial pack.

*) In addition to the standard refrigerants.

XGE

US Units

Catalogue number	Refrigerant	Factory setting [psi]	Adjusting range [psi]	Proportional band [psi]	Operational range [psi]	Mode	Pressure connection	Code number ¹⁾
XGE-2C	R22, R134a, R404A, R407A,	116	116 – 261	65	51 – 261	Cut-off	Female	061H3144
XGE-4C	R407C, R407F, R448A, R449A,	276	145 – 362	87	58 – 362	Cut-off	Female	061H3140
XGE-4CB	R450A, R452A, R513A	276	145 – 362	87	58 – 362	Cut-off	male	061H3142
XGE-6C	R410A*)	406	319 – 566	101	217 – 566	Cut-off	Female	061H3160
XGE-6CB	R410A*)	406	319 – 566	101	217 – 566	Cut-off	male	061H3162
XGE-4M	R22, R134a, R404A, R407A, R407C, R407F,	276	145 – 362	87	58 – 362	Min. speed	Female	061H3240
XGE-4MB	R448A, R449A, R450A, R452A, R513A	276	145 – 362	87	58 – 362	Min. speed	male	061H3242
XGE-6M	R410A*)	406	319 – 566	101	217 – 566	Min. speed	Female	061H3260

¹⁾ Code numbers available in Multipack. Please contact Danfoss for code numbers available in Industrial pack.

*) In addition to the standard refrigerants.

Ordering

XGE-EC

SI Units

Catalogue number	Refrigerant	Factory setting [bar]	Adjusting range [bar]	Proportional band [bar]	Operational range [bar]	Pressure connection	Code number ¹⁾
XGE-2S-E	R22, R134a, R404A, R407A, R407C, R407F, R448A, R449A,	8	8 – 18	4.5	3.5 – 18	Female	061H3245
XGE-4S-E	R450A, R452A, R513A	19	10 – 25	6	4 – 25	Female	061H3246
XGE-6S-E	R410A [*])	28	22 – 39	7	15 – 39	Female	061H3247

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^{*}) In addition to the standard refrigerants.

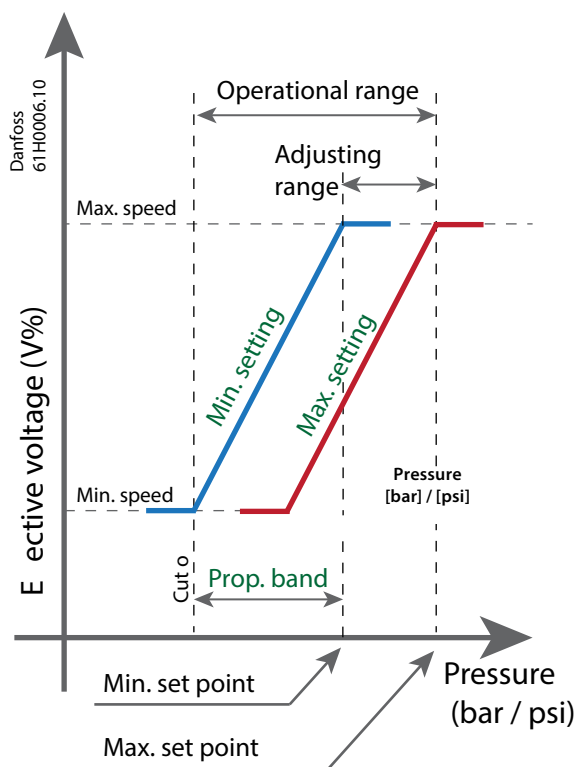
XGE-EC

US Units

Catalogue number	Refrigerant	Factory setting [psi]	Adjusting range [psi]	Proportional band [psi]	Operational range [psi]	Pressure connection	Code number ¹⁾
XGE-2S-E	R22, R134a, R404A, R407A, R407C, R407F, R448A, R449A,	72	116 – 261	65	51 – 261	Female	061H3245
XGE-4S-E	R450A, R452A, R513A	276	145 – 362	87	58 – 362	Female	061H3246
XGE-6S-E	R410A [*])	406	319 – 566	101	217 – 566	Female	061H3247

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^{*}) In addition to the standard refrigerants.



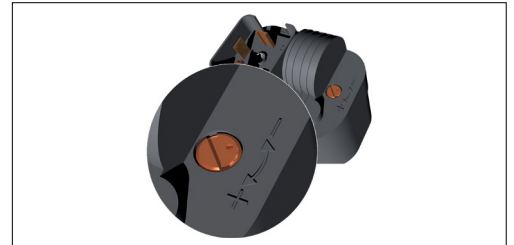
Setting

The easily accessible adjusting screw is situated on the top surface of XGE. The direction to turn the screw for decrease or increase in the setting pressure is indicated by arrow markings next to the adjusting screw.

Every turn of the adjusting screw corresponds to a specified change in the setting value. A punch hole on the adjusting screw helps keep track of the number of turns made.

XGE	Series	360° = 1 turn
	XGE-2	approx. 0.8bar / 11.6 psi
	XGE-4	approx. 1.5 bar / 22 psi
	XGE-6	approx. 2.5 bar / 36 psi

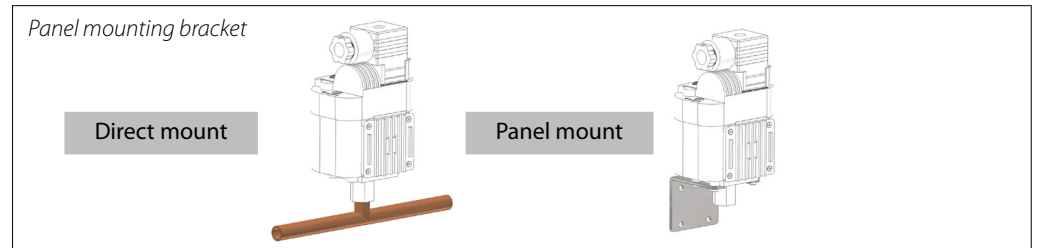
XGE-EC	Series	360° = 1 turn
	XGE-2SE	approx. 0.8bar / 11.6 psi
	XGE-4SE	approx. 1.5 bar / 22 psi
	XGE-6SE	approx. 2.5 bar / 36 psi



Installation

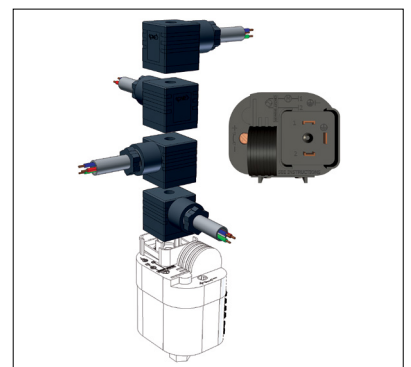
The XGE is designed to be directly mounted onto the refrigeration line making the most of free space in a unit. In cases where space is even more limited, XGE can be fixed onto a simple bracket (supplied as an accessory) and screwed to a panel.

Code number	Catalogue number
061H3102	XGE-AE01



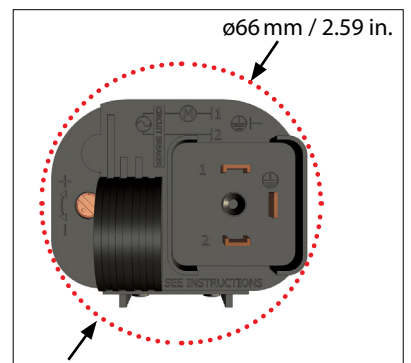
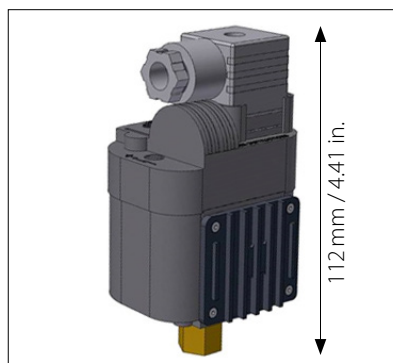
Wiring and electrical connection

Electrical connection of XGE to the fan motor is simple and easy. With the use of a square "quick connect" plug, the connection is possible in 4 different directions, allowing many different machine configurations to accommodate XGE, depending on the position of the fan motor and orientation needed for the electrical cable. For wiring, a simple diagram is embossed onto the XGE surface and also indicated on the plug.



Dimensions and weight

- Horizontal space: diameter of 66 mm / 2.59 in.
- Height: 90 mm / 3.54 in. (112 mm / 4.41 in. with plug fitted)
- Weight: 180 g / 6.35 oz



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