


FSY/FSM Series electronic fan speed controller

Electronic speed controllers FSY / FSM control the speed of fan motors depending on pressure.

Features

- Adjustable pressure for cut-off
- High Voltage Triac (800 Volts)
- Integrated protection circuit against voltage peaks
- Compact design
- Easy mounting and adjustment
- Easy retrofit in existing systems
- No additional gasket required (completely molded into plug)
- Multi-position plug with EMC filter cable for flexible installation
-  per 14/30/EU (together with FSF cable)
- UL file E183816
- Other pressure connection upon request (minimum order volume 100 pieces)



FSY-43S

Selection table

Type	Part no.	Pressure range * (bar)	Factory-setting * (bar)	Factory setting * Bar	Max. operating pressure PS (bar)	Test pressure PT (bar)	Pressure connection
Fan speed controllers with cut-off mode							
FSY-41S	0715533	4.0...12.5	8.0	27	30	30	7/16"-20 UNF female
FSY-42S	0715534	9.2...21.2	15.0	32	36	36	
FSY-43S	0715537	12.4...28.4	21.8	43	48	50	
Fan speed controllers with min. Speed mode							
FSM-41S	0715520	4.0...2.5	8.0	27	30	30	7/16"-20 UNF female
FSM-42S	0715521	9.2...21.2	15.0	32	36	36	
FSM-43S	0715522	12.4...28.4	21.8	43	48	50	

Note: *) Pressure at which fan is switched off (FSY) or at which fan is running with minimum speed (FSM)

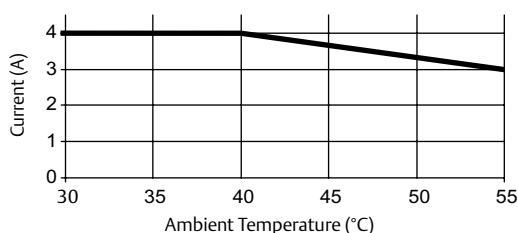
Cable assemblies with plug and EMC filter

Type	Part no.	Temperature range (°C)	Cable length (m)
FSF-N15	804640	Temperature range: -50...+80°C	Cable length 1.5 m
FSF-N30	804641		Cable length 3.0 m
FSF-N60	804642		Cable length 6.0 m
Seal ring pack	803780	Copper gaskets 100 pcs	

Technical data

Supply voltage	230VAC, +15%, -20%, 50/60 Hz
Nominal current (See diagram below)	0.1 ... 4 (3) A
Starting current	Max. 8 Amps/5 Sec.
Medium compatibility	HFC, HCFC, HFO/HFO Blends (Not Released for Use with Inflammable Refrigerants)
Protection class according to iec529 /en 60529	IP 65 (with Fitted Connectors FSF-xxx)
Temperature ranges °C ambient	-20...+55°C (>40°C See Diagramm)
Storage & transportation medium	-30...+70°C -20...+70°C

Max. current vs ambient temperature

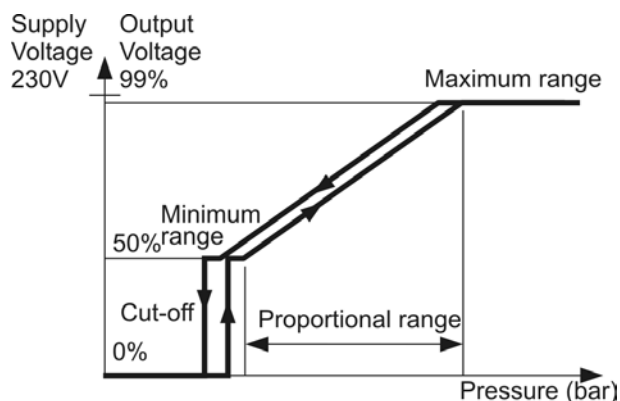


Pressure change per turn of adjustment screw	FSY-41: 4.0 .. 12.5 Bar Clockwise ~ +1.2 Bar Counterclockwise ~ -1.2 bar
	FSY-42: 9.2 .. 21.2 Bar Clockwise ~ +2.5 Bar Counterclockwise ~ -2.5 Bar
	FSY-43: 12.4 .. 28.4 Bar Clockwise ~ +3.3 Bar Counterclockwise ~ -3.3 Bar
Proportional range	FSY-41: 2.5 Bar FSY-42: 3.8 Bar FSY-43: 4.6 Bar
Housing material	PC and PA

Function diagram

The control behaviour can be easily described by looking at the function of output voltage versus input pressure: In the maximum range the FSY provides a constant output voltage of approximately 1% below the supply voltage. The fan is running at maximum speed. Along the proportional range, the output voltage varies between maximum and minimum voltage of approximately 50% of the supply voltage. This causes the fan to slow down from maximum to minimum speed.

Further decrease of pressure in the minimum range leads to cut-off of the fan motor. Reincrease of input pressure will start the motor with a hysteresis of approximately 0.7 bar to avoid cycling. The pressure from which motor cuts off is adjustable (see selection table - adjustment range).



FSE fan speed control module

Electronic Fan Speed Control Modules FSE generate a 0...10 V signal, which is used to control the speed of condenser fan motors in commercial refrigeration and air-conditioning systems. Ideal for use with high efficient EC-motors, but can be also used with phase cut controllers for induction motors.

Features

- Energy saving due to improved cooling efficiency
- Pressure for minimum speed adjustable
- Small proportional band and large hysteresis to minimize cycling at small pressure changes
- Reduced fan noise level during low ambient temp. conditions
- Improved overall performance of cooling system
- Easy installation with cables for power supply and motor connection factory wired
- IP 65 protection for outdoor mounting suitable for any size of EC fan motors
- UL file nr.: E355325 (Released for 43 bar)



FSE Control Modules

Selection chart control modules FSE

Type	Part no.	Refrigerants	Adjustment range PCut (bar) *	Factory settings (bar)	Max. operating pressure PS (bar)	PT (bar)	Pressure connection
FSE-01S	804 701	R134a	4 ... 12.5	7.8	27 bar	30 bar	7/16" -20 UNF female
FSE-02S	804 706	R22, R407C, R404A, R507	10 ... 21	15.5	32 bar	36 bar	7/16" -20 UNF female
FSE-03S	804 711	R410A	12 ... 28	20.4	45 bar	50 bar	7/16" -20 UNF female

Cable assemblies for connection of fse control module to controller

Type	Part no.	No of leads	Diameter of leads	Temperature range °C	Cable length (m)
PS3-N15	804 580	3	0.75 mm ²	-25...+80	1.5
PS3-N30	804 581				3.0
PS3-N60	804 582				6.0

Technical data FSE

Supply voltage	10 V; Applied by controller
Operating current 0...10 VDC output	Max. 1 mA
Medium compatibility	HFC, HCFC, HFO/HFO Blends, POE-, Synthetic and mineral oils
Protection class (IEC529/EN 60529)	IP 65 with cable connector assemblies PS3-Nxx

Pressure connection FSE-01S and FSE-02S FSE-03S	Brass stainless steel
Temperature range storage and transportation operation	-30° ... +70°C -20° ... +65°C
Materials housing cover	PA