

# TOROIDAL RHEOSTATS AND POTENTIOMETER MODEL TC

## TECHNICAL DESIGN

FIG. 1

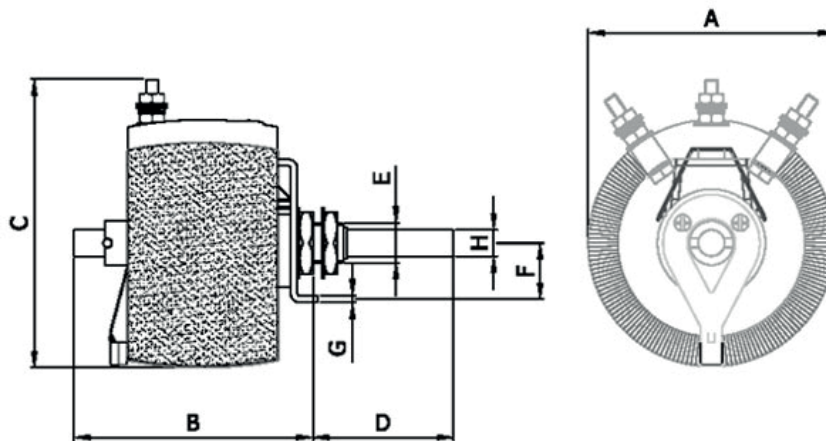
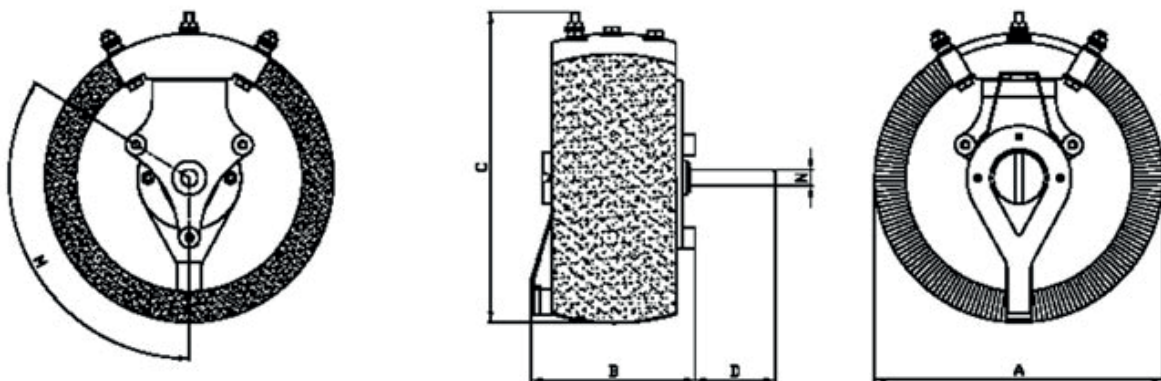
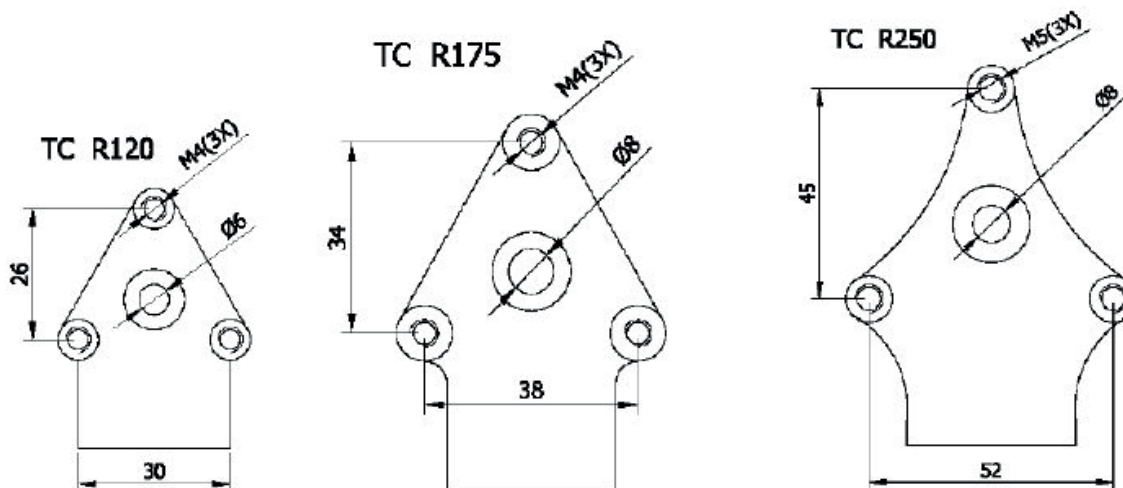


FIG. 2





TYPE		TC R25	TC R50	TC R80	TC R120	TC R175	TC R250
POWER RATING	W	25	50	80	120	175	250
MIN OHMIC VALUE	$\Omega$	1R	1R	1R	1R	1R	1R5
MAX OHMIC VALUE	$\Omega$	5K	10K	16K	20K	25K	30K
TOLERANCE OF RESISTANCE		$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$
MAX VOLTAGE	V	300	500	600	800	900	1000
ELECTRICAL ROTATION		280°	290°	293°	293°	295°	300°
MOUNTING		Central 9 MC	Central 9 MC	Central 9 MC	Three** Screws	Three Screws	Three Screws
DIMENSIONS		R25	R50	R80	R120	R175	R250
A	mm	40	56	68	90	110	140
B	mm	30	44	50	57	62	74
C	mm	50	68	80	100	125	153
D	mm	35	35	35	35	35	35
E		9 MC	9 MC	9 MC	//	//	//
F	mm	12	12	12	//	//	//
G	mm	2	2	2	//	//	//
H / N	mm	6	6	6	6	8	8
M		//	//	//	120°	120°	120°
Weight	Kg	0,09	0,18	0,28	0,42	0,72	1,3

\*\*The model R120 can be required with central mounting

## GENERAL FEATURES

These rheostats are designed for installation behind control panels and are of robust construction, with the ability to sustain considerable temporary accidental overloads.

The lightly spaced spiral winding, generally of constantan wire, is spiral wound on a ceramic toroid with lodgings for the various attachments.

The winding is covered with ceramic cement and successively fired in a kiln at 400° C.

The result is a single compact body capable of supporting the thermal stress consequential to its use.

On a track created on one of the ring bases, a sliding cursor made of a double sheet of phosphorous bronze or stainless steel foil runs, which makes the sliding contact.

The extremities of the winding are connected to the terminal bands, which are fixed with output terminals.

Any resistance value can be realised within the values indicated in the table.

## DIVISION INTO SECTIONS

When the adjustment ratio, namely the ratio between the maximum and minimum current, is high, the winding is divided into several sectors, realised with wires of various diameters.

A divided winding is also used when the law of conversion of the resistance must have a particular type of development as a function of the position of the cursor.

## COAXIAL RHEOSTAT GROUPS

Several rheostats may be assembled coaxially, uniting them with appropriate sheet metal squares. The various rheostats can each have a different function or be united serially or in parallel with a single adjustment.

## LOADS

Admissible loads are indicated in the table. The temperature graphs are shown as a function of the load and provide general indications as to the overload capacity of the rheostats when they have good ventilation.

## VENTILATION

If they are well ventilated, the rheostats can be greatly overloaded. Tests performed on various types of rheostats have shown that ventilation with air at »2.5 m/sec, directed according to the axis of revolution of the toroid, permits doubling of dissipated power.

## OPTIONAL

- Windings in sections
- Mounting several coaxial rheostats
- Application of one or more position micro switches
- Zero exclusion (interrupted)
- Special double extruding, square shaft design
- Continuous rotation
- Shaft blockage device
- Intermediate fixed socket

## SPECIFICATIONS FOR ORDER

For single section standard rheostats (adjustment ratio  $< 2$ ), specify the ohm value desired and the maximum current, or better yet, the model and ohm value.

For rheostats with several sections (max 5), it is necessary to indicate the total ohm value and the maximum currents (rheostat disengaged) and minimum current (rheostat entirely inserted).

Division of the resistance is generally performed with the hyperbolic law.

In the event a particular division of the resistance is required, it is sufficient to indicate the angle at the centre of each sector and the relative ohm value.