Data sheet

Fan speed controller
Type Saginomiya RGE

Fan speed controller RGE stabilizes condensing pressure by changing condenser's fan speed.

Widespread usage in refrigeration and air conditioning units which are operated throughout the entire year.
Reliable sensing mechanism using bellows.
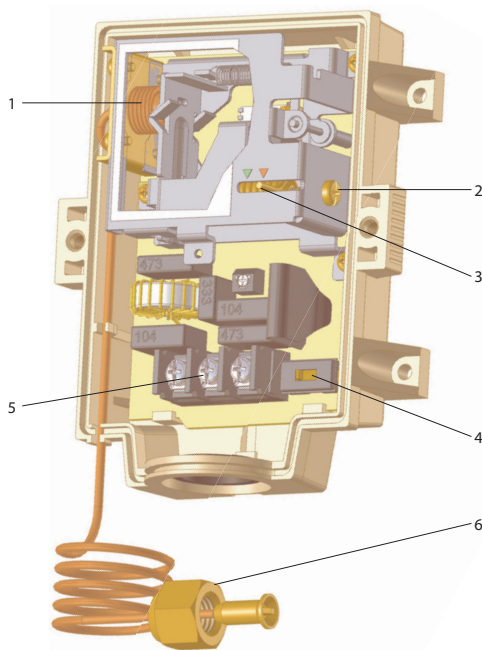Suitable for single phase and 3-phase fan motors.

Features	• Wide regulating range	• Minimum speed and cut -off working modes
	• Easy setting and adjusting	• Weather-proof enclosure (IP54)
	• Simple and easy electrical connection	
	• Multiple fans control	

Approvals   CE in accordance to EMC and LVD directives, UL (only selected models)

Function

1. Adjusting screw
2. Bellows
3. Range setting pointer
   (dual marking 11 and 19bar)
4. Change over switch
5. Terminal board
6. 1/4" flare with depression pin
   (7/16-20 UNF)

Setting point is increased by turning the range adjusting screw clockwise. It is decreased by turning the screw counter clockwise. Adjustment should be within the range indicated for the setting pointer.

Cut off: Fan motor stops when the pressure decreases below the value Pmin.

Min. Speed: Fan motor operates at the Minimum Speed when the pressure decreases below the value Pmin.

F.V.S = Full Voltage Set Point (pressure setting for maximum speed)
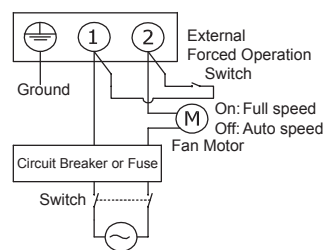E.P.B = Effective Proportional Band
P_{min} = (F.V.S – E.P.B)

The RGE controls the speed of the condenser fan in refrigeration and air conditioning units that work all year long.

It keeps the condensing pressure at a steady level by changing the speed of the fan according to the required condensing pressure.
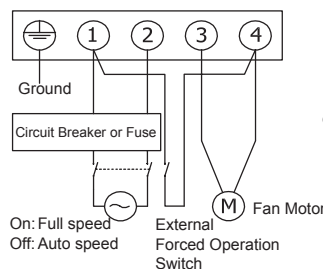
Technical data
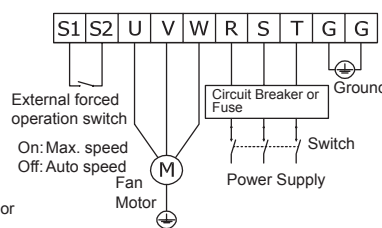
3A single-phase type

- 2 terminals
- External forced operation switch

4A, 6A, 8A single-phase type

- 4 terminals
- External forced operation switch

Three-phase type

- 8 terminals
- External forced operation switch

On - fan is forced to operate at Maximum speed regardless of the pressure.
Off - fan operates according to the RGE function, with speed varying according to pressure.

For single-phase type, if an external forced operation switch is required, then the switch and

connecting cables (not supplied) should have current rating higher than the fan motor rating. For example, a 4A switch is recommended for the 3A RGE model.
For three-phase type, use a forced operation switch with non-voltage contact signal.
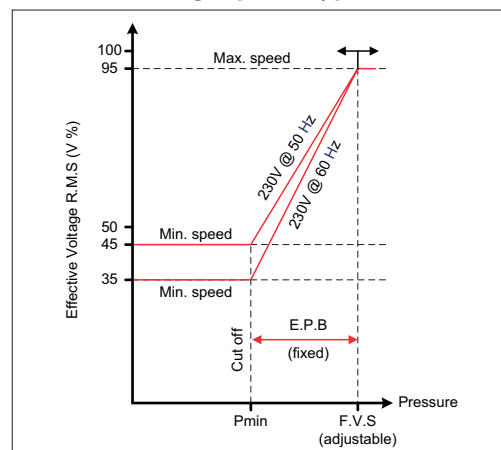
The operating characteristics may vary according to voltage, frequency and fan motor characteristics

Single-phase type

Three-phase type
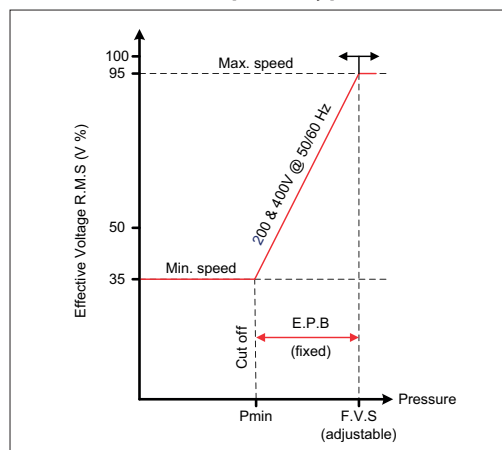
Application example

The pressure connection of the RGE can be made either before or after the condenser providing more installation options and flexibility.
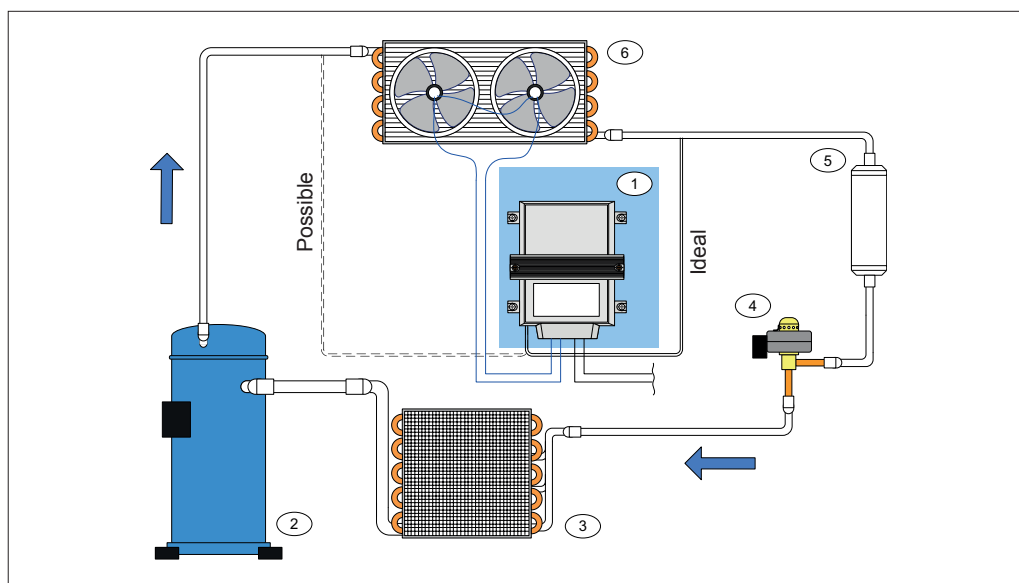
1. RGE Fan Speed Controller
2. Compressor
3. Evaporator
4. Expansion valve
5. Receiver
6. Condenser

Fig. Typical refrigeration system using RGE fan speed controller

Technical data

Single-phase versions 3-8 A
For R22, R134a, R404A, R407A, R407C, R407F, R410A*), R448A, R449A, R452A, R513A, R450A

Type	Factory set	Adjusting range	Proportional band	Operational range	Electrical motor rating	Power supply	Ambient temp.	Code no
	[bar]	[bar]	[bar]	[bar]	[A]		[°C]	
RGE-Z1L4-7DS	19	8 – 28	6	2 – 28	0.2 – 3	200 – 240 V 50/60 Hz	-20 – 55	**061H3045**
RGE-Z1L6-7DS	32	16 – 39	9	7 – 39	0.2 – 3	200 – 240 V 50/60 Hz	-20 – 55	**061H3048**
RGE-Z1N4-7DS	19	8 – 28	4	4 – 28	0.2 – 4	200 – 240 V 50/60 Hz	-20 – 55	**061H3005**
RGE-Z1N6-7DS	32	16 – 39	8	8 – 39	0.2 – 4	200 – 240 V 50/60 Hz	-20 – 55	**061H3021**
RGE-Z1P4-7DS	19	8 – 28	4	4 – 28	0.2 – 6	200 – 240 V 50/60 Hz	-20 – 55	**061H3008**
RGE-Z1P6-7DS	32	16 – 39	8	8 – 39	0.2 – 6	200 – 240 V 50/60 Hz	-20 – 55	**061H3022**
RGE-Z1Q4-7DS	19	8 – 28	4	4 – 28	0.2 – 8	200 – 240 V 50/60 Hz	-20 – 55	**061H3009**
RGE-Z1Q6-7DS	32	16 – 39	8	8 – 39	0.2 – 8	200 – 240 V 50/60 Hz	-20 – 55	**061H3023**

Single-phase version: cut-off or minimum speed function selectable with changeover switch at approx. 45% of the maximum effective output for 50Hz and 35 % for 60Hz.
*) for RGE-Z1L6-7DS, RGE-Z1N6-7DS, RGE-Z1P6-7DS, RGE-Z1Q6-7DS

Three-phase versions 5-7 A
For R22, R134a, R404A, R407A, R407C, R407F, R410A*), R448A, R449A, R452A, R513A, R450A

Type	Factory set	Adjusting range	Proportional band	Operational range	Electrical motor rating	Power supply	Ambient temp.	Code no
	[bar]	[bar]	[bar]	[bar]	[A]		[°C]	
RGE-Z3R4-7DS	16	8 – 28	4	8 – 28	0.2 – 5	200 – 240 V 50/60 Hz	-20 – 50	**061H3003**
RGE-X3R4-7DS	16	8 – 28	4	4 – 28	0.2 – 5	380 – 415 V 50/60 Hz	-15 – 50	**061H3006**
RGE-X3R6-7DS	32	16 – 39	8	8 – 39	0.2 – 5	380 – 415 V 50/60 Hz	-15 – 50	**061H3028**
RGE-Z3T4-7DS	16	8 – 28	6	2 – 28	0.2 – 7	200 – 240 V 50/60 Hz	-20 – 50	**061H3050**

Three-phase version: cut-off or minimum speed function selectable with changeover switch at approx. 35% of the maximum effective output.
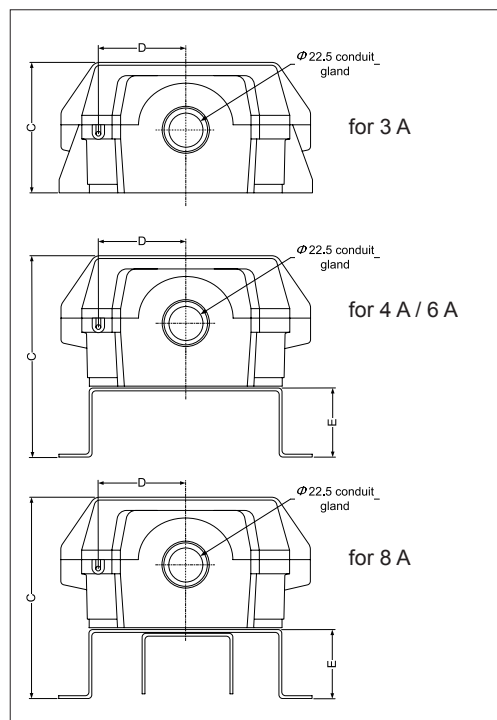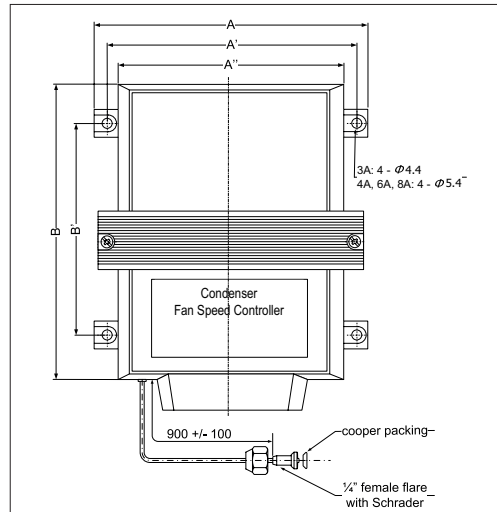*) for RGE-X3R6-7DS
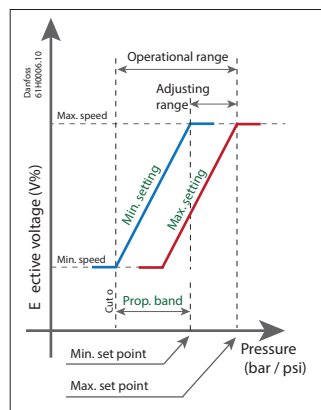
All cased models of RGE are weather-proof (IP54 protection rating) and are suitable for exterior installation.
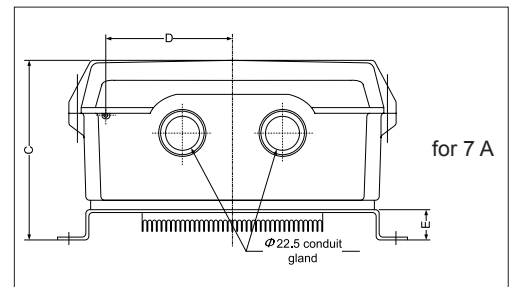For all types max. working pressure is 47 bar.
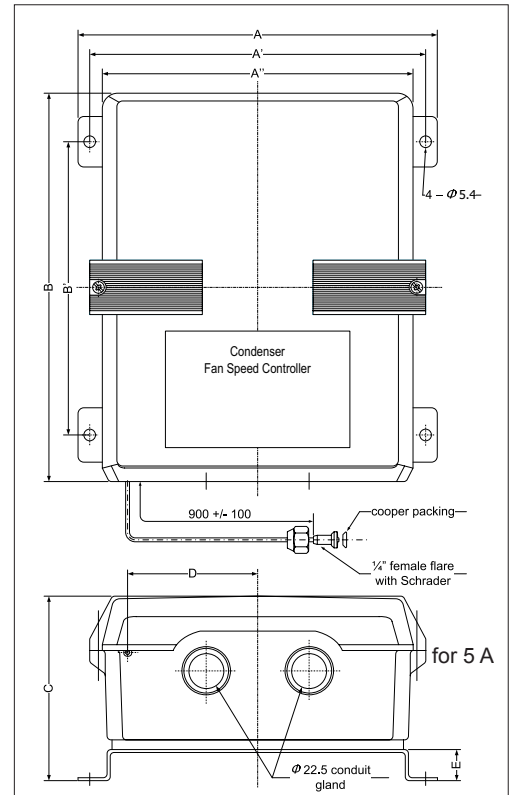
Dimensions

Single-phase versions

3A: 4 - Φ4.4
4A, 6A, 8A: 4 - Φ5.4

Condenser
Fan Speed Controller

900 +/- 100

cooper packing

¼" female flare
with Schrader

Φ22.5 conduit
gland

for 3 A

Φ22.5 conduit
gland

for 4 A / 6 A

Φ22.5 conduit
gland

for 8 A

Three-phase versions

4 - Φ5.4

Condenser
Fan Speed Controller

900 +/- 100

cooper packing

¼" female flare
with Schrader

for 5 A

Φ22.5 conduit
gland

for 7 A

Φ22.5 conduit
gland

Dimensions	Single-phase version				Three-phase version	
[mm]	3 A	4 A	6 A	8 A	5 A	7 A
A	104	105	105	105	185	185
A'	95	95	95	95	175	175
A''	85	85	85	85	160	160
B	125	150	150	150	200	200
B'	75	100	100	100	130	130
C	55	58	76	76	98	98
D	36	36	36	36	67	67
E	–	7	25	25	16	16