

# ESC Series Electronic flow regulators

Automatic flow control by analogue signal (0-10V / 0-5V / 4-20mA) .

Manual flow control by HMI Bluetooth® application (Android® / Apple®).



## DESCRIPTION AND APPLICATION ADVANTAGES

ESC electronic flow regulators allows to regulate the compressed air flow in a pipe by:

- analog signal (0-10Volt / 0-5 Volt / 4-20mA)
- manual setting from the operator interface (HMI Bluetooth) (APP for tablet / smartphone with o.s. Android and Apple.)

The following indicators and controls are present on ESC front panel:

- **5-segment Green LEDs bar \***, indicates the regulator opening percentage .
- **Green Led\***, indicates controller status :
  - switched off without power supply
  - flashing during adjustment
  - switched on when the adjustment is reached.
- **Blue Led** (, indicates when ESC is controlled via HMI interface from a tablet or smartphone.
- **Led (Red) \*** indicates any alarm status.
- **RESET** button.

*Note \*: indicators also present on the Bluetooth HMI interface.*

The terminal board, in addition to the 24Vdc power supply and the analogue command signal input, has two further outputs:

- **REG. OK**, switches to ON when the opening % target is reached.
- **Alarm**, switches ON in the presence of alarm conditions.

## Type:

- **S** SINGLE DIRECTION, HIGH FLOW RATE  
Regulators with flow rates up to 1200 l/min (ANR).
- **F** SINGLE DIR. FINE REG., LOW FLOW RATE  
Linear response and ultra fine regulation.  
Max flow rate 13 l/min(ANR).
- **N** BIDIRECTIONAL LINEAR RESPONSE,  
For pressure and vacuum, flow rates up to 400 l/min (ANR), linear response

*Note \* 1: consult response specific flow characteristic charts for each model.*

ESC electronic flow controllers are used for automatic speed control of pneumatic motors and actuators, cooler and expulsion nozzles flow control, tank and volumes pressurization and discharging time .  
On request, it's possible to read an external reference, (analog or digital) e.g. a pneumatic motor speed sensor, then directly control the motor speed.

DIN rail mounting.

## Features

Versione	ESC-S					ESC-F		ESC-N						
	04-H44	06-H66	08-H88	10-H1010	10-H1212	H44	H66	10-H44	50-H44	10-H66	50-H66	150-H66	300-H66	300-H88
Model	04-H44	06-H66	08-H88	10-H1010	10-H1212	H44	H66	10-H44	50-H44	10-H66	50-H66	150-H66	300-H66	300-H88
Nominal max flow rate l/min (ANR)	130	300	550	1100	1200		13	17	65	17	65	200	400	400
Max effective sectional area (mm <sup>2</sup> )	1,9	4,5	8	16,5	18		0,2	0,2	0,7	0,2	0,7	2,2	4,5	4,5
ø Pipe size o.d. (mm)	4	6	8	10	12	4	6	4	6	6	6	6	6	8
Operative pressure range (MPa)	0,1~1,0 (1~10 Bar)							-0,1~1,0 (-1 ~ 1 Bar)						
Fluid temperature (°C)	5~60 (no freezing)													
Ambient temperature (°C)	0~60 (no freezing)													
Electric power supply	Stabilized 24Vdc (max ripple 1%) max. consumption I=0,5A													
Input:	1 inanalogue input (0-10V / 0-5V / 4-20mA as selected by order code)													
Outputs:	1 Alarm output + 1 REGULATION OK output (PNP Open Collector 24Vcc 100mA max)													
Light Indicators:	Status LED green , Alarm LED red, Active Bluetooth LED blue, 5 segmetns LEDs bar % flow indicator													
Manual control:	Graphic HMI interface for Android® /Apple® Equipments													
Weight (g)	200													

• **How to order**

ESC -  $\frac{**}{1}$  -  $\frac{**}{2}$  -  $\frac{**}{3}$  -  $\frac{**}{4}$

**1 Type:**

- S = Single direction high flow rate
- F = Single direction, low flow rate, linear and fine regulation
- N = Bidirectional, linear response, for pressure and vacuum

**3 Control signal**

- 0 = 0-10 Volt
- 1 = 0-5 Volt
- 2 = 4-20mA

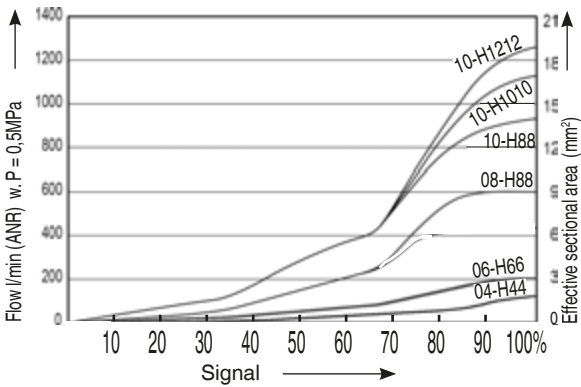
**4 Flow direction (S ed F Types only)**

- N = Standard Sx. => Dx
- R = Reverse Dx. => Sx.

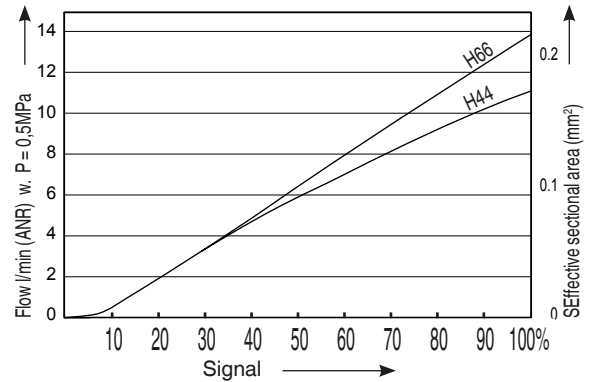
**2 Size and ø Pipe o.d. , combinations:**

<b>S Type</b>	<b>04-H44</b>	= o.d pipe ø4 mm
	<b>06-H66</b>	= o.d pipe ø6 mm
	<b>08-H88</b>	= o.d pipe ø8 mm
	<b>10-H1010</b>	= o.d pipe ø10 mm
	<b>10-H1212</b>	= o.d pipe ø12 mm
<b>F Type</b>	<b>H44</b>	= o.d pipe ø4 mm
	<b>H66</b>	= o.d pipe ø6 mm
<b>N Type</b>	<b>10-H44</b>	= o.d pipe ø4 mm
	<b>10-H66</b>	= o.d pipe ø6 mm
	<b>50-H44</b>	= o.d pipe ø4 mm
	<b>50-H66</b>	= o.d pipe ø6 mm
	<b>300-H66</b>	= o.d pipe ø6 mm
	<b>300-H88</b>	= o.d pipe ø8 mm

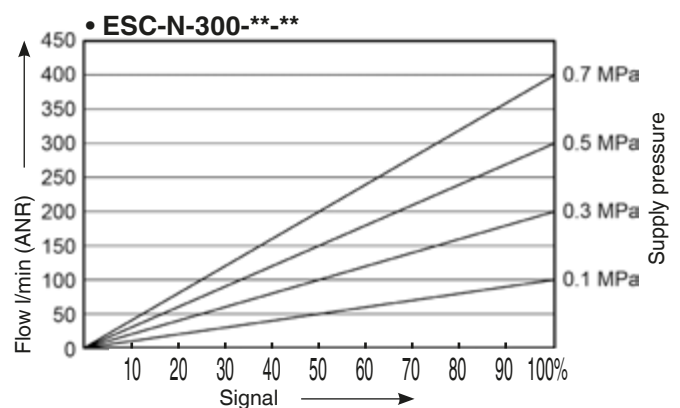
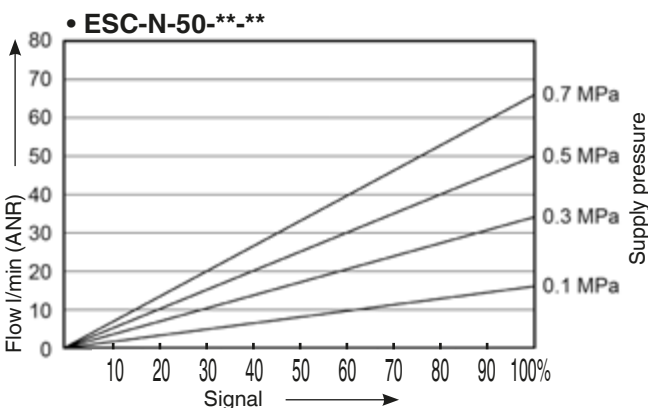
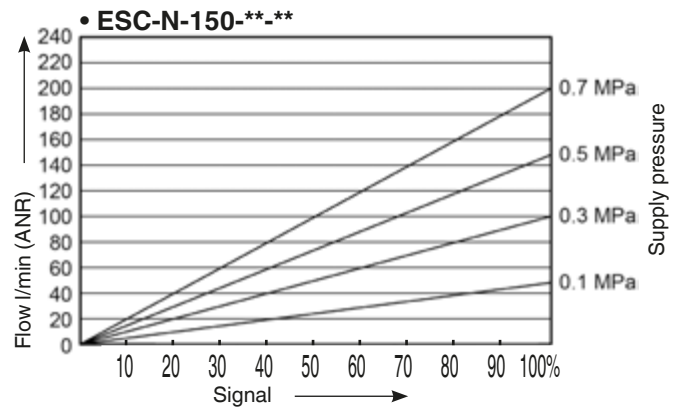
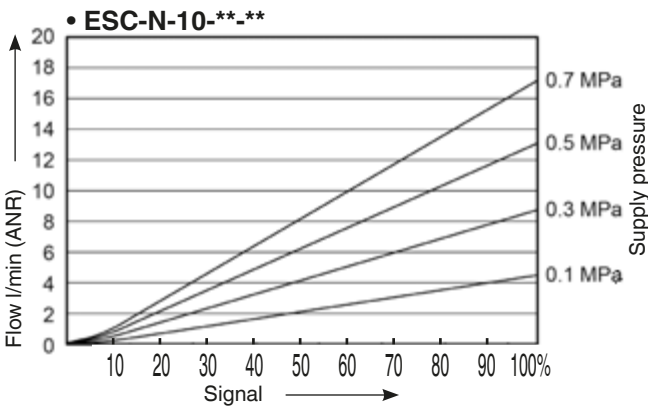
• **Response characteristic ESC-S**



• **Response characteristic ESC-F**



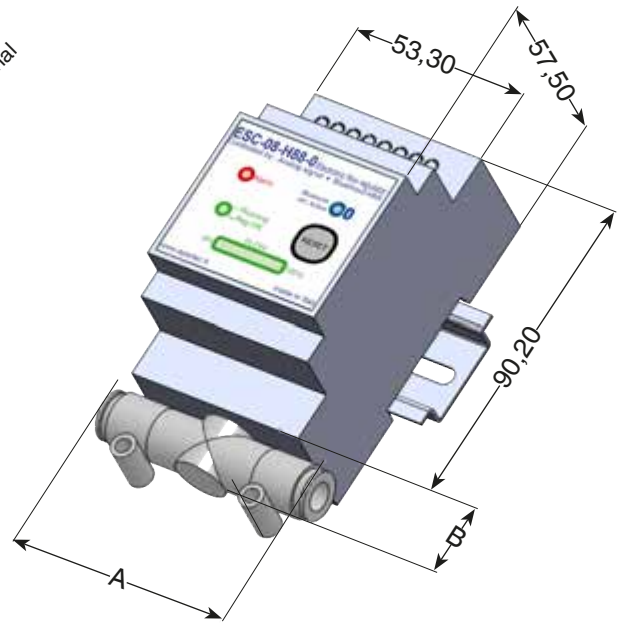
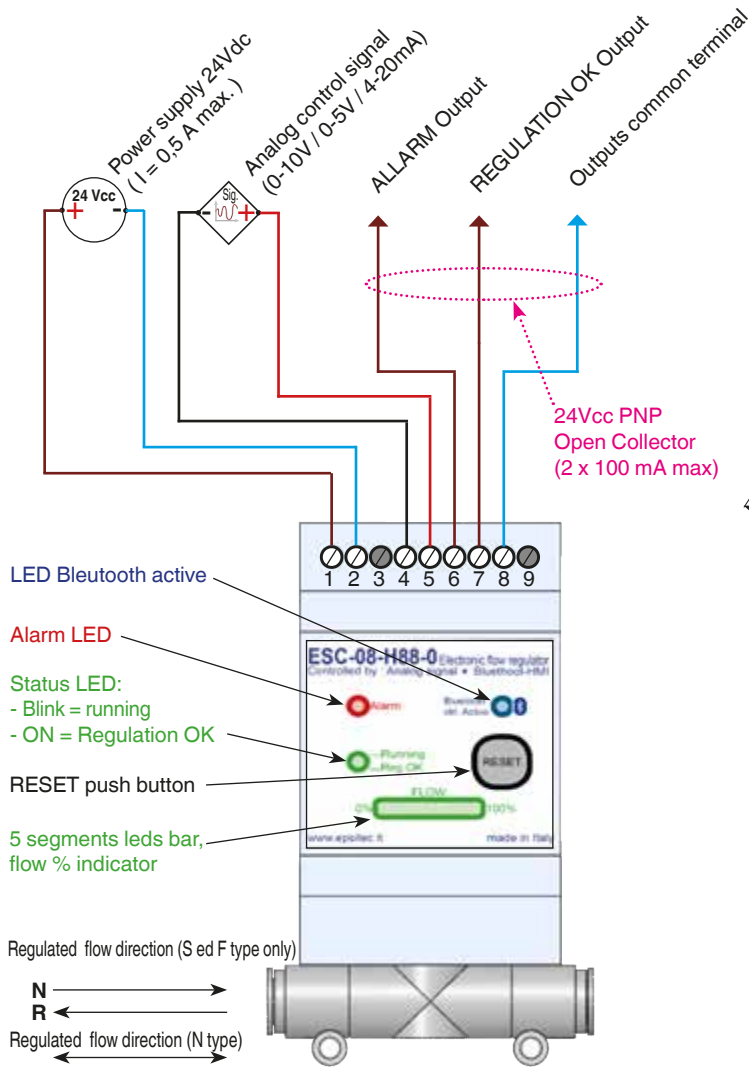
• **Response characteristic ESC-N**



*Note: Flow characteristics refer to a regulator with free flow outlet connection. With regulation equal to 0% small functional leaks (few ml / minute) are possible, if a perfect seal it's necessary, a "Zero Leakage" version is available with an 2/2 solenoid valve installed onboard.*

• **Box description and wiring**

• **Dimensions**

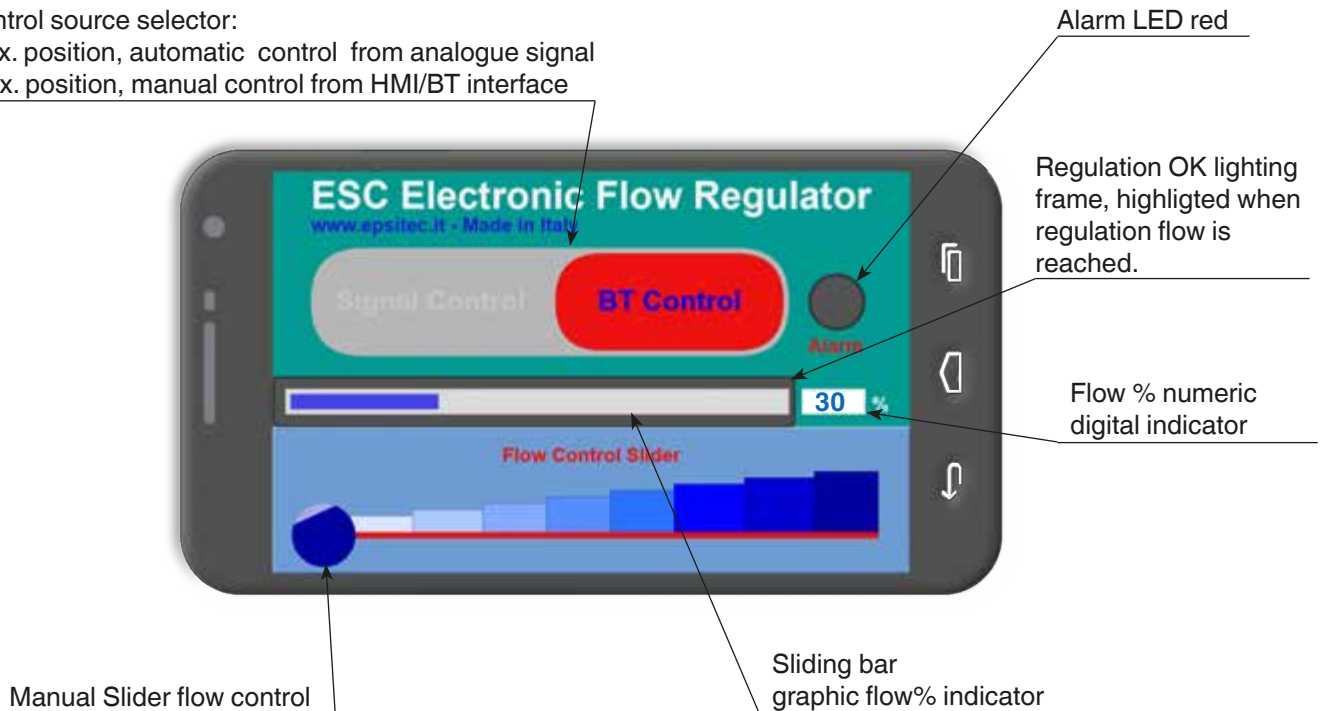


Model	A	B
ESC-S-04-H44	46	14,5
ESC-S-06-H66	49,4	17,6
ESC-S-08-H88	66,5	20,6
ESC-S-10-H1010	75	25,1
ESC-S-10-H1212	79	25,3
ESC-F-H44	46	14,5
ESC-F-H66	49,4	17,6
ESC-N-10-H44	46	14,5
ESC-N-10-H66	49,4	17,6
ESC-N-50-H44	46	14,5
ESC-N-50-H66	49,4	17,6
ESC-N-150-H66	64	17,6
ESC-N-300-H66	64	20,6
ESC-N-300-H88	66,5	20,6

• **HMI-Bluetooth interface description, available on Android ed Apple equipments**

Control source selector:

- Sx. position, automatic control from analogue signal
- Dx. position, manual control from HMI/BT interface





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