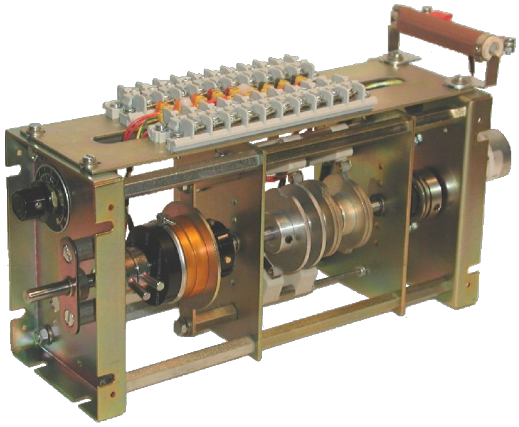
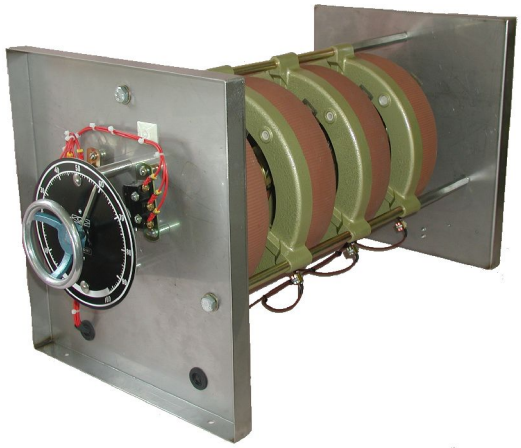
COUDOINT

Motorized Potentiometers and Rheostats



Motorized Potentiometers



Motorized Rheostats

Hardware Reference

Document 1101069 - Edition June 2009

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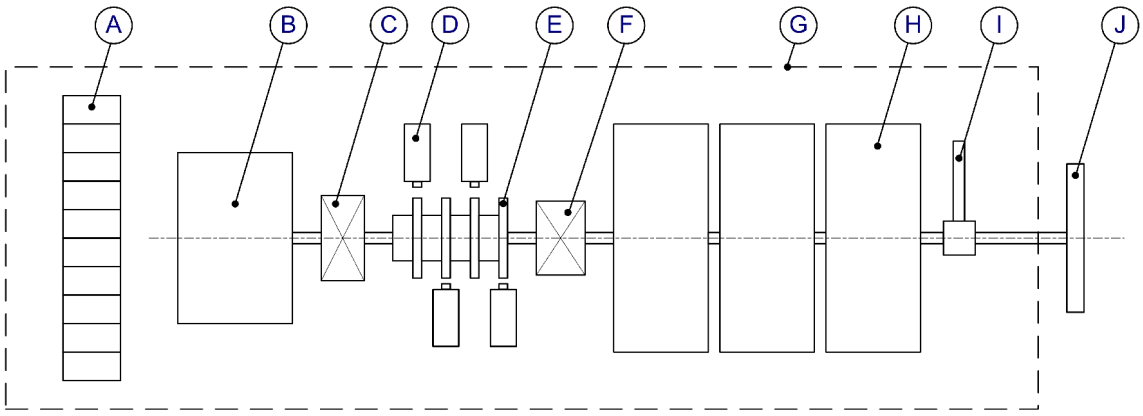
1 General Description

Function and applications :

Motorized potentiometers and rheostats (**MPR**) are modules designed to remotely control the angular position of a shaft.

These modules are suited for remote control applications or regulation functions, especially under harsh environmental conditions. Motorized rheostats are used when a higher level of output power is required.

Description: The MPR modules have the following structure:



They include :

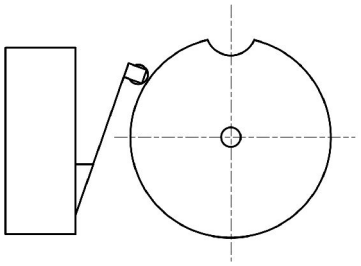
- a DC or AC gear-motor **B**,
- an optional rotary knob **J** to adjust the angular position where manual control is necessary,
- rotary position sensors:
  - rotary cam (**E)** switches **D** used as limit switches or position indicator switches
  - a single or multiple wirewound precision potentiometer or - depending on the position accuracy and on the electrical output power required – a rotary rheostat **H**,
- a torque limiter **F** linking the cam shaft and the potentiometer/rheostat shaft,
- a friction clutch **C** linking the motor shaft to the cam shaft,
- a mechanical stop **I** limiting the rotation angle,
- a screw terminal block or terminal lug **A** for power and signal connections

The whole set is assembled either on an open frame **G** for in-board or panel mounting, or in a IP20 or IP23 mechanical enclosure.

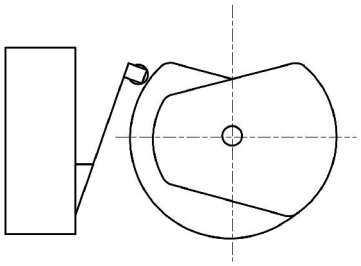
In the case of a DC gear-motor, a voltage divider resistor powering the motor is used to adjust the cycle time.

Cams and switches:

The NO (Normally Open) or NC (Normally Closed) switches are triggered by the cams with two different cam profiles:

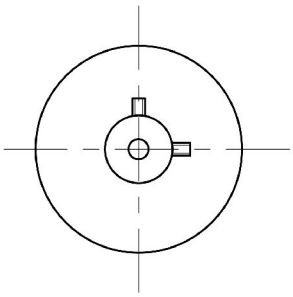


"A" profile: fixed angle

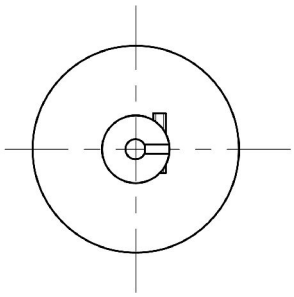


"B" profile: adjustable angle

Cams may be mounted in two different ways:



"A" type cam hub:
hub held to the shaft by 2 screws
(factory adjusted)



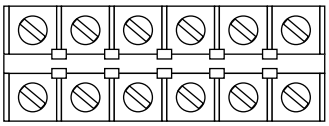
"B" type cam hub:
one piece clamping collar
(allows adjustments)

The cam type is specified by the letter of the profile type followed by the letter corresponding to the type of mounting; for example : A/A cam, adjustable B/A cam.

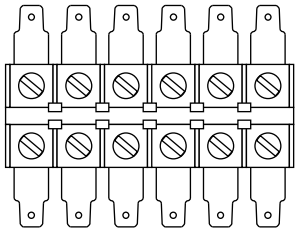
- **Terminal connections**:

Various types of terminal connections may be provided, the most common used are:

- screw terminal block: M3 screws



- faston terminal strip 6.35 mm or solder lug terminal strip



2 Series and Models

No standard models are available for motorized potentiometers or rheostats. A product can be ordered :

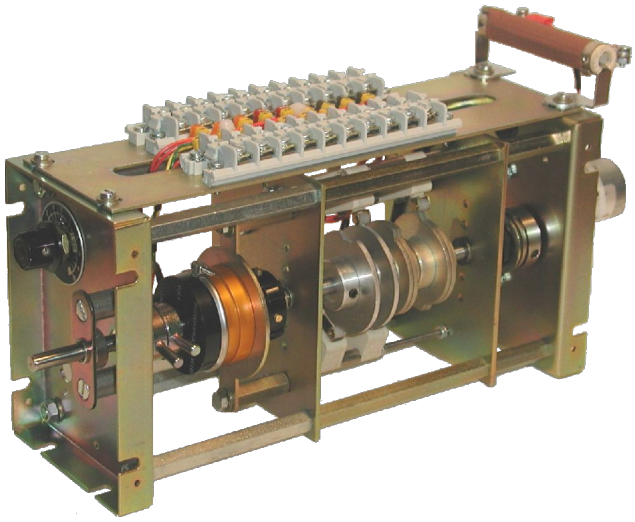
- to replace an old Coudoint module, with the Coudoint identification code of the part to be replaced, or by describing the part (picture, etc)
- in other cases, by providing the required specification (electrical travel, rotation speed, cycle time, electrical load definition, power supply voltage, etc). We will design a module according to your requirements and send you a commercial offer.

3 Examples of designs

3.1 Motorized Potentiometer with DC Motor

Open frame module including :
- a 24 V_{DC} gear-motor
- a precision wirewound potentiometer: SI15 model
- 4 rotary cam switches:
  - 1 start-of-travel switch / A/A profile cam
  - 1 end-of-travel switch / A/A profile cam
  - 2 contacts/adjustable B/A profile cam

The module is designed for:
- a rotation angle of 300° (adjustable)
- a cycle time between 42 to 60 seconds, adjustable by a voltage divider resistor with a T16 rotary rheostat

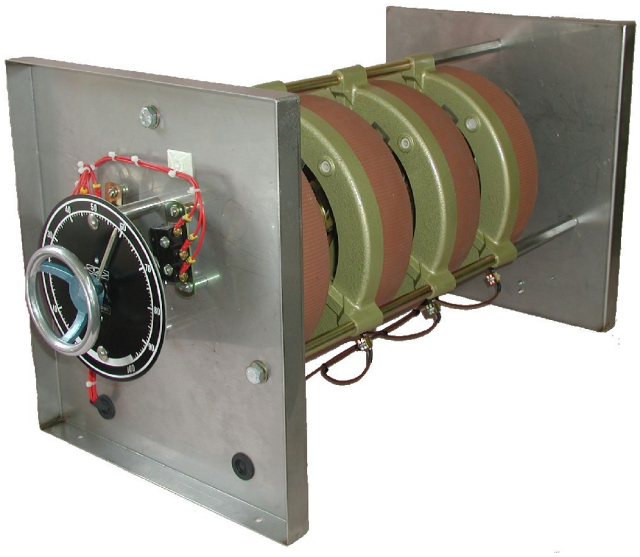


Shown model : TCSI15-1KC171

3.2 Motorized Tandem Rheostat with DC Motor

Open frame module including :
- a 24 V_{DC} gear-motor
- 2 tandem rheostat, connected in series
- 3 rotary cam switches:
  - 2 end-of-travel switches/special cam profiles
  - 3 beginning-of-travel switches/special cam profiles

The module is designed for :
- a rotation angle of 300° (adjustable)
- a cycle time between 15 and 30 seconds, adjustable by a voltage divider resistor with a RCA3 resistor



Shown model: TC4T300-50RC156

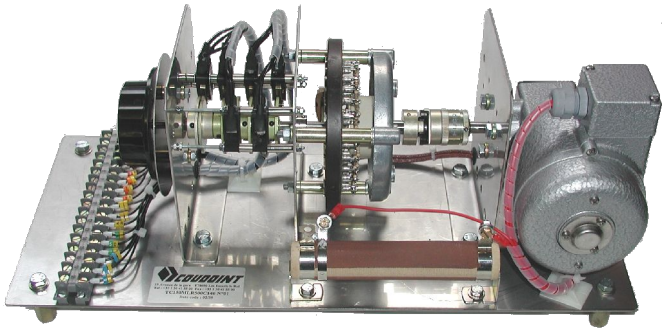
3.3 Motorized Rheostat with DC Motor

Open frame module including:

- a 125 V_{DC} gear-motor
- a rotary rheostat: T150 model
- 6 rotary cam switches:
  - 2 end-of-travel switches / A/A profile cam
  - 3 beginning-of-travel switches / A/A profile cam
  - 1 mid-travel switch/adjustable B/A profile cam

The module is designed for:

- a rotation angle of 300° (adjustable)
- a cycle time between 36 and 160 seconds, adjustable by a voltage divider resistor with a RCA6 model



Shown model: TCT150MLR500C146

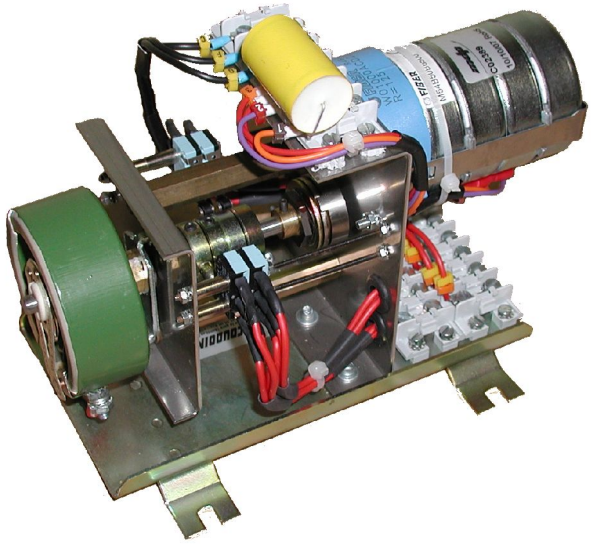
3.4 Motorized Rheostat with AC Motor

Open frame module including:

- a 230V_{AC} 50Hz single-phase gear-motor
- a silicon-coated rotary T50 rheostat
- 4 rotary cam switches:
  - 2 end-of-travel switches with A/A profile
  - 2 start-of-travel switches with A/A profile

The module is designed for:

- a rotation angle of 300°
- a fixed cycle time of 13 seconds



Shown model: SM50T50-10kC071

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