CR-TEC Engineering

Automated Valve Solutions

ER & V OPTIONS

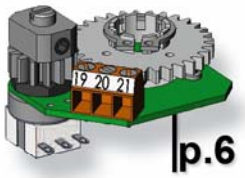
Installation and Operation Manual

ECD.1A
ECM.1&2

p.3

EPR.B

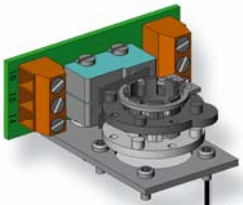
EPT.C



p.6

EFC.2

p.8

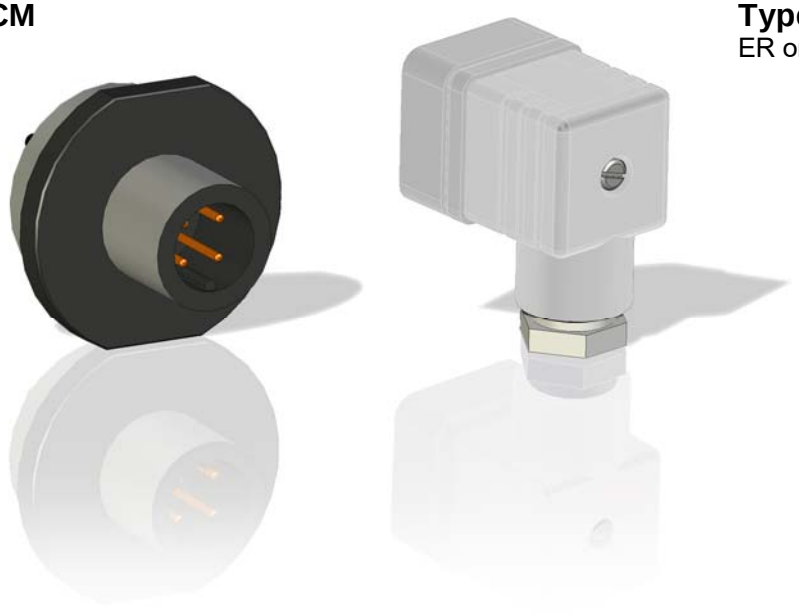


p.15

This product meets the European Directive 2012/19/UE about electrical and electronic equipment (DEEE). It mustn't be mixed with common waste. Please, recycle or dispose of them according to your country laws.

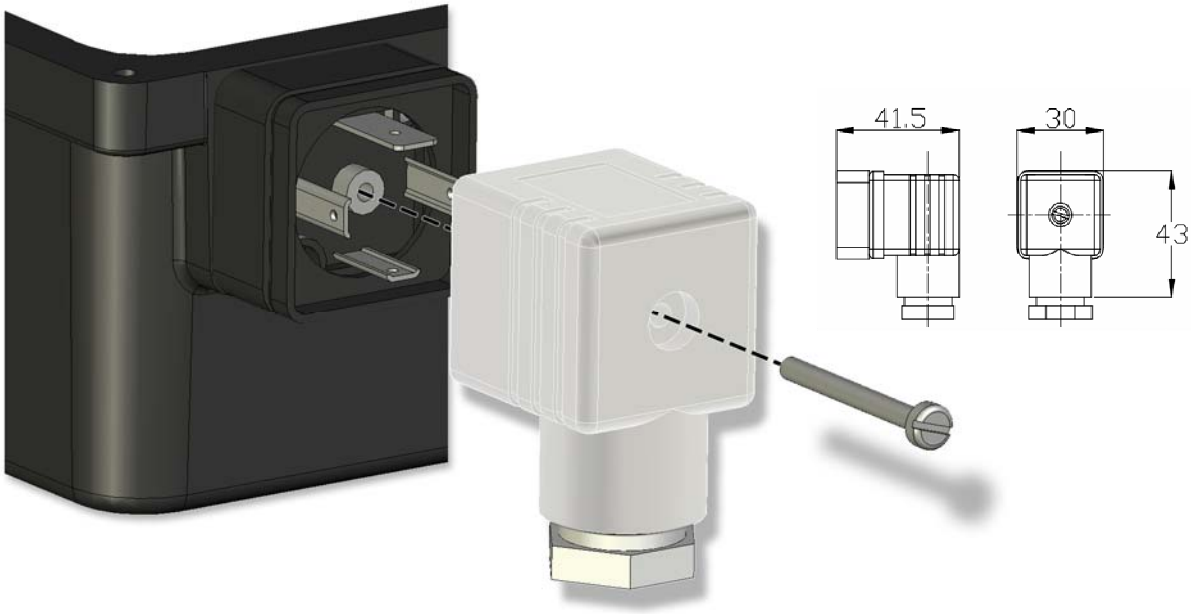
Type : ECM

Type : ECD
ER only



ECD.1A	ECM.1	ECM.2
3P+T DIN43650 connector.	1 x M12 connector.	2 x M12 connector.
IP66	IP67	IP67

ASSEMBLY AND DIMENSIONS (ECD.1A)



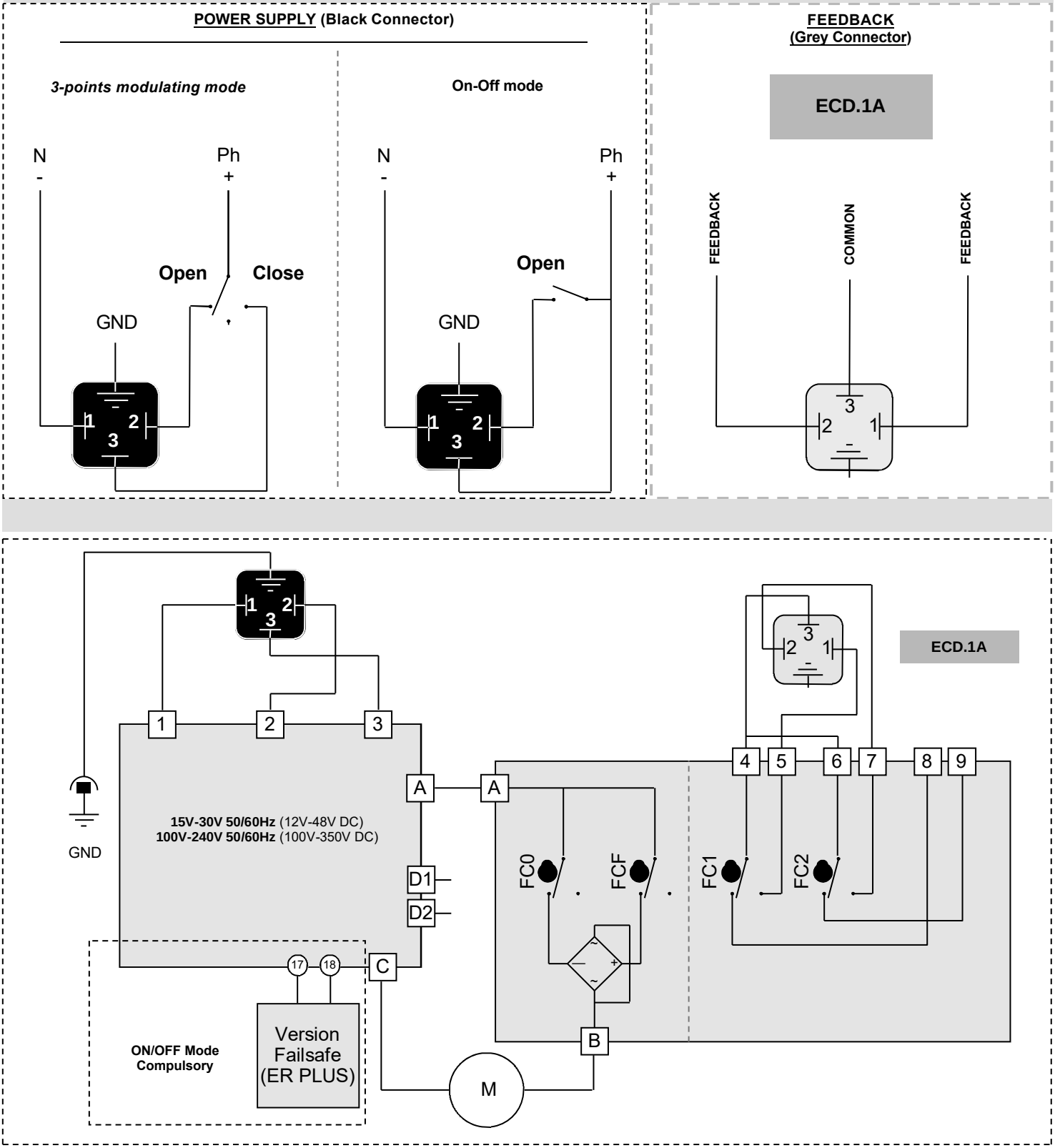
Our cable glands are designed for cables with a diameter between 7mm and 12mm.

Foresee a shunt between 4 and 6 (customer wiring)

ECD.1A - ELECTRIC WIRING

REP	DESIGNATION				
FC0	Open limit switch	FC1	Auxiliary limit switch 1	D1/D2	Failure report Terminal strip (24V DC / 3A max) (ER PLUS)
FCF	Close limit switch	FC2	Auxiliary limit switch 2	M	Motor

SUGGESTED CUSTOMER WIRING



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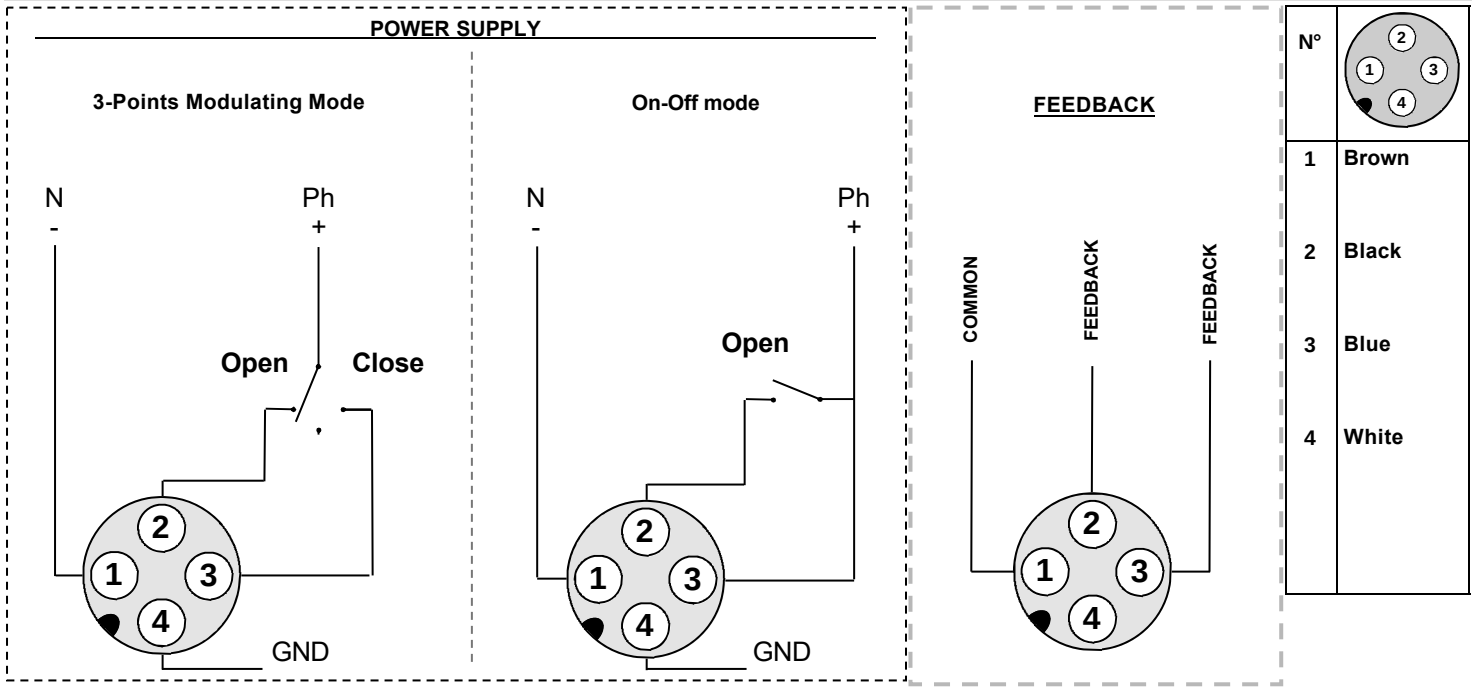
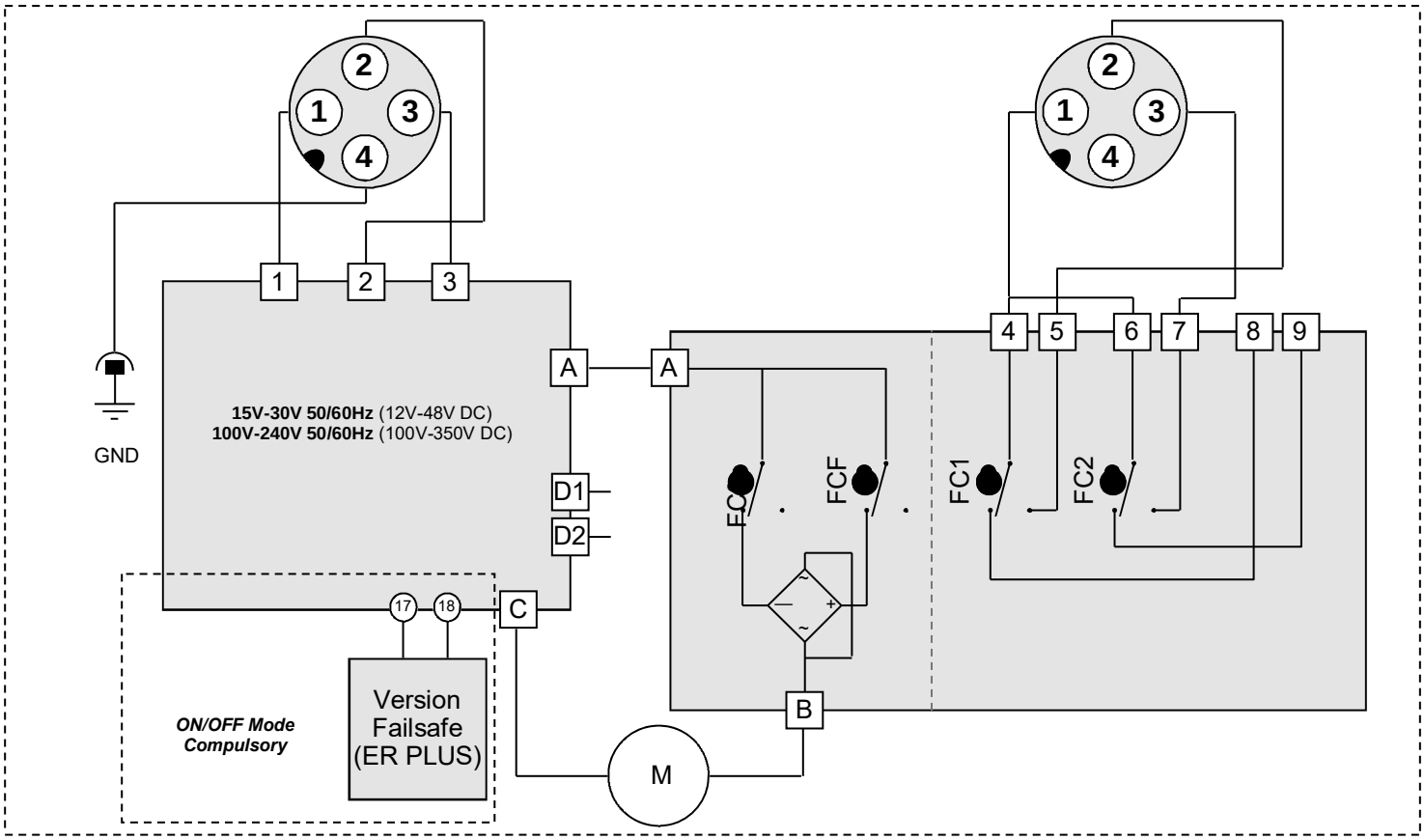
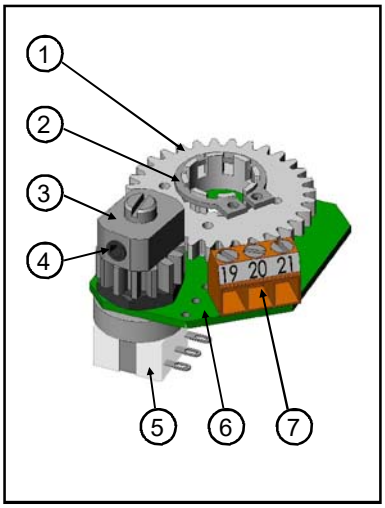




DESCRIPTION

Feedback potentiometer when control of position feedback is needed with 100, 1000, 5000 or 10000 Ohms to integrated inside actuators.

Rep.	Designation	
1	Drive gear	
2	Security spring	
3	Potentiometer gear	
4	Screws	
5	Potentiometer	
6	Potentiometer card	
7	Potentiometer terminal block	



- The "customer" terminal must be connected with rigid wires. If the applied voltage is higher than 42V, the user must foresee a fuse in the power supply line.
- For a use with a long power supply wiring, the induction current generated by the wires musn't be higher than 1mA

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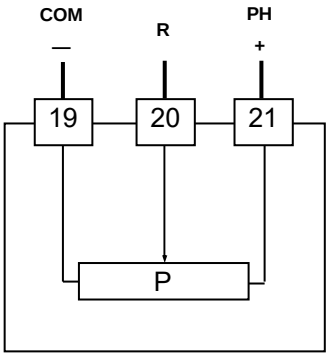
ELECTRIC WIRING



REP	DESIGNATION
P	**Potentiometer**
R	**Feedback Information**
PH	**Phase**

DSBL0118

Inverted values between terminals 20 and 21.

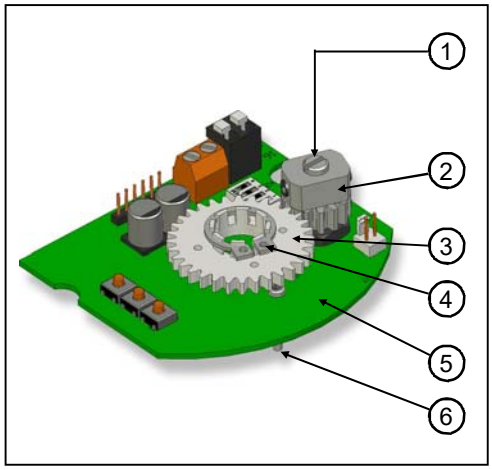
TECHNICAL DATA

TYPE	EPR.01.B	EPR.1.B	EPR.5.B	EPR.10.B
Data (Ohms)	100	1000	5000	10000
Travel Angle	90° (0° - 270° **On Request**)			
Linearity	+/-5%			
Tolerance	+/-10%			
Temperature	- 55 °C to + 125 °C			
Power	1W max			
Max. Voltage	**10 V** (0.1 A)	**30 V** (0.03 A)	**70 V** (0.014 A)	**100 V** (0.01 A)
Resistor value between terminals 19-20 (Ohm)				

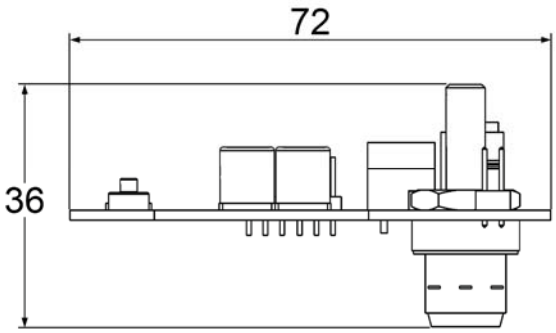
DESCRIPTION

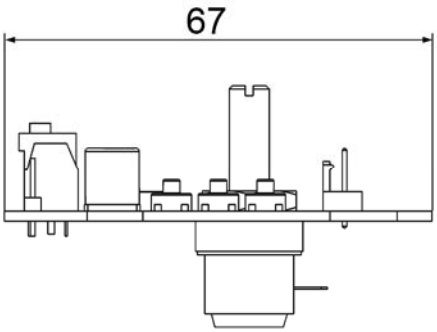
Transmitter when control of position feedback is needed with 0-20mA, 4-20mA or 0-10V per 90° to integrate inside actuators of ER PREMIER, ER PLUS and V ranges.

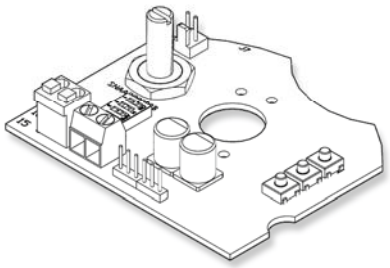
Rep.	Designation	
1	5K potentiometer	
2	*Potentiometer gear*	
3	Drive gear	
4	Security spring	
5	EPT.C card	
6	Screws	



DIMENSIONS







- **The speed allowed by the resolution of this converter doesn't make it possible to use it for speeds lo-wer than 10 seconds (1/4 of turn).**

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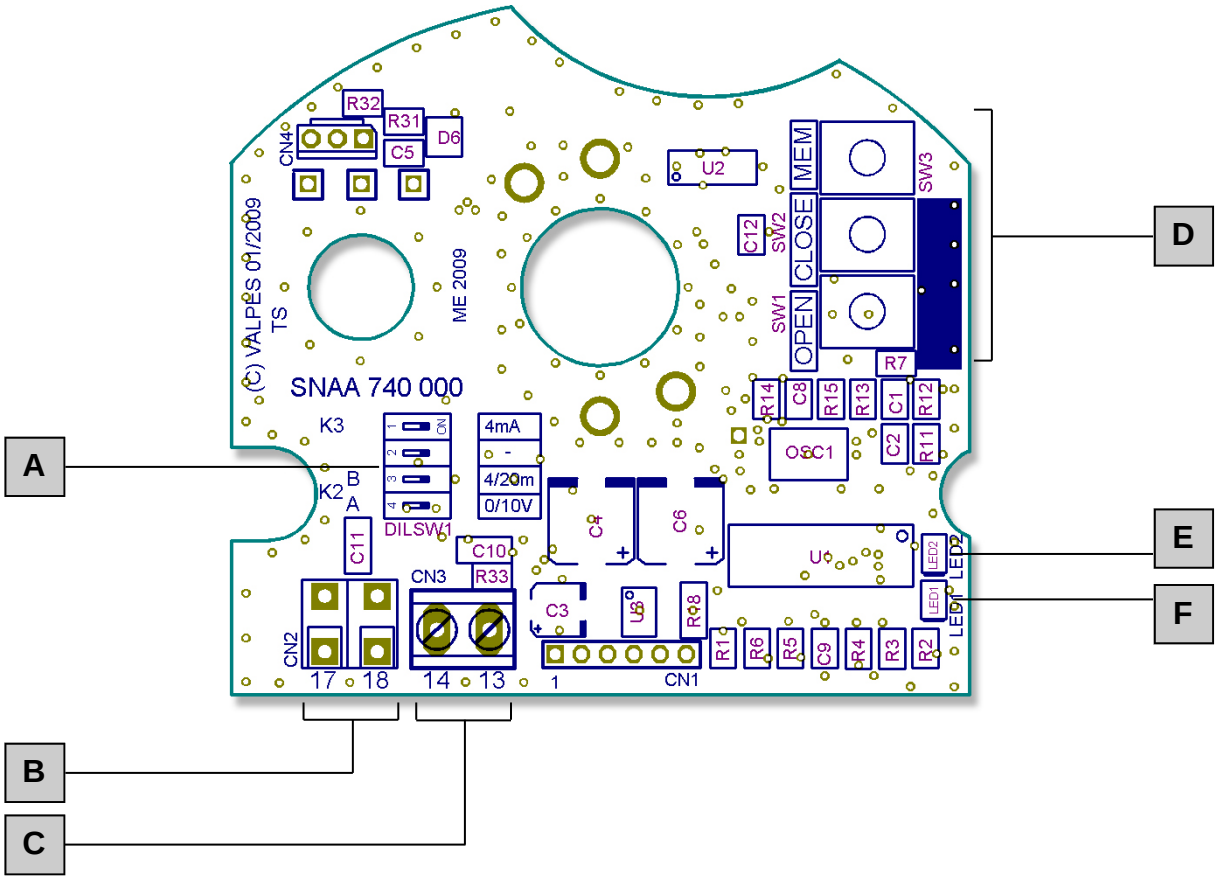
ELECTRONIC CARD

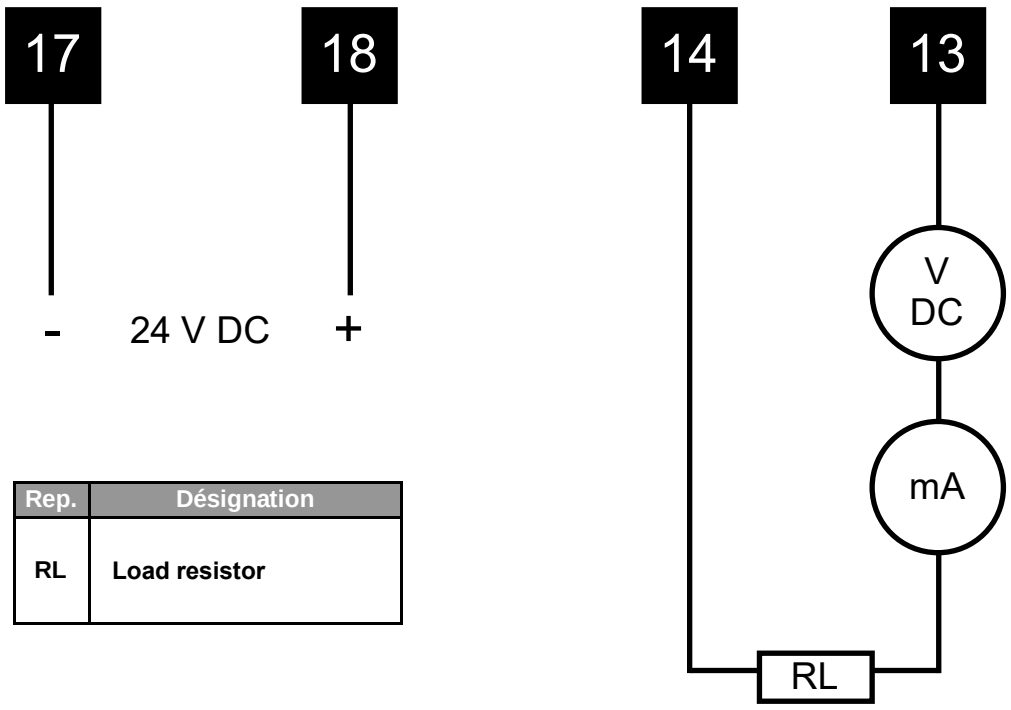


Rep.	Designation	
A	Mode selector	
B	24V DC terminal strip	
C	Feedback information connector	
D	Buttons	
E	LED 2 (Green)	
F	LED 1 (red)	

TECHNICAL DATA

POWER SUPPLY	
EPT.C used with a card of PLUS	12-48 VDC 15-30 VAC
INPUT	
Travel angle	90° +/-10% 180° +/-10%
Gear's ratio	2.3 1.3
Conversion speed	10 Mesures/Seconde
Temperature	-10°C / + 60°C
OUTPUT	4-20mA / 0-20mA
Resolution	20µA
Full scale accuracy	**+/- 5%**
Maximum load re-sistance	800 Ohms
OUTPUT	0-10V
Resolution	10mV
Full scale accuracy	**+/- 5%**
Minimum load re-sistance	1 K Ohms

ELECTRIC WIRING



Rep.	Désignation
RL	Load resistor

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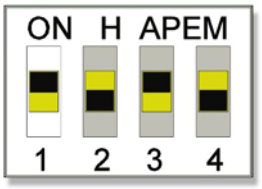
PROGRAMMING SEQUENCE

1 Shunts positioning (before each modification)

- Position the shunts as follows :

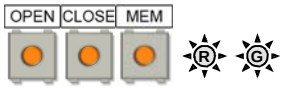
	1	2	3	4
0-10V	OFF	N/A	OFF	ON
0-20mA	OFF	N/A	ON	OFF
4-20mA	ON	N/A	ON	OFF



2 Connection:

- Connect the power supply (24V AC/DC) to the terminals 17 and 18
- Connect the feedback signal to the terminals 13 (+) and 14 (-)

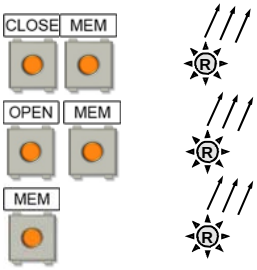
3 Initialization:



Press the **MEM** + **CLOSE** + **OPEN** button, and apply the operating voltage to the card, keeping the buttons pressed. The two LEDs lights up. Release the buttons and wait until the LEDs light off. Disconnect the power supply card .

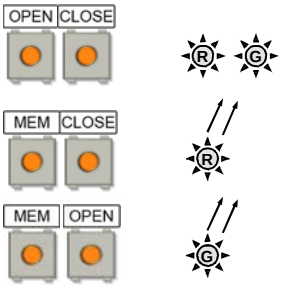
4 Setup :

4.1 Signal type choice:



- **4-20mA feedback signal:** Press the **MEM + CLOSE buttons** and apply the operating voltage to the card, keeping the buttons pressed. The **red LED lights up 3 times**. Release the buttons and disconnect the power supply card .
- **0-20mA feedback signal:** Press **MEM + OPEN buttons** and apply the operating voltage to the card, keeping the buttons pressed. The **red LED lights up 3 times**. Release the buttons and disconnect the power supply card.
- **0-10V feedback signal:** Press **MEM button** and apply the operating voltage to the card, keeping the button pressed. The **red LED lights up 3 times**. Release the button and disconnect the power supply card.

4.2 Learning mode



- Press the **OPEN + CLOSE buttons** and apply the operating voltage to the card, keeping the buttons pressed. The **2 LEDs light up**. Release the buttons , the 2 LEDs light off. Le mode The learning mode is selected.
- Operate electrically the actuator to its closed position.
- Save the closed position by pressing **MEM + CLOSE,** the **red LED lights up 2 times** to confirm.
- Operate electrically the actuator to its open position
- Save the open position by pressing **MEM + OPEN,** the **green LED lights up 2 times** to confirm
- The positions are saved. disconnect the power supply card.

	Open position	Closed position
0-10V	10V (100%)	0V (0%)
0-20mA	20mA (100%)	0mA (0%)
4-20mA	20mA (100%)	4mA (0%)

NOTE :

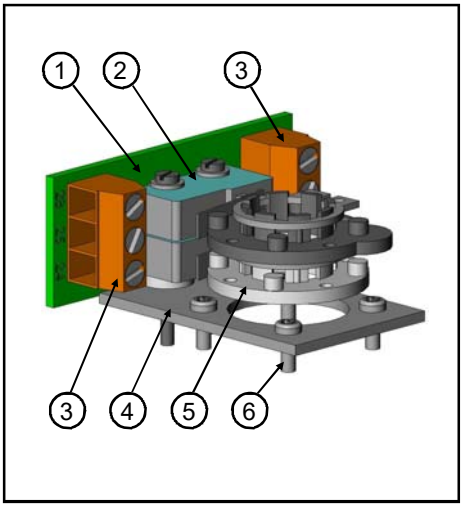
It's possible to link the terminals 17 and 18 of the power supply card with the terminals 17 and 18 of the EPT.C to execute the parameters selection sequence. However, in the case of a use without permanently power supply, the feedback information won't be available during "out of power" phases.
In this case, to insure the permanence of the feedback information, connect the EPT.C card to an external continuous power supply.

EFC.2 - 2 EXTRA LIMIT SWITCHES CARD

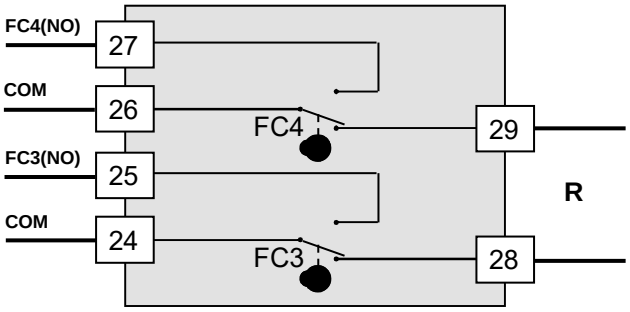
DESCRIPTION

2 limit switches card allowing an extra feedback information

Rep.	Designation	
1	Circuit board	
2	End limit switches	
3	Terminal strips	
4	Plastic bracket	
5	Cams and circlips	
6	M2,2x6,5 screws	



ELECTRIC WIRING



REP	DESIGNATION
FC3	*Auxiliary limit switch 3*
FC4	*Auxiliary limit switch 4*
R	*Feedback information*

TECHNICAL DATA

12 to 250 V AC and 4 to 24 V DC	Min. 100 mA	Max. 5 A (resistive), 0.5 A (motor), 0.125 A (capacitive loads)

- The "customer" terminal must be connected with rigid wires. If the applied voltage is higher than 42V, the user must foresee a fuse in the power supply line.
- For a use with a long power supply wiring, the induction current generated by the wires musn't be higher than 1mA

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