

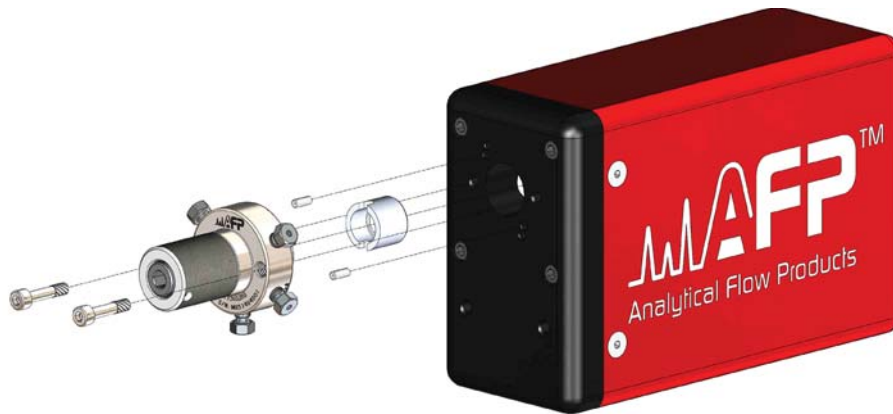


AFP® MEA Mini Electrical Rotary Actuator User's Instructions



Please read and understand the instruction related to this product. These are User's Instructions and the AN-05 application notes.

Failure to do so may result in human injury, death and equipment damage or malfunction.



Our electrical rotary actuator makes sure to only transfer rotational forces. No radial or axial force is applied to the valve. During normal operation, a positioning stroke mechanism prevents valve overloading. Here, valve overloading is defined as hitting and positioning against valve stoppers at EACH actuation.

By reducing the overloading action, our actuator is effectively increasing the valve's life. Experience shows that overloading on stopper and/or driver pin tends to engrave them resulting in valve malfunction.

Our actuator has its own microcontroller that can be programmed in different ways. Positioning parameters, position feedback and other features can be transmitted to or received from the microcontroller. Many other AFP products can be linked to the actuator.

FEATURES :

- Two and multi-positions versions
- High speed actuation
- Self calibrating to different valve model
- Micro Processor controlled motor
- Real time clock, log and configuration memory
- Opto Isolated digital inputs
- The MEA could be controlled by other hardware products like PLC, sampling system or directly by a GC
- RS-485 Half Duplex, RS-232 Full Duplex
- Through its serial port, the MEA could be controlled with other application a software like LabView™
- Open Serial protocol for third party software integration, AFP Network protocol
- Utility software tools available
- Binary and BCD digital control
- Step input and BCD output for GC interface

Position selection is done by digital inputs or by AFP Network commands. When used with any two positions type valve, the actuator will need only one digital input for port selection. The same electrical actuator can also be used with multi-position valves, like a sample stream selection application. In a multi-position valve, up to 5 digital serial inputs are used for port selection.

At power up, in digital control mode, the actuator will go to the selected port. In normal operation the actuator saves its position and does not need special routine at power up.

GENERAL SPECIFICATIONS

| SPECIFICATION | DESCRIPTION | |
|--|------------------|---------------|
| 8-bit Microcontroller and configuration Memory | | |
| Real Time Clock (RTC), for event timing (option) | | |
| Flash Memory for event table and log (option) | Flash | 4 Meg Bytes |
| RS-232 | Full Duplex | 9600 Bauds |
| RS-485 (2 wires) | Half Duplex | 9600 Bauds |
| Motor Current Monitoring | Analog Converter | 10 Bits |
| Operating temperature | Fahrenheit (°F) | 32°F to 140°F |
| | Celcius (°C) | 0°C to 60°C |
| CE Conform , RoHS | | |

ELECTRICAL SPECIFICATIONS

| Supply voltage input (Transient and Reverse polarity protection) | Typical | 24 Volts DC / 2 Amp. |
|---|---------|----------------------|
| Standby power consumption | Typical | 140 mW |

DIGITAL INPUT SPECIFICATIONS

- USED IN POSITIVE VOLTAGE MODE*

| ALL DIGITAL INPUTS | OPTO ISOLATED |
|-----------------------------------|---|
| Input current @ 12 Volts DC | 12V / 4.7kΩ = 2.55 mA |
| Input current @ 24 Volts DC | 24V / 4.7kΩ = 5.11 mA |
| Voltage range garanty "ON" state | 8 to 24 Volts DC |
| Voltage range garanty "OFF" state | 0 Volt DC, Ground (Do not leave floating) |

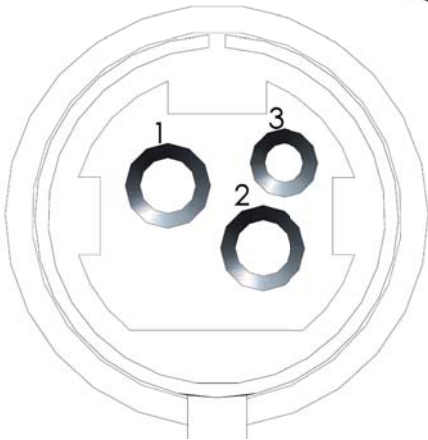
- USED IN DRY CONTACT MODE*

| ALL DIGITAL INPUTS | OPTO ISOLATED |
|--------------------|--|
| Internal pull-up | 5V / 10kΩ |
| "ON" state | Contact to ground, Digital logic "low", Open collector to ground |
| "OFF" state | Floating pin, Digital logic "high" |

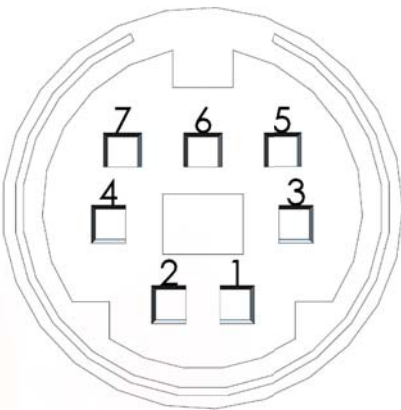
DIGITAL INPUT SPECIFICATIONS

| ALL DIGITAL OUTPUTS | |
|---------------------------|-----------------|
| Negative true Logic (BCD) | 0-5V CMOS Logic |

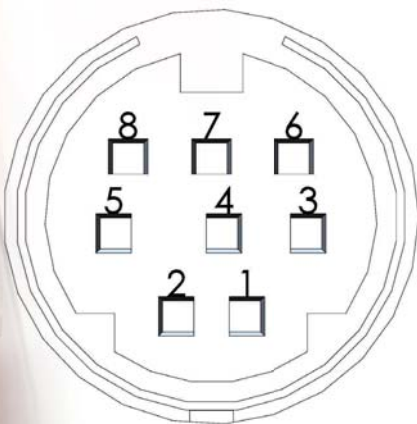
*The use of digital inputs and outputs is defined by internal jumpers

**DIN 3 : POWER INPUT**

| Pin number | |
|------------|---------------------|
| 1 | Vin +24V DC @ 2 Amp |
| 2 | GND |
| 3 | Not used |

**DIN 7 : COMMUNICATION AND DIGITAL INPUT (DEFAULT)**

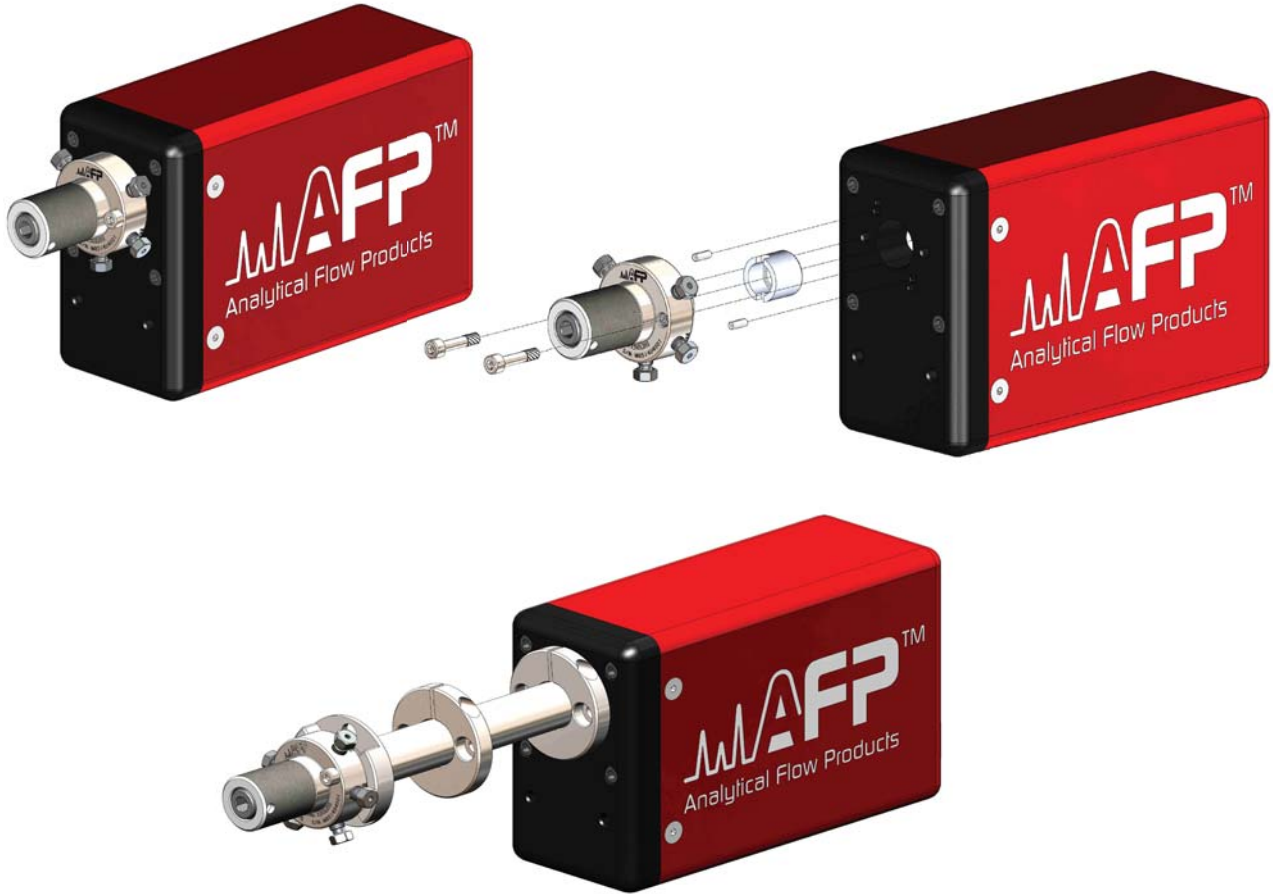
| Pin number | |
|------------|---------------------------------|
| 1 | RS-232 - TX Signal or RS-485 A+ |
| 2 | RS-232 - RX Signal or RS-485 B- |
| 3 | Digital input #1 |
| 4 | Digital input #2 |
| 5 | Digital input #3 |
| 6 | Digital input #4 |
| 7 | GND |

**DIN 8 : BCD OUPUTS AND STEP POSITIONING (DEFAULT)**

| Pin number | |
|------------|-------------------------------|
| 1 | Step increment position input |
| 2 | GND |
| 3 | BCD output 1 |
| 4 | BCD output 2 |
| 5 | BCD output 4 |
| 6 | BCD output 8 |
| 7 | BCD output 10 |
| 8 | GND |

4

MOUNTING BRACKET



5

STANDOFF

