

Sealed and ruggedised panel indicators

FEATURES

- Designed specifically for stringent industrial, marine and military specifications
- An extensive range of high accuracy measuring instruments in 3 case sizes
- Rugged Hi-Q taut-band suspension
- Bump, shock and vibration proof

APPROVALS

CE Approved

BENEFITS

- Complies with BS EN60051 (IEC51)
- IP67 (NEMA 6 and 6P) protection
- Dial illumination option
- Parallax error-free platform dials for 078/087. Optional for 083/084



Model 087

APPLICATIONS

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Utility power monitoring
- Process control
- Motor control
- Marine
- Military



MODEL 087

078/080/087 SERIES 240° SCALE

The Crompton Instruments 078/080/087 series of heavy duty sealed instruments are designed to comply with the most stringent industrial, marine and military specifications.

This metal cased range offers bezel sizes of 57 mm, 83 mm and 110 mm all fitted with toughened glass. Indicators and operate efficiently in the most adverse environments where extreme conditions of shock, vibration, dirt, humidity and temperature variation are present.

DESCRIPTION

Indicators have metal cases with bezel sizes of 50 x 57 mm (083), 83 mm Ø (084) and 110 mm x 100 mm (078/087). All indicators are fitted with toughened glass windows. The standard black matt finish can be replaced with options ranging from light admiralty grey to BS3181C No:697. To prevent fogging, all indicators have been dried, evacuated and filled with dry nitrogen during manufacturing. The case interior retains a constant pressure of at least 94kPa above the exterior with leakage not above the equivalent of 1.33 Pa ml/s of air. Except on model 083, panel sealing gaskets are standard equipment.

Standard instrument dials are finished in acrylic white matt with black printing and a parallel pointer. Scales form a true arc with zero on the left hand-side. Options include dial illumination, a centre, off-set or suppressed zero, colour index lines, bands, zones or segments, a black dial with white printing, and customer *logo*.

SPECIFICATIONS

Performance	BS EN60051 (IEC51)
Accuracy	Refer to Product Range table
Scaling	BS89, BS3693
Dielectric test	2kV RMS to BS EN61010-1
Overloads	x 1.2 rated current for 2 hours x 10 rated current for 5 seconds x 1.2 rated voltage for 2 hours x 2 rated voltage for 5 seconds
Enclosure code	IP67 (NEMA 6 and 6P)
Case	Black matt metal filled with dry nitrogen
Bezel	Black matt metal. Optional admiralty grey No. 697
Bezel window	Toughened glass
Operating temperature	-40°C to +70°C (-40°F to +158°F)
Storage temperature	-55°C to +85°C (-67°F to +185°F)
Standard calibration	23°C (73°F)
Approvals	EMC and LVD



MODEL 083



MODEL 084



MODEL 078

Sealed and ruggedised panel indicators

078/080/087 SERIES 240° SCALE

PRODUCT RANGE

Type of instrument	Ranges	Accuracy class	Burden VA	Case code depth behind the bezel				Product code
DC ammeter shunt operated	50, 60, 75, 100, 150 mV	2.5	See T118***	57	-	-	-	083-05A
DC ammeter shunt operated	50, 60, 75, 100, 150 mV	1.5	See T118***	-	59	-	-	084-05A
DC ammeter shunt operated	50, 60, 75, 100, 150 mV	1.5	See T118***	-	-	86	-	078-05A
DC ammeter shunt operated	50, 60, 75, 100, 150 mV	1.5	See T118***	-	-	-	86	087-11A
DC ammeter	200 µA-30 A	2.5	See T118***	57	-	-	-	083-05A
DC ammeter	200 µA-30 A	1.5	See T118***	-	59	-	-	084-05A
DC ammeter	200 µA-30 A	1.0	See T118***	-	-	86	-	078-05A
DC ammeter	200 µA-30 A	1.0	See T118***	-	-	-	86	087-11A
DC ammeter suppressed zero	4/20 mA	2.5	See T118***	57	-	-	-	083-05R
DC ammeter suppressed zero	4/20 mA	1.5	See T118***	-	59	-	-	084-05R
DC ammeter suppressed zero	4/20 mA	1.5	See T118***	-	-	86	-	078-05R
DC ammeter suppressed zero	4/20 mA	1.5	See T118***	-	-	-	86	087-11R
DC voltmeter	50 mV-600 V	2.5	See T118***	57	-	-	-	083-05V
DC voltmeter	50 mV-600 V	1.5	See T118***	-	59	-	-	084-05V
DC voltmeter	50 mV-800 V	1.5	See T118***	-	-	86	-	078-05V
DC voltmeter	50 mV-800 V	1.0	See T118***	-	-	-	86	087-11V
DC voltmeter suppressed zero	1/5 V	1.5	See T118***	-	-	86	-	078-05S
DC voltmeter suppressed zero	1/5 V	1.5	See T118***	-	-	-	86	087-11S
AC rectified ammeter	200 µA-1 A	2.5	See T118***	57	-	-	-	083-05B
AC rectified ammeter	200 µA-1 A	2.5	See T118***	-	59	-	-	084-05B
AC rectified ammeter	200 µA-30 A	1.5	See T118***	-	-	86	-	078-05B
AC rectified ammeter	200 µA-30 A	1.5	See T118***	-	-	-	86	087-11B
AC rectified voltmeter	15 - 600 V 25 Hz/3 kHz	2.5	See T118***	57	-	-	-	083-05W
AC rectified voltmeter	15 - 600 V 25 Hz/3 kHz	2.5	See T118***	-	59	-	-	084-05W
AC rectified voltmeter	15 - 600 V 25 Hz/3 kHz	1.5	See T118***	-	-	86	-	078-05W
AC rectified voltmeter	15 - 600 V 25 Hz/3 kHz	1.5	See T118***	-	-	-	86	087-11W
Elapsed time meter	50 or 60 Hz, 100-400 V*			57	-	-	-	083-155 or 156
Elapsed time meter	12, 24 V DC			57	-	-	-	083-151
Elapsed time meter	50 or 60 Hz, 100-400 V*			-	59	-	-	084-155 or 156
Elapsed time meter	12, 24 V DC			-	59	-	-	084-151
Elapsed time meter	50 or 60 Hz, 100-400 V*			-	-	86	-	078-155 or 156
Frequency meter	50/60/400 Hz 100-440 V*	0.5%	4	57	-	-	-	083-41S
Frequency meter	50/60/400 Hz 100-440 V*	0.5%	4	-	59	-	-	084-41S/089-41S
Frequency meter	50/60/400 Hz 100-440 V*	0.5%	4	-	-	86	86	078/087-41L
Temperature indicator	RTD	1.5	See T118***	-	-	86	-	078-45 R
Wattmeter or Varmeter	0.2 - 10 A/100-440 V*	Balanced	Current	-	-	132	132	078/087-21 or 31
Transducer operated indicator	1, 5, 10, 20 or 4/20 mA	1.0	See T118***	57	-	-	-	083-05
Transducer operated indicator	1, 5, 10, 20 or 4/20 mA	1.0	See T118***	-	59	-	-	084-05
Transducer operated indicator	1, 5, 10, 20 or 4/20 mA	1.0	See T118***	-	-	86	-	078-05
Transducer operated indicator	1, 5, 10, 20 or 4/20 mA	1.0	See T118***	-	-	-	86	087-11

* 100 - 440 V = (100/125, 200/250, 380/440).

*** The T118 technical sheet is available on request.

Sealed and ruggedised panel indicators



MODEL 083

O80 SERIES 90° SCALE

A range of metal case, sealed instruments for industrial and military applications involving extreme shock, vibration, temperature, dirt and humidity. Bezel sizes 57 mm, 83 mm

DESCRIPTION

Two bezel sizes of 57 x 57 mm (O83) and 83 mm Ø (O84), with barrel diameters of 53 mm (O83) and 67 mm (O84) and toughened glass windows are used throughout the series. To avoid fogging they are dried, evacuated and filled with dry nitrogen. Panel sealing gaskets are provided as standard with the exception of Model O83. Models O83 and O84 have steel cases with fixing holes in the flange. Sealed zero adjusters are provided. Standard instrument dials are finished in a white matt with black printing and parallel pointer. The scales form a true arc with zero on the left.

OPTIONS

Available options include dial illumination, a centre, off-set or suppressed zero, colour index lines, bands, zones or segments, a black dial with white printing and customer logo. Instruments operated by separate transducers indicate watts, VAR, frequency, phase angle, current, voltage and other physical/mechanical parameters are also available. Illumination options as follows:

Models O83/O84: Edge, white or red bulb, 12 or 24 V, illumination.

SPECIFICATIONS

Performance	BS EN60051 (IEC51).
Accuracy	Class 2.5 frequency meter 0.5% of mid frequency
Scaling	To BS89, BS3693
Dielectric test @ 50 Hz	2 kV RMS; <50 V 500 V RMS All for 1 minute
Overloads	x1.2 rated current or voltage for 2 hours. x 10 rated current for 5 seconds. x2 rated voltage for 5 seconds
Burden	AC ammeter: 1 VA maximum. AC voltmeter: 3 VA maximum
Frequency meter	4 VA maximum
Elapsed time meter	2.5 VA maximum
Enclosure code	IP67 (NEMA 6 and 6P)
Case	Black matt metal filled with dry nitrogen
Bezel	Black matt metal
Bezel window	Toughened glass
Operating temperature	-40°C to +70°C (-45F to +158°F)
Standard calibration	23°C (73°F)
Approvals	EMC and LVD.



MODEL 084

PRODUCT RANGE

Type of instrument	Ranges	Accuracy class	Burden VA	Depth	Diameter Dimension	Product code
AC ammeter moving iron	1 - 30 A	2.5	1.0	37.6	53	083-75A
AC voltmeter moving iron	5 - 300 V	2.5	3.0	37.6	53	083-75V
DC ammeter shunt operated	50, 60, 75, 100, 150 mV	2.5	1.0	33.6	53	083-80A
DC ammeter shunt operated	50, 60, 75, 100, 150 mV	2.5	1.0	33.5	67	084-80A
DC ammeter	50 µA-30 A	2.5	1.0	33.6	53	083-80A
DC ammeter	50 µA-30 A	2.5	1.0	33.5	67	084-80A
DC ammeter suppressed zero	4/20 mA	2.5	1.0	33.6	53	083-80R
DC ammeter suppressed zero	4/20 mA	2.5	1.0	33.5	67	084-80R
DC voltmeter	50 mV-300 V, 1000 Ω/V	2.5	2.0	33.6	53	083-80V
DC voltmeter	50 mV-300 V	2.5	2.0	33.5	67	084-80V
DC voltmeter suppressed zero	1/5 V	2.5	2.0	33.5	67	084-80S
AC rectified ammeter	100 µA-500 mA.25 Hz/3 kHz	2.5	3.0	33.6	53	083-80B
AC rectified ammeter	100 µA-500 mA.25 Hz/3 kHz	2.5	3.0	33.5	67	084-80B
AC rectified voltmeter	15 - 600 V, 900 Ω/V	2.5	3.0	33.6	53	083-80W
AC rectified voltmeter	15 - 600 V	2.5	3.0	33.5	67	084-80W
Elapsed time meter (99999.9)	12 or 24 V DC	2.5	3.0	33	53 / 67	082/083/084-151
Elapsed time meter (99999.9)	50 Hz/100-440 V*	2.5	2.5	33	53 / 67	083/084-155
Elapsed time meter (99999.9)	60 Hz/100-440 V*	2.5	2.5	33	53 / 67	083/084-156
Frequency meter	50 or 60 or 400 Hz/100-440 V*	2.5	4.0	33.6	53	083-41S
Frequency meter	50 or 60 or 400 Hz/100-440 V*	2.5	4.0	33.5	67	084-41S
Transducer indicator speed	1, 5, 10, 20, and 4/20 mA	2.5	1.0	33.5	67	084-802
Transducer indicator frequency	1, 5, 10, 20, and 4/20 mA	2.5	1.0	33.5	67	084-803
Transducer indicator phase angle	1, 5, 10, 20, and 4/20 mA	2.5	1.0	33.5	67	084-804
Transducer indicator watts	1, 5, 10, 20, and 4/20 mA	2.5	1.0	33.5	67	084-805
Transducer indicator VARs	1, 5, 10, 20, and 4/20 mA	2.5	1.0	33.5	67	084-806
Transducer indicator VA	1, 5, 10, 20, and 4/20 mA	2.5	1.0	33.5	67	084-807

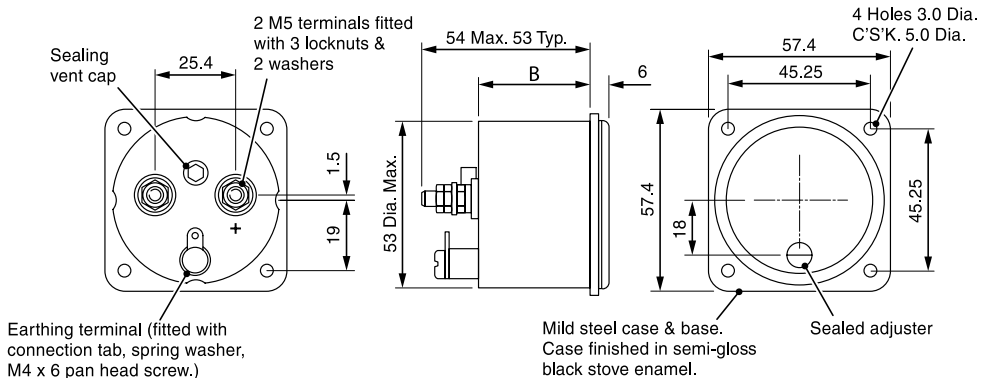
*100-440V - (100/125 or 200/250 or 380/440).

Sealed and ruggedised panel indicators



MODEL 083

DIMENSIONS
Model 083

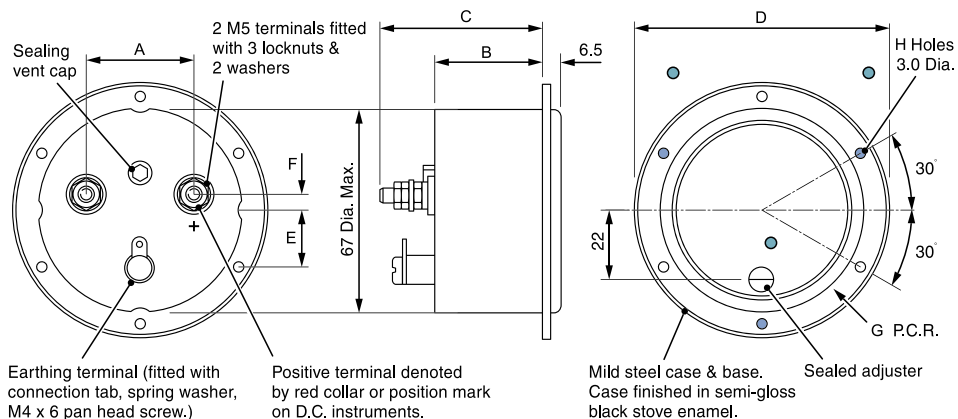


	B
083-80	33.6
083-75	37.6

Model 084



MODEL 084



*When fitted with terminal shunt for ranges above 20 amps.

	A	B	C	D	E	F	G	H
084-80	35	33.5	59	82.5	20	5	36.5	6 off
084-75	35	38	64	82.5	20	5	36.5	6 off

Panel Cut out 68.3ø - Holes 3.8ø
 These ● holes on 084 only.

