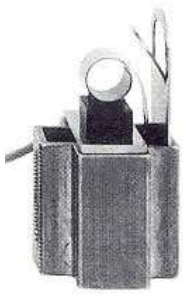
BINTPRES M50 probes
SM5 and SM5/F

BINTPRES M50 Brush Force Meter can be equipped with both SM5 or SM5/F probes, depending on application.



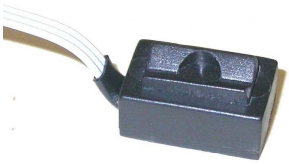
SM5 probe - standard probe

The measuring probe head, in order to allow the positioning of brush holder springs as precise and possible, is shaped as follows :

- "V" slot, 120° wide, suitable for curled constant force, or clock spiral with normal pressure finger, brush holder springs; the slot vertex has a higher geometrical level in respect to the probe body edge, in order to avoid that particularly wide and convex pressure finger can touch the above mentioned edge, so causing a false measure result (often occurring on brush holders for railways traction motors);
- central cylindric recess, with diameter 5 mm and depth 1,5 mm, for the positioning of cylindric pressure finger of helicoidal spiral brush holder springs.

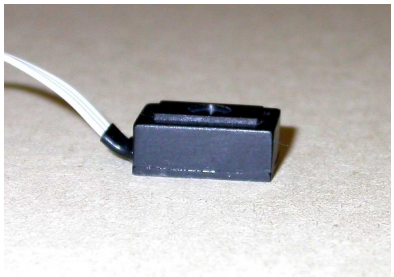
SM5/F probe - flat probe

For special application or depending of customer needs, the probe head is flat, without "V" slot and cylindircal recess, height of probe is less



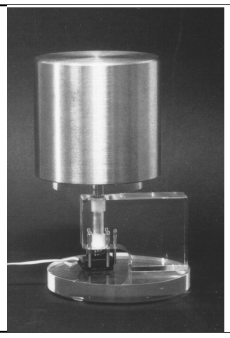
SM5 probe - standard probe

- "V" slot, 120° wide
- central cylindrical recess, with diameter 5mm and depth 1,5mm
- h total probe = 8 mm
- dimension 16 x 10 x 8 mm



SM5/F probe - flat probe

- without "V" slot and cylindrical recess
- h total probe = 7 mm
- dimension 16 x 10 x 7 mm



ST200 Calibration System

Probes are interchangeable previous instrument recalibration.
New recalibration can be made in factory or by the user, using the optional ST200 Calibration System, that is also used to periodically check the correct calibration and functionality of the probes.
ST200 Calibration System is supplied with 2 kg sample weight.

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NEW BINTPRES M50 METER OFFERS QUICK, ACCURATE, RELIABLE AND EASY MEASUREMENTS OF SPRING PRESSURE

THEORY AND PURPOSE

The brush force meter **BINTPRES M50** (patent no. 1190328208587) is a new microprocessed instrument, designed and manufactured by BINT, suitable for the rapid and precise measurement of the force applied by brush holder springs on the brushes of rotating electrical machines.
In the industrial rotating electrical machines (steel mill motors, railways traction motors, power plant generators and so on), to know the correct spring pressure is of capital importance for the efficiency of the electrical machines themselves, to avoid big and expensive damages to their commutators and/or slip rings.
The correct spring pressure is obtained by dividing the force of the brush holder spring by the area of the brush contact surface.
For example, if a pressure of 200 g/cmq should be applied to a brush of a certain grade, having the contact surface with section dimension 25 x 38 mm (9,5 cmq) the correct force that the brush holder spring should give to the brush will be 1,9 kg (9,5 cmq x 200 g/cmq = 1.900 g = 1,9 kg).
This is just the value which should be measured before the brush mounting, and which should be periodically checked.
Discordances plus/minus from the correct pressure value, prescribed for a certain brush grade, can cause serious problems, both to brushes and commutators or slip rings : sparking, brush breakage, excessive or uneven brush wear, increased commutator wear.
A preventive and periodical check of the mechanical force of brush holder spings is imposing by itself, in order to avoid heavy economical damages (other than the material ones) mainly due to commutator or slip ring turnings, frequent brush changes, periods of stopped machines, repercussion on production.

Main advantages in using the BINTPRES M50 are the accurate measurements up to +/- 1%, the easiness, rapidness and reliability of measurements, the advantages of the digital display with double kg and Newton readout, the Autozero automatical function.

GENERAL DESCRIPTION

New **BINTPRES M50** is a microprocessed instrument, with Autozero function, that permits easy, accurate and reliable measurements.
New **SM5 probes** are development to offer better accuracy, reliability and strength and are easly interchangeables.
The **BINTPRES M50** is a compact, rugged, small, lightweight, handly and simple to use instrument, with the following properties :
Double range in kilograms and Newton - Accuracy and reliability in measurements - Large dot matrix lcd display, for a perfect readability - Autozero function - Low battery indication on display - Message errors on display - New SM5 probes with new strain gauge bridge sensor built-in, for better accuracy, reliability and strength - Battery power supply, which allows the instrument to be used for a long time, also outside premises - Instrument case in anti shock plastic material - Interchangeable probes, previous quick and easy instrument recalibration - Carrying case as supplied accessory.
The **SM5** measuring probe has been made with an envelope of neonite, epoxidic thermosetting glass loaded material, electrically insulating, for which verifications on working machines are possible. Moreover its smallest sizes allow the probe insertion into brush holder boxes having section dimension from 12x20mm onwards or, through suitable technical contrivances, on any type of brush holder.
The measuring probe head, in order to allow the positioning of brush holder springs as precise and possible, is shaped as follows :
- "V" slot, 120°wide, suitable for curled constant force, or clock spiral with normal pressure finger, brush holder springs; the slot vertex has a higher geometrical level in respect to the probe body edge, in order to avoid that particularly wide and convex pressure finger can touch the above mentioned edge, so causing a false measure result (often occurring on brush holders for railways traction motors);
- central cylindric recess, with diameter 5 mm and depth 1,5 mm, for the positioning of cylindric pressure finger of helicoidal spiral brush holder springs;
- on request, a "flat" probe is supplied (SM5/F flat probe, without "V" and cylindrical recess).

The optional **ST200 Calibration System** permits to carry out a new instrument calibration when the probe is changed, and could be used to periodically checked the correct calibration of the probe.

TECHNICAL CHARACTERISTICS BINTPRES M50

RANGES	0,01 - 5,00 kg / 0,1 - 50,0 N.
ACCURACY	+/- 2% of full scale deflection, with force applied in the centre of the probe.
	+/- 1% within a windows of 2 kg, previous instrument calibration with sample weight.
RESOLUTION	10 g / 0,1 N.
DISPLAY	by means of dot matrix lcd display.
PROBE	miniaturized, plug connected, interchangeable, neonite envelope electrically insulating,
	head with "V" and cylindrical recess, new special strain gauge bridge sensor built-in.
POWER SUPPLY	4 x 1,5V battery (LR6 AA 1,5V).
DIMENSION	**-** instrument : 180 x 100 x 45 mm
	- probe SM5 (supplied standard probe) : 16 x 10 x 8 mm.
	- flat probe SM5/F (on request only) : 16 x 10 x 7 mm.
	- carrying case : 190 x 150 x 55 mm.
WEIGHT	instrument + SM5 probe + carrying case : 0,500 kg.
ACCESSORIES (supplied)	SM5 probe with lead and connecting plug, instruction manual, carrying case, 4x1,5V battery.
OPTIONAL ACCESSORIES	- ST200 Calibration System with 2 kg sample weight.
	- SM5 spare probe (standard, with "V" and cylindrical recess).
	- SM5/F flat spare probe (on request only, without "V" and cylindrical recess).

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