LED Digital | Analog Combination

Crompton Instruments model 007-DI features a combination of the traditional 250° 4 1/2" switchboard indicator with the trend indication plus the benefits of wide angle LED visibility. This rugged shock and vibration resistant design provides precision accuracy and instantaneous reading via the bright in-dial mounted 3 1/2" digit LED display.

Description

Model 007-DI digital analog indicators are ideal for all applications where moving pointer instruments are preferable to indicate trend with the simultaneous display of a high visibility precision LED readout for increased user interface.

The 007-DI is interchangeable with other analog and digital instruments designed to directly mount in to a standard ANSI-C39. 4 1/2" switchboard cut-out.

Available in Left Zero or Center Zero versions

Features

- Rugged shock and vibration resistant pivot and jewel design
- High accuracy LED display
- Wide selection of AC and DC inputs
- Maximum trend indication visiblity
- Input isolation
- External decimal point selction option
- Interchangeable with 4 1/2" switchboard meters

Benefits

- Cost effective
- Meets all the requirement of ANSI-C39.1 (1981)
- IP54 (NEMA 3) protection

cUL Approved E203000 (1A ac to 10A ac, 200mv-300v ac/dc

- Bump, shock and vibration proof
- Customized option and features

Applications

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Energy management
- Building management
- Utility power monitoring
- Process control
- Motor control

Specifications

Inputs	DC Voltage: 20mV-600V (1MΩ input impedance as standard) DC Current: 1mA-1A, 4 to 20mA (Voltage drop 200mV nominal) External shunt operation (50mV and 100mV) AC Voltage: 150 V-600V (1 kΩ /volt) AC Current: 1mA-999mA (Using internal shunt, voltage drop 200mV nominal) 1A, 2A, 5A and 10A using internal current transformer
Common mode rejection	=>80dB @ 50/60Hz
Overload	Voltage: x 1.2 continuous. x 1.5 for 10 seconds Current using internal CT: x 1.2 continuous. x 10 for 10 seconds
External power requirement	Standard: 120 and 240V 315% Optional: 480V 315% AC 40-60Hz
Burden	3VA @ 60Hz
DC	Standard: 12, 24, 48, 110 and 125V ±15%
Display analog	Long-scale moving coil. 250° deflection. Scale length 6.8" Response time less than 2.5 seconds
Display options	offset zero. Scale plate in colors other than white Colored lines or segments on scale
Digital display	3 1/2 digit red LED. 7 segment (7.6mm, 0.3" high). Right hand decimal points. Polarity indication: positive / none. Negative / horizontal bar " - ". Update time (standard): 1 per second
Accuracy - analog	DC and AC ±1% of FSD (calibrated at 25°C)
Accuracy - digital	DC: ±0.05% of reading ±1 count ±100ppm of reading / °C max AC current: 0-1 Amp ±0.1% reading ±3 counts ±150ppm of reading / °C AC current: 0-10 amps 30.1% reading 310 counts 3150ppm of reading / °C (maximum) AC voltage: ±0.1% of reading ±3 counts ±150ppm of reading / °C (maximum) Zero ±1 count ±0.2 counts/°C (maximum), DC offset scale only. Warm-up time: 1 minute
Long term stability	±2 counts
Calibration check	Recommended 12 monthly intervals
Enclosure code	IP54 (optional IP55 using panel gasket)
Operational temperature	0 to 60°C (32° - 140° F)
Storage temperature	-20° to 60°C (-4° - 140° F)
Humidity	Up to 90% relative @ 55° C. Tests to BS2011 part 2DA
Isolation test voltage	2kV RMS 60Hz for 1 minute
Interference rejection	To IEEE STD472, ANSI C37 90A, SEN 361503, IEC 255-4

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LED Digital | Analog Combination

Product Codes – AC Voltmeters - Direct Reading 50/60 Hz

Digital accuracy ±0.1% ±3 counts, analog accuracy ±1%

Rating	Scaling*	Catalog number
150V	0-150V	007-DIWA-PZPZ-C7-**
250V	0-250V	007-DIWA-RSRS-C7-**
300V	0-300V	007-DIWA-RXRX-C7-**
500V	0-500V	007-DIWA-SFSF-C7-**
600V	0-600V	007-DIWA-SJSJ-C7-**

**=AUXILIARY, ENTER A5=100-250 V AC/DC, OR A2=12-48 V DC

For connection diagrams, refer to Figure H.

Product Codes – AC Voltmeters Transformer Rated 50/60 Hz

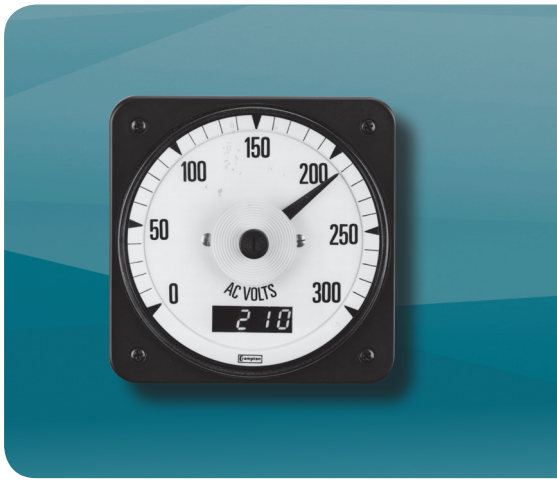
Rating	Scaling*	Catalog number
150V	0-300V	007-DIWA-PZRX-C7-**
150V	0-600V	007-DIWA-PZSJ-C7-**
150V	0-750V	007-DIWA-PZSM-C7-**
150V	0-3000V	007-DIWA-PZUA-C7-**
143V	0-5000V	007-DIWA-PTUJ-C7-**
150V	0-5250V	007-DIWA-PZUL-C7-**
150V	0-6000V	007-DIWA-PZUP-C7-**
150V	0-9000V	007-DIWA-PZUY-C7-**
150V	0-15kV	007-DIWA-PZWC-C7-**
150V	0-18kV	007-DIWA-PZWD-C7-**
150V	0-45kV	007-DIWA-PZWJ-C7-**
150V	0-60kV	007-DIWA-PZWL-C7-**

**=AUXILIARY, ENTER A5=100-250 V AC/DC, OR A2=12-48 V DC

For connection diagrams, refer to Figure H.

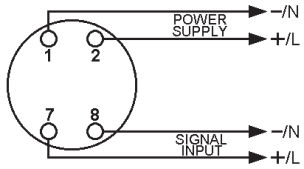
* Other scalings are available.

*** Case types 007 use 10-32 UNF terminals.



AC Voltmeter

Fig. H Models 007-DI2, 007-DIA
007-DIB,
007-DIT, 007-DIV, 007-DIW
LED Digital/Analog Meter



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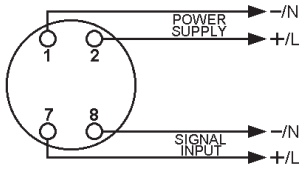
AC Ammeter

Fig. I Models 007-DI2, 007-DIA
007-DIB,
007-DIT, 007-DIV, 007-DIW
LED Digital/Analog Meter



LED Digital | Analog Combination

Product Codes – AC Ammeters - Direct Reading 50/60 Hz

Rating	Scaling*	Catalog number
1A	0-1A	007-DIBA-LALA-C7-**
1.5A	0-1.5A	007-DIBA-LCLC-C7-**
2A	0-2A	007-DIBA-LELE-C7-**
3A	0-3A	007-DIBA-LJLJ-C7-**
5A	0-5A	007-DIBA-LSLS-C7-**
8A	0-8A	007-DIBA-MJMJ-C7-**
10A	0-10A	007-DIBA-MTMT-C7-**

**=AUXILIARY, ENTER A5=100-250 V AC/DC, OR A2=12-48 V DC

For connection diagrams, refer to figure I

* Other scalings are available.

*** Case types 007 use 10-32 UNF terminals.

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LED Digital | Analog Combination

Product Codes – AC Ammeters Transformer Rated 50/60 Hz

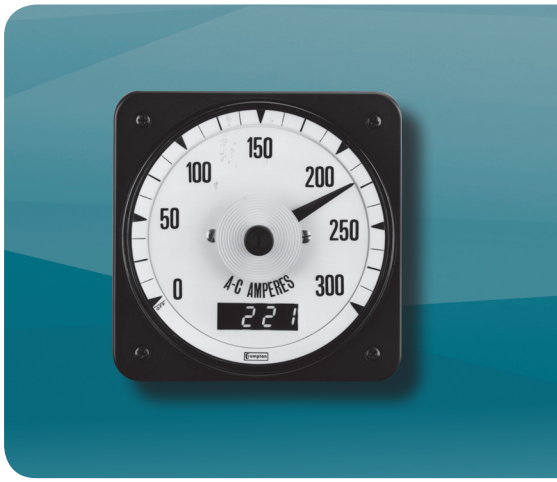
Digital accuracy ±0.1% ±1 counts, analog accuracy ±1%

Rating	Scaling*	Catalog number
5A	0-15A	007-DIBA-LSND-C7-**
5A	0-20A	007-DIBA-LSNG-C7-**
5A	0-25A	007-DIBA-LSNJ-C7-**
5A	0-30A	007-DIBA-LSNL-C7-**
5A	0-40A	007-DIBA-LSNP-C7-**
5A	0-50A	007-DIBA-LSNT-C7-**
5A	0-60A	007-DIBA-LSNW-C7-**
5A	0-75A	007-DIBA-LSPB-C7-**
5A	0-80A	007-DIBA-LSPD-C7-**
5A	0-100A	007-DIBA-LSPK-C7-**
5A	0-150A	007-DIBA-LSPZ-C7-**
5A	0-200A	007-DIBA-LSRL-C7-**
5A	0-250A	007-DIBA-LSRS-C7-**
5A	0-300A	007-DIBA-LSRX-C7-**
5A	0-400A	007-DIBA-LSSC-C7-**
5A	0-500A	007-DIBA-LSSF-C7-**
5A	0-600A	007-DIBA-LSSJ-C7-**
5A	0-750A	007-DIBA-LSSM-C7-**
5A	0-800A	007-DIBA-LSSN-C7-**
5A	0-1000A	007-DIBA-LSSS-C7-**
5A	0-1200A	007-DIBA-LSSU-C7-**
5A	0-1500A	007-DIBA-LSTC-C7-**
5A	0-1600A	007-DIBA-LSTE-C7-**

**=AUXILIARY, ENTER A5=100-250 V AC/DC, OR A2=12-48 V DC

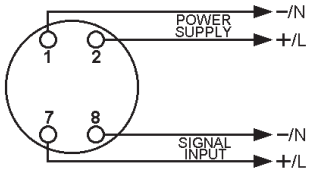
For connection diagrams, refer to Figure J.

* Other scalings are available.



AC Ammeter

Fig. J Models 007-DI2, 007-DIA
007-DIB,
007-DIT, 007-DIV, 007-DIW
LED Digital/Analog Meter



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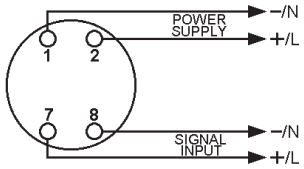
DC Voltmeter

Fig. K Models 007-DI2, 007-DIA
007-DIB,
007-DIT, 007-DIV, 007-DIW
LED Digital/Analog Meter



LED Digital | Analog Combination

Product Codes – DC Voltmeters - Direct Reading

Digital accuracy ±0.5% ±1 counts, analog accuracy ±1%

Rating	Scaling*	Catalog number
200mV	0-200mV	007-DIVA-KAKA-**
250mV	0-250mV	007-DIVA-KDKD-**
500mV	0-500mV	007-DIVA-KMKM-**
1V	0-1V	007-DIVA-LALA-**
5V	0-5V	007-DIVA-LSLS-**
10V	0-10V	007-DIVA-MTMT-**
15V	0-15V	007-DIVA-NDND-**
30V	0-30V	007-DIVA-NLNL-**
50V	0-50V	007-DIVA-NTNT-**
75V	0-75V	007-DIVA-PBPB-**
80V	0-80V	007-DIVA-PDPD-**
150V	0-150V	007-DIVA-PZPZ-**
300V	0-300V	007-DIVA-RXRX-**
400V	0-400V	007-DIVA-SCSC-**
500V	0-500V	007-DIVA-SFSF-**
600V	0-600V	007-DIVA-SJSJ-**

**=AUXILIARY, ENTER A5=100-250 V AC/DC, OR A2=12-48 V DC

For connection diagrams, refer to Figure K.

* Other scalings are available.

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LED Digital | Analog Combination

Product Codes – DC Ammeters - Shunt Rated

Digital accuracy ±0.5% ±1 counts, analog accuracy ±1%

Rating	Scaling*	Catalog number
50mV	Scaled to suit standard shunt ratings	007-DIAA-EY* -**
50-0-50 mV 100-0-100 mV Special Inputs Center Zero		007-DICA-GB*-** 007-DICA-GM*-** 007-DICA-*-**

For connection diagram, refer to Figure L.

*=STATE SCALING
**=AUX SUPPLY, enter A5=100-250 v ac/dc, or A2=12-48 v DC

Product Codes – DC Ammeters - Suppressed Zero

Digital accuracy ±0.5% ±1 counts, analog accuracy ±1%

Rating	Scaling*	Catalog number
4-20mA	Scaled to suit standard shunt ratings	007-DIAA-HG* -**

For connection diagram, refer to Figure L.

*= STATE SCALING
**=AUX SUPPLY, enter A5=100-250 v ac/dc, or A2=12-48 v dc

Product Codes – DC Ammeters - Direct Reading

Digital accuracy ±0.5% ±1 counts, analog accuracy ±1%

Rating	Scaling*	Catalog number
1mA	0-1mA	007-DIAA-FAFA-**
2mA	0-2mA	007-DIAA-FGFG-**
5mA	0-5mA	007-DIAA-FXFY-**
10mA	0-10mA	007-DIAA-GZGZ-**
20mA	0-20mA	007-DIAA-HFHF-**
30mA	0-30mA	007-DIAA-HMHM-**
50mA	0-50mA	007-DIAA-HYHY-**
100mA	0-100mA	007-DIAA-JRJR-**
200mA	0-200mA	007-DIAA-KAKA-**
300mA	0-300mA	007-DIAA-KGKG-**
500mA	0-500mA	007-DIAA-KMKM-**
800mA	0-800mA	007-DIAA-KWKW-**
1A	0-1A	007-DIAA-LALA-**

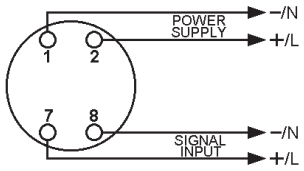
**=AUX SUPPLY, enter A5=100-250 v ac/dc, or A2=12-48 v dc

For connection diagram, refer to Figure L.

* Other scalings are available.

DC Ammeter

Fig. L Models 007-DI2, 007-DIA
007-DIB,
007-DIT, 007-DIV, 007-DIW
LED Digital/Analog Meter



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ANSI Switchboard Meters

High quality range of switchboard instruments with Class 1 accuracy and which complies with American ANSI-C39.1 (1981) specifications. Available in 4 1/2" case size, the rugged design characteristics meet the needs of the most demanding environmental applications. This extensive range of analog and digital/analog meters utilizes high shock and provides 1% accuracy for all RMS AC and DC ranges. The range offers various customized options and features.

Description

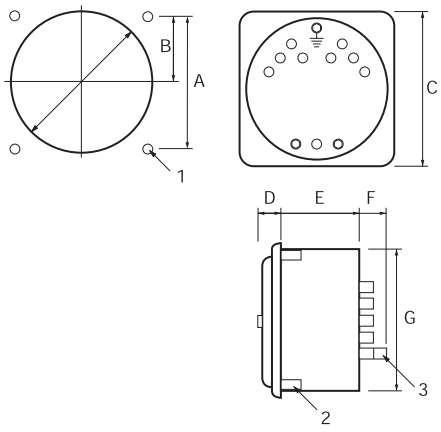
Our Switchboard Meter series offers two case types; models 007 and 078.

Model 078 is high shock hermetically sealed and all models have heavy gauge pressed steel cases. Mounting is by four integral studs. Model 078 has a die-cast bezel and a projecting moulded toughened glass window, which incorporates a gas tight zero adjuster.

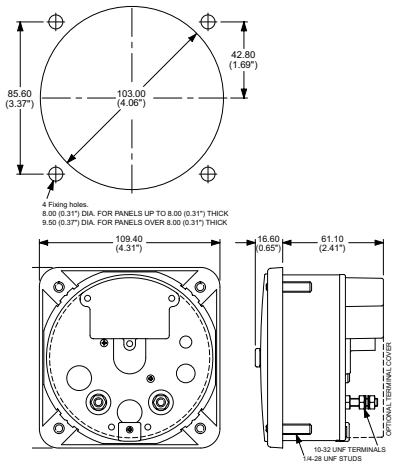
Model 007 is a one piece flame retardant polycarbonate moulding with a black matte finished bezel area, and a specially contoured window to minimize reflection from adjacent light sources.

Scales are 240° moving iron and 250° moving coil with parallax error-free platform dials. Standard dials are white matte with black printed scales and bar knife-edge pointers.

007 Power and 078



007 AMPs | Volts | Frequency Only



Specifications

Performance	ANSI C39.1 (1981)
Accuracy	Class 1
Terminals	10 - 32 UNF terminals
Response time	Approximately 2.5 seconds to full scale (007 and 078)
Dielectric voltage	Withstand test 2.3 kV for 1 minute
Standard calibration	23°C
Operating temperature	0°C to +60°C. Model 078: -40°C to +70°C
Storage temperature	-10°C to +50°C
Extreme temperature range	-20°C to +65°C
Enclosure integrity	Model 007 to IP54 (NEMA 3S) splash proof, Model 078 to IP67 (NEMA 6 and 6P)
Fixing on panel	4 integral 1/4 -28 UNF fixing studs
Certifications	c-UL-us, CE Model 078:CE only

Dimensions (in inches)

Model	Panel Cutout			Rear View		Side View		
	Dia	A	B	C	D	E	F	G
007 (Amps, Volts & Freq.)	4.06	3.37	1.69	4.31	0.65	2.41	-	4.05
007 Others	4.06	3.37	1.69	4.31	0.65	-	0.91	4.05
078	4.06	3.37	1.69	4.31	0.63	-	0.91	4.05

Dimension E on 007 others and 078 products varies with measured parameter. See product code on following page.

Dimension F on 078 (Amps, Volts & Freq.) products is included with dimension E.

1-4 Fixing holes Ø 8mm. 2-1/4-28 UNF fixing studs. 3-10-32 UNF terminals.

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Features
- Rugged pivot and jewel movement
- Class 1 accuracy

Benefits
- Meets all the requirements of ANSI-C39.1 (1981)
- Parallax error-free platform dials
- Bump, shock and vibration proof
- Customized options and features

Applications
- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Energy management
- Building management
- Utility power monitoring
- Process control
- Motor control

Certifications

Model 078- CE only

Type of instrument	Ranges	Dimension E		Product code
		007	078	
AC rectified ammeter	1 - 30A	56	86	007/078-05B
AC rectified voltmeter	30 - 800V	56	86	007/078-05W
AC RMS ammeter	1 - 30A	56	86	007/078-05F
AC RMS voltmeter	150 - 750V	56	86	007/078-05G
Elapsed time meter (99999.99)	50 or 60Hz / 100 - 440V* and DC	56	56	007/078-155/156
Frequency meter	50, 60	56	56	007/078-41L
AC wattmeter or VArmeter	0.2 - 10A/100 - 440V*	86	86	007/078-21 or 31
LED synchroscope only	63.5 - 480V****	86	-	077-14A
LED synchroscope and synchro check relay	63.5 - 480V****	86	-	077-14 L/G/D/U
Phase sequence indicator	100 - 150, 151 - 300, 301 - 500V	56	-	077-12P
Transducer operated indicator	1, 5, 10, 20, or 4/20mA	56	56	007/078-05
DC ammeter moving coil	200QA - 30A 56	56	56	007/078-05A
DC voltmeter moving coil	50mV - 600V 56	56	56	007/078-05V
240° phase angle | power factor	1 or 5A, 100 - 400V, 50, 60	86	86	007/078-42
DIGI/Analog AC ammeter	1mA - 10A	86	-	007-DIB
DIGI/Analog AC voltmeter	200mV - 600V	86	-	007-DIW
DIGI/Analog DC ammeter	1mA - 1A	86	-	007-DIA
DIGI/Analog DC voltmeter	20mV - 600V	86	-	007-DIV
DIGI/Analog transducer indicator	DC mA	86	-	007-DIT
DIGI/Analog tachometer	AC or DC rated	86	-	007-DI2

* 100-440V = (100/125, 200/250, 380/440).
**100-440V = (100/125, 200/250, 380/440). Frequencies 45/55, 55/65, 45/65, 46/54, 50/70, 58/62, 56/64.
****Nominal voltage to be specified.

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Switchboard Meter Options

Product Codes – Power Supply

Power Supplies

A2 = auxiliary 12-48 V DC
A5 = auxiliary 100-250 V ac/DC

Scale – Options

Options	Option code
Red or colored line or mark (specify position)	SL
Colored zones or segments (specify limits and color(s))	SZ

Construction – Options

Options	Option code
Polychloroprene panel gasket	MG

The suffix option code is added at the end of the complete part number.

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