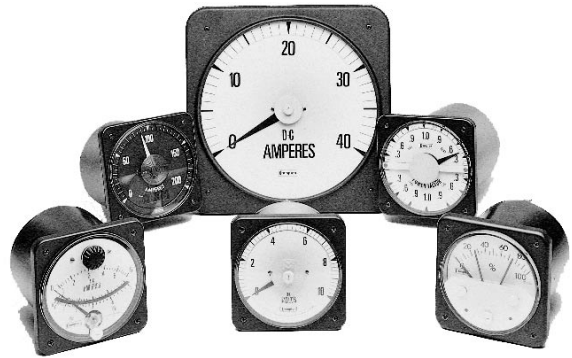


This high quality range of Switchboard instruments complies with the American specification ANSI-C39.1 (1981) accuracy class 1.

Available in two case sizes, their rugged design characteristics suit the most demanding of environmental applications.



## Approvals

- **UL Approved**  
File No: E87815
- **CSA Approved**  
File No: LR99712-1
- **ABS American Bureau of Shipping approved**
- **ISSEP Institute Scientifique de Service Public approved**

## Description

Two case sizes, 4 1/2" (075, 077 & 078) and 9" (079) - 4 1/2" (078) is high shock hermetically sealed, all models have heavy gauge pressed steel cases. Mounting is by four integral studs. Standard fronts for Models 075 & 077 are a one piece flame retardant polycarbonate moulding with a matt black finished bezel area, and a specially contoured window to minimise reflection from adjacent light sources. Model 079 has a black pressed steel bezel with a toughened glass window. Model 078 has a die-cast

bezel and a projecting moulded toughened glass window, which incorporates a gas tight zero adjuster.

## Options include

Supplementary red pointer (075 & 077), slave pointer, calibration for non standard ambient temperatures, special scales, trim potentiometers, etc are optional extras. Illuminated black or white dials with white or red light sources are also available as options.

## Features

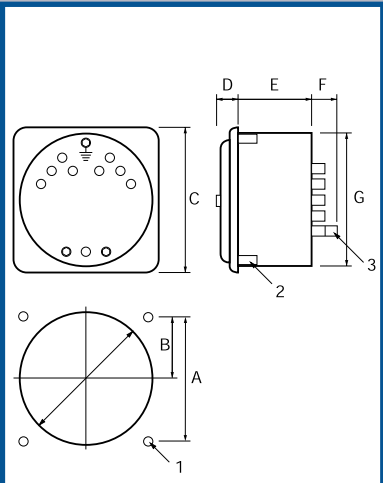
- Rugged Hi-Q taut-band suspension
- Accuracy class 1
- Scales are 240° moving iron and 250° moving coil
- Response time is approximately 2.5 seconds to full scale (077 and 078) and 3.5 seconds (079)
- Overshoot is 33% maximum
- Bump, Shock and vibration proof
- Meets all the requirements of ANSI-C39.1 (1981)
- Models 075/077/079 to IP54(NEMA 3S) splash proof
- IP55 (NEMA 4) hoseproof is an optional extra
- Model 078 to IP67 (NEMA 6 & 6P)
- Parallax error-free platform dials
- BASEEFA intrinsically safe options certification code Ex ia 11c T4
- Operating temperature range 0°C to +40°C, -40°C to +70°C (078)
- Storage temperature -10°C to +50°C
- Extreme temperature range -20°C to +65°C
- Dielectric withstand: 2.3kV for 1 minute
- Calibrated at 23°C
- Non reflecting window (075/077/079)
- JIS dimensioned product available on request

## Dimensions

| Model | Panel Cut-out |    |    | Rear View C | D  | E | F  | G   |
|-------|---------------|----|----|-------------|----|---|----|-----|
|       | Dia           | A  | B  |             |    |   |    |     |
| 075   | 103           | 86 | 43 | 110         | 17 | - | 30 | 101 |
| 077   | 103           | 86 | 43 | 110         | 17 | - | 30 | 101 |
| 078   | 103           | 86 | 43 | 110         | 17 | - | 30 | 101 |
| 079   | 229           | 86 | 43 | 229         | 17 | - | 30 | 101 |

- 1 4 Fixing holes Ø 8mm.
- 2 1/4-28 UNF fixing studs.
- 3 10-32 UNF Terminals (M5 screw clamp terminal on model 075).

Dimension E varies with measured parameter - see selection table on page 29.



# 070 Series ANSI Switchboard Meters

## A.C. & D.C. Ammeters, Voltmeters and Frequency Meters

### Features

- UL/CSA approvals
- 250° Linear scale
- AC instruments with true RMS converting circuit
- JIS dimensioned product available on request
- Oil dampened mechanisms for superior performance in high vibration situations

Self contained HI-Q Taut Band moving coil  
RMS compensated rectifier



### Specification

Manufactured in accordance with American National Standards ANSI C39.1, 1981

|                                     |   |                                   |  |
|-------------------------------------|---|-----------------------------------|--|
| <b>Accuracy:</b>                    | ±1% full scale at 23°C (73°F)           | <b>Storage Temperature:</b>       | -10 to +50°C (14 to 122°F)                                     |
| <b>Scale Arc:</b>                   | 250° full scale deflection              | <b>Extreme Temperature Range:</b> | -20° to +65°C (-4° to +149°F)                                  |
| <b>Scale Length:</b>                |   | <b>Terminals:</b>                 | Standard 10-32 UNF stud<br>optional M5 screw clamp             |
| 077 & 078:                          | 175.2 mm (6.9")                         | <b>Position of use:</b>           | Vertical (scale)   |
| 079:                                | 353 mm (13.9")                          | <b>Dielectric withstand:</b>      | 2300V A.C. for 1 minute<br>between electrical circuit and case |
| <b>Scale Plate:</b>                 | 2 piece, platform type                  | <b>Overshoot:</b>                 | 33% maximum  |
| <b>Response Time:</b>               |   | <b>Enclosure code:</b>            |  |
| 077 & 078:                          | Approximately 2.5 seconds to full scale | 077 & 079:                        | IP54, optional IP55  |
| 079:                                | Approximately 3.5 seconds to full scale | 078:                              | IP67   |
| <b>Operating Temperature Range:</b> | 0 to 40°C (32 to 104°F)                 |                                   |  |

### Peak Transient Suppression

Some types of frequency meters can be damaged by transient supply voltage spikes. Crompton 077-41 frequency meters can withstand, without damage, 10 successive applications of transient spikes of 1250 volts (duration of transient 30 milliseconds, decaying to 1150 volts for 1 millisecond; 5 minutes interval between successive applications.

### Ammeters and Voltmeters

|                         |  |
|-------------------------|--|
| <b>Overload Rating:</b> | A.C. Ammeters - 2 x continuous, 50 x for 1 second<br>A.C. Voltmeters and frequency meters - 1.2 x continuous<br>D.C. Ammeters - 2 x continuous 10 x for 1 second<br>D.C. Voltmeters - 1.2 x continuous |
| <b>Frequency Range:</b> | A.C. calibration 60Hz ±20%   |

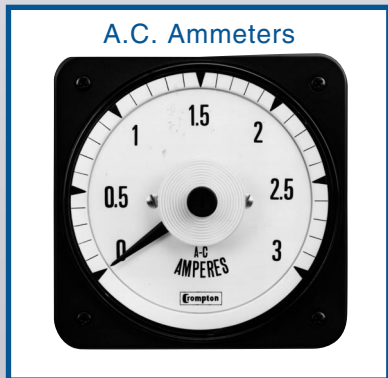
### Frequency Meters

|                        |                             |                    |   |  |
|------------------------|-----------------------------|--------------------|---|--|
| <b>Center Scale Hz</b> | <b>Maximum Frequency Hz</b> | <b>Error In Hz</b> | <b>Response Time:</b>                     | 3 seconds maximum  |
| 45-55                  | 50                          | 0.15               | <b>External Temperature Influence:</b>    | 0.6 times accuracy maximum with ±10°C from reference temperature |
| 46-54                  | 50                          | 0.15               | <b>External field influence:</b>          | 2.0 times accuracy maximum with 0.5mT field                      |
| 45-65                  | 55                          | 0.25               | <b>Acceptable input Harmonic Content:</b> | Up to 30% distortion   |
| 50-70                  | 60                          | 0.25               |   |  |
| 55-65                  | 60                          | 0.15               |   |  |
| 56-64                  | 60                          | 0.15               |   |  |
| 58-62                  | 60                          | 0.08               |   |  |
| 350-450                | 400                         | 1.30               |   |  |
| 360-440                | 400                         | 1.25               |   |  |
| 380-420                | 400                         | 0.80               |   |  |



# 070 Series ANSI Switchboard Meters

## RMS Reading A.C. Ammeters



A.C. Ammeters

| Rating | Scaling* | 4 1/2" Square Flange           |  | 8 3/4" Square Flange           |
|--------|----------|--------------------------------|--|--------------------------------|
|        |          | Standard Case<br>Catalogue No. | Sealed Case<br>Hi-Shock<br>Catalogue No. | Standard Case<br>Catalogue No. |

### Self Contained 40/70Hz (Accuracy ±1%, 60Hz)\*\*\*

| Rating | Scaling* | Standard Case<br>Catalogue No. | Sealed Case<br>Hi-Shock<br>Catalogue No. | Standard Case<br>Catalogue No. |
|--------|----------|--------------------------------|--|--------------------------------|
| 1A     | 0-1A     | •/+077-05FA-LALA-C6            | 078-05FJ-LALA-C6                         | •079-05FA-LALA-C6              |
| 1.5A   | 0-1.5A   | •/+077-05FA-LCLC-C6            | 078-05FJ-LCLC-C6                         | •079-05FA-LCLC-C6              |
| 2A     | 0-2A     | •/+077-05FA-LELE-C6            | 078-05FJ-LELE-C6                         | •079-05FA-LELE-C6              |
| 3A     | 0-3A     | •/+077-05FA-LLJL-C6            | 078-05FJ-LLJL-C6                         | •079-05FA-LLJL-C6              |
| 5A     | 0-5A     | •/+077-05FA-LSLS-C6            | 078-05FJ-LSLS-C6                         | •079-05FA-LSLS-C6              |
| 7.5A   | 0-7.5A   | •/+077-05FA-MFMF-C6            | 078-05FJ-MFMF-C6                         | •079-05FA-MFMF-C6              |
| 10A    | 0-10A    | •/+077-05FA-MTMT-C6            | 078-05FJ-MTMT-C6                         | •079-05FA-MTMT-C6              |
| 15A    | 0-15A    | •/+077-05FA-NDND-C6            | 078-05FJ-NDND-C6                         | •079-05FA-NDND-C6              |
| 20A    | 0-20A    | •/+077-05FA-NGNG-C6            | 078-05FJ-NGNG-C6                         | •079-05FA-NGNG-C6              |
| 30A    | 0-30A    | •/+077-05FA-NLNL-C6            | 078-05FJ-NLNL-C6                         | •079-05FA-NLNL-C6              |

For A.C. rectified non-RMS compensated meter please replace the -05F in the product code with -05B

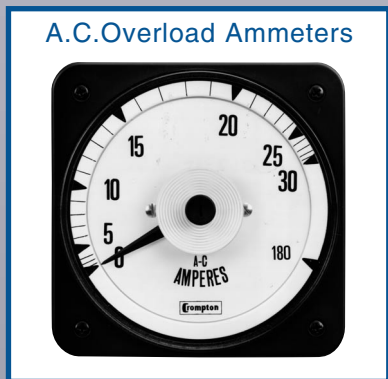
For connection diagram please see page 54 Fig. 1

### Transformer Rated 40/70Hz - Burden 0.3VA\*\*\*

| Rating | Scaling* | Standard Case<br>Catalogue No. | Sealed Case<br>Hi-Shock<br>Catalogue No. | Standard Case<br>Catalogue No. |
|--------|----------|--------------------------------|--|--------------------------------|
| 5 A    | 0-10A    | •/+077-05FA-LSMT-C6            | 078-05FJ-LSMT-C6                         | •079-05FA-LSMT-C6              |
| 5 A    | 0-15A    | •/+077-05FA-LSND-C6            | 078-05FJ-LSND-C6                         | •079-05FA-LSND-C6              |
| 5 A    | 0-20A    | •/+077-05FA-LSNG-C6            | 078-05FJ-LSNG-C6                         | •079-05FA-LSNG-C6              |
| 5 A    | 0-25A    | •/+077-05FA-LSNJ-C6            | 078-05FJ-LSNJ-C6                         | •079-05FA-LSNJ-C6              |
| 5 A    | 0-30A    | •/+077-05FA-LSNL-C6            | 078-05FJ-LSNL-C6                         | •079-05FA-LSNL-C6              |
| 5 A    | 0-40A    | •/+077-05FA-LSNP-C6            | 078-05FJ-LSNP-C6                         | •079-05FA-LSNP-C6              |
| 5 A    | 0-50A    | •/+077-05FA-LSNT-C6            | 078-05FJ-LSNT-C6                         | •079-05FA-LSNT-C6              |
| 5 A    | 0-75A    | •/+077-05FA-LSPB-C6            | 078-05FJ-LSPB-C6                         | •079-05FA-LSPB-C6              |
| 5 A    | 0-100A   | •/+077-05FA-LSPK-C6            | 078-05FJ-LSPK-C6                         | •079-05FA-LSPK-C6              |
| 5 A    | 0-150A   | •/+077-05FA-LSPZ-C6            | 078-05FJ-LSPZ-C6                         | •079-05FA-LSPZ-C6              |
| 5 A    | 0-200A   | •/+077-05FA-LSRL-C6            | 078-05FJ-LSRL-C6                         | •079-05FA-LSRL-C6              |
| 5 A    | 0-250A   | •/+077-05FA-LSRS-C6            | 078-05FJ-LSRS-C6                         | •079-05FA-LSRS-C6              |
| 5 A    | 0-300A   | •/+077-05FA-LSRX-C6            | 078-05FJ-LSRX-C6                         | •079-05FA-LSRX-C6              |
| 5 A    | 0-400A   | •/+077-05FA-LSSC-C6            | 078-05FJ-LSSC-C6                         | •079-05FA-LSSC-C6              |
| 5 A    | 0-500A   | •/+077-05FA-LSSF-C6            | 078-05FJ-LSSF-C6                         | •079-05FA-LSSF-C6              |
| 5 A    | 0-600A   | •/+077-05FA-LSSJ-C6            | 078-05FJ-LSSJ-C6                         | •079-05FA-LSSJ-C6              |
| 5 A    | 0-800A   | •/+077-05FA-LSSN-C6            | 078-05FJ-LSSN-C6                         | •079-05FA-LSSN-C6              |
| 5 A    | 0-1000A  | •/+077-05FA-LSSS-C6            | 078-05FJ-LSSS-C6                         | •079-05FA-LSSS-C6              |
| 5 A    | 0-1200A  | •/+077-05FA-LSSU-C6            | 078-05FJ-LSSU-C6                         | •079-05FA-LSSU-C6              |
| 5 A    | 0-1500A  | •/+077-05FA-LSTC-C6            | 078-05FJ-LSTC-C6                         | •079-05FA-LSTC-C6              |
| 5 A    | 0-1600A  | •/+077-05FA-LSTE-C6            | 078-05FJ-LSTE-C6                         | •079-05FA-LSTE-C6              |
| 5 A    | 0-2000A  | •/+077-05FA-LSTM-C6            | 078-05FJ-LSTM-C6                         | •079-05FA-LSTM-C6              |
| 5 A    | 0-2500A  | •/+077-05FA-LSTU-C6            | 078-05FJ-LSTU-C6                         | •079-05FA-LSTU-C6              |
| 5 A    | 0-3000A  | •/+077-05FA-LSUA-C6            | 078-05FJ-LSUA-C6                         | •079-05FA-LSUA-C6              |
| 5 A    | 0-4000A  | •/+077-05FA-LSUE-C6            | 078-05FJ-LSUE-C6                         | •079-05FA-LSUE-C6              |
| 5 A    | 0-5000A  | •/+077-05FA-LSUJ-C6            | 078-05FJ-LSUJ-C6                         | •079-05FA-LSUJ-C6              |
| 5 A    | 0-6000A  | •/+077-05FA-LSUP-C6            | 078-05FJ-LSUP-C6                         | •079-05FA-LSUP-C6              |
| 5 A    | 0-7000A  | •/+077-05FA-LSUS-C6            | 078-05FJ-LSUS-C6                         | •079-05FA-LSUS-C6              |
| 5 A    | 0-8000A  | •/+077-05FA-LSUW-C6            | 078-05FJ-LSUW-C6                         | •079-05FA-LSUW-C6              |

For A.C. rectified non-RMS compensated meter please replace the -05F in the product code with -05B

For connection diagram please see page 54 Fig. 2



A.C. Overload Ammeters

Rated 5A for standard C.T.'s with 6 x full scale.  
Overload portion of the scale is not subject to the accuracy guarantee.

- UL recognized File # E87815
- + CSA Approved File # LR52592

\* Other scales are available

\*\* Specify scale required

\*\*\* Case types 077/078/079 use 10-32 UNF terminals. For M5 screw clamp terminals stipulate case type 075

