

# ECM SERIES ELECTRONIC RETURN DAMPER ACTUATOR

Modulating Control  
20 Nm

## ECM...20 (S) SERIES

NECA SERIES damper actuators with Electronic Return® (ER) function are designed and produced for extended functionalities in the HVAC Systems: air handling equipment, fan coils and laboratory applications. Electronic Return® (ER) is able to manage short voltage interruptions for max. 10 seconds.



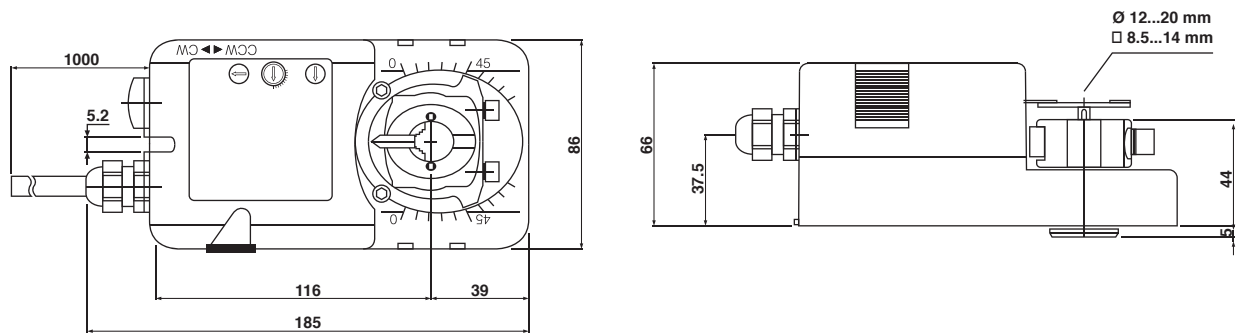
## PRODUCT FEATURE

- Torque 20 Nm
- Damper size 4.0 m<sup>2</sup>
- Power supply AC/DC 24V
- Control Modulating Signal DC 0(2)...10 V / 0(4)...20 mA
- Shaft dimensions - Ø 12...20 mm / □ 8.5...14 mm
- Minimum Shaft Length 50 mm
- Adjustable angle of rotation
- Selectable direction of rotation of reversing actuator
- Actuator with 1 m cable connection
- Optional 2 Adjustable SPDT auxiliary switches
- Manual Over-ride push button when required

## MODEL SELECTION TABLE

MODEL /TYPE	TORQUE	POWER SUPPLY	RUNNING TIME	RETURN	AUXILIARY SWITCH
ECM 1.1-20	20 Nm	AC/DC 24V ± 10%	70...100 sec	55 sec	-
ECM 1.1-20S	20 Nm	AC/DC 24V ± 10%	70...100 sec	55 sec	2 x SPDT (Adjustable)

## DIMENSION (mm)



## TECHNICAL SPECIFICATION

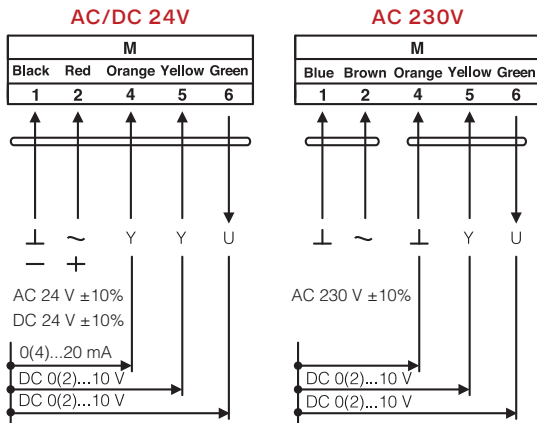
<b>MODEL NUMBER</b>	<b>ECM 1.1-20 (S)</b>
<b>TORQUE</b>	20 Nm
<b>DAMPER SIZE</b>	4.0 m <sup>2</sup>
<b>SHAFT DIMENSION</b>	Ø 12...20 mm / □ 8.5...14 mm*
<b>POWER SUPPLY</b>	AC/DC 24 V ± 10%
<b>FREQUENCY</b>	50...60 Hz
<b>CONTROL SIGNAL (INPUT)</b>	DC 0(2)...10 V / 0(4)...20 mA
<b>POSITION SIGNAL (OUTPUT)</b>	DC 0(2)...10 V
<b>POWER CONSUMPTION</b>	
● <b>OPERATING</b>	7.2 W
● <b>END POSITION</b>	1.2 W
<b>FOR WIRE SIZING</b>	8.0 VA
<b>ELECTRICAL CONNECTION</b>	1 m Cable
<b>PROTECTION CLASS</b>	Class III ⚡
<b>ANGLE OF ROTATION</b>	90° (95° mechanical)
<b>WEIGHT</b>	1.4 Kg
<b>LIFE CYCLE</b>	60,000 Rotation
<b>SOUND LEVEL</b>	40 dB
<b>IP PROTECTION</b>	IP54
<b>OPERATING TEMPERATURE</b>	-30°...50° as per IEC 721-3-3
<b>NON-OPERATING TEMPERATURE</b>	-30°...+60° C / IEC 721-3-2
<b>AMBIENT HUMIDITY</b>	5%...95% rH non condensing / EN
<b>MAINTENANCE</b>	Maintenance Free
<b>MODE OF OPERATION</b>	Type I / EN 60730-1
<b>EMC</b>	CE & ISO 9000 EN / EEC

\*Note that shaft dimension has a tolerance offset of ± 0.2mm.

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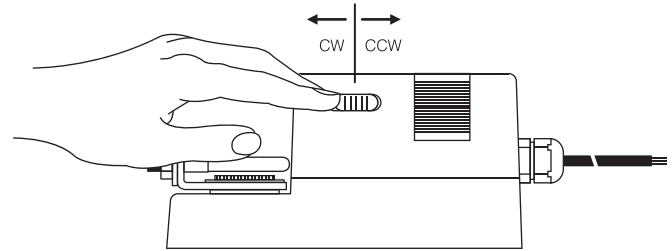
## WIRING DIAGRAM ECM...20 (S) POWER SUPPLY AC/DC 24V



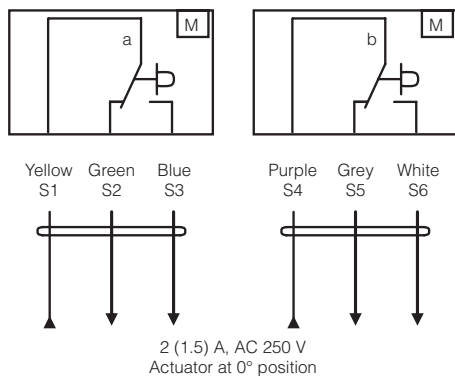
## DIRECTION OF ROTATION ECM...20 (S)

Default factory setting: CW.

Direction of rotation can be change by toggling between CW/CCW switch on the actuator's housing.



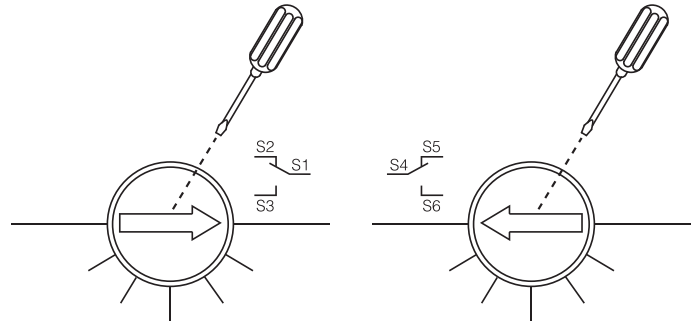
## WIRING DIAGRAM ECM...20 (S) AUXILIARY SWITCH



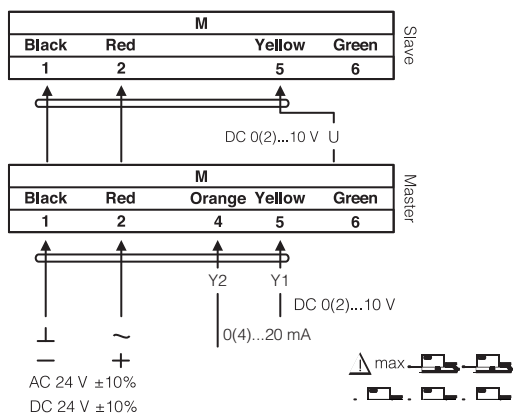
## AUXILIARY SWITCH ECM...20 (S)

Auxiliary switch **(a)** factory-set at 5° and **(b)** at 85°.

Both the auxiliary switches **(a)** and **(b)** can be optimally adjusted between 0°...90°.



## WIRING DIAGRAM ECM...20 (S) PARALLEL CONNECTION



## REMARK

During parallel operation, the output signal (terminal 6, DC 0(2)...10 V) of the master actuator must be connected to terminal 5 of the next slave actuator.

## ADJUSTING CONTROL SIGNALS

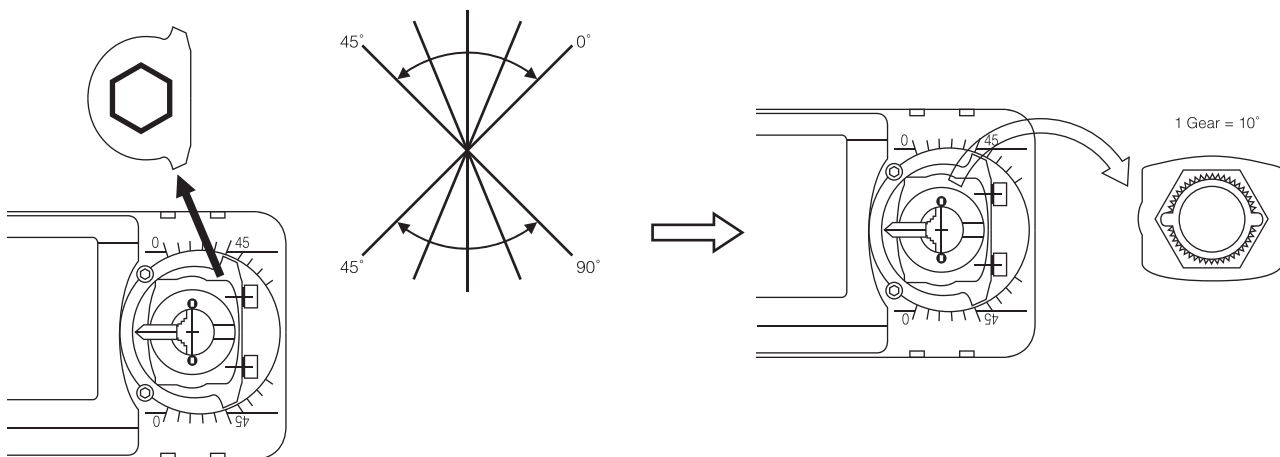
Control Signal 5                    DC 0...10V  
Input Resistance                  Ri100k Ohm

### Factory Default Setting

Control Signal 5                    DC 2...10V  
Input Resistance                  Ri500k Ohm



### On Request

## ANGLE OF ROTATION LIMITING



## IMPORTANT REMARK

For special requirement, consult your local Swisotec's representative.

  This actuator includes electrical and electronic components and may not be disposed as household garbage. Please consider the local valid legislation.

 AC / DC 24 V: Connect via safety isolating transformer.  
AC 230 V: To isolate from the main power supply, the system must incorporate a device which disconnects the phase conductor (with at least a 3mm contact gap.)

The performance specifications are nominal and conform to acceptable industry standards. Swisotec shall not be liable for damages resulting from misapplication or misuse of its products.