



Energy Division

# Crompton Instruments Catalyst Preferred Range Catalogue Edition 3

# Crompton Instruments Power Measurement, Control and Protection Solutions

Tyco Electronics offers one of the largest product ranges of power measurement, control and protection instrumentation for switchgear and generator set manufacturers, panel builders and OEMs. Crompton Instruments branded products offer proven reliability across a diverse array of industries including power generation, process control, test and measurement, utility, marine, defence and energy management applications.

This combined catalogue and price list presents a small selection of our complete product portfolio and is in no way exhaustive.

For comprehensive information of our complete product range please visit our web site [www.crompton-instruments.com](http://www.crompton-instruments.com)



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[www.crompton-instruments.com](http://www.crompton-instruments.com)

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# New Products



**Integra Ci1 Energy Meter**  
• Watt and VAr hour meter



**Integra Ci3 Digital Metering System**  
• Cost-effective DMS



**Split Core Current Transformers**



**Ebony M53Q Current Transformer**  
• Miniature CT  
• 45 x 30 x 65mm

**3-in-1 Current Transformer**



# Instrumentation, power measurement and control

Crompton Instruments products have been synonymous with innovation for over a century. Beginning with a variant of the Serrin arc lamp, this heritage continues with the Integra digital metering systems, demonstrating a continuing commitment to putting new technology to work in the marketplace.

The focus on measuring energy began with Colonel Crompton's patented concept for a revolving energy counter and his support for a combined circuit measuring voltage and current. Starting with analogue instruments, the product range had widened by the 1970s to include transducers, protector trip relays and current transformers. During the 1990s, this portfolio was strengthened with a progressive upgrade to micro-based integrated technology from discrete circuitry.

Crompton Instruments products take a dual-track approach: providing both cost efficient and user-friendly technology.

Crompton measuring and control solutions provide a cost effective upgrades to existing analogue equipment and efficient alternatives to multi-function relays. Products like the Integra digital metering systems provide sophisticated, yet user-friendly innovation, combining microprocessor technology with button-driven menus. The extensive use of remote communication protocols allow individual instruments to be fully integrated into comprehensive energy management systems.

Crompton Instruments products: applied innovation for the entire electrical energy circle, from power generation to final consumers.

Over the past years, Tyco Electronics has rapidly grown to become one of the world's largest passive component manufacturer. Leading product brands such as Raychem, AMP, Elcon, P&B and many others, offers customers a large portfolio of connectors, relays, circuit breakers, fibre optic and wireless products, motors and other power components in 25 product segments.

## Energy Division – Connecting the world of power

The Energy Division, a global operating unit of Tyco Electronics, provides products and systems for a wide range of industries including power utilities, equipment manufacturers, and transportation. Each business unit within the Division comes with specialised products or systems and focused set of application skills. In addition to Crompton Instruments, other product brands include AMP, Axicom, Dorman Smith, Dulmison, Raychem and Simel.

By globally synchronising product development and manufacturing capacities, the Energy Division is

able to bring innovative and technology driven products quickly to market. The Division's significant position in individual segments and its combined size and expertise allow it to provide customers with a high level of engineering assistance and continuous after-sales support.

**Tyco Electronics Energy Division is a leading supplier of:**

- Cable accessories
- Connectors and fittings
- Insulators and insulation
- Surge arresters
- Switching, protection and lightning
- Power measurement and control



# Crompton Instruments

complete product range

## Integra Multi-function Metering Systems

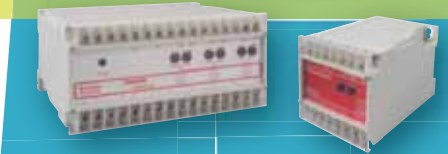
Integra range of multi-function metering systems measure, display and communicate over 100 parameters. Integra systems can be integrated into energy management and SCADA systems. Options include pulsed, analogue and RS485 communication protocols, a choice of DIN, DIN-rail and ANSI case-styles and LED or LCD displays.



[www.crompton-instruments.com/integra.html](http://www.crompton-instruments.com/integra.html)

## Integra and Paladin Transducers

Extensive range of transducers providing measurement, isolation and conversion of electrical parameters into industry standard DC output signals, offering single or multiple analogue outputs within a single case housing.



[www.crompton-instruments.com/transducer.html](http://www.crompton-instruments.com/transducer.html)

## kWh Meters

DIN-rail mounted or self-contained panel meters measure combined kWh or kVAh with pulsed or analogue output options and selectable CT and VT ratios. Microprocessor controlled circuitry provides up to Class 1.0 accuracy with outputs displayed directly on the instrument monitor or a remote PC.



[www.crompton-instruments.com/kwh.html](http://www.crompton-instruments.com/kwh.html)

## Protector Trip Relays

Trip relays continuously monitor and protect any electrical parameter within a set point limit. The range offers single and multi parameter units, earth leakage protection, ground fault relays, vector shift and ROCOF.



[www.crompton-instruments.com/protector.html](http://www.crompton-instruments.com/protector.html)

## Analogue Instruments

Traditional range of analogue instruments includes ANSI switchboard meters, panel indicators, sealed and ruggedized instruments, and complementary selector switches for line-to-line and line-to-neutral readings. All instruments are available in a range of styles, sizes and performance specifications.



[www.crompton-instruments.com/analogue.html](http://www.crompton-instruments.com/analogue.html)

## Current Transformers

Extensive range of current transformers for reducing high primary currents down to a consistent 5 or 1 Amp secondary current. Options include moulded case width, busbar and aperture sizes, tape wound, 3-in-1, balanced and split cores, current ratings and various mounting options.



[www.crompton-instruments.com/ct.html](http://www.crompton-instruments.com/ct.html)

## Meter Relays and Digital Indicators

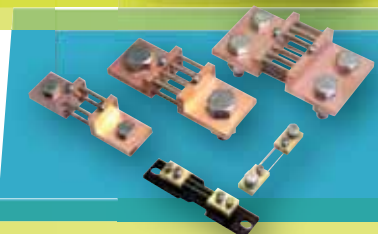
Meter relays and digital indicators are ideal for monitoring, process control and load shedding applications. This range includes digital and analogue meter relays, digital bargraph indicators and controllers.



[www.crompton-instruments.com/relay.html](http://www.crompton-instruments.com/relay.html)

## Shunts

Shunts provides an accurate dc millivolt signal, exactly proportional to the system current, to drive ammeter indicators, overload protection and control devices. This range includes industrial, switchboard, DEF 66-13, DIN, base mounted, tag end, lightweight and panel meter shunts in a variety of formats and configurations.



[www.crompton-instruments.com/shunt.html](http://www.crompton-instruments.com/shunt.html)

## Integra Ci1 Energy Meter

The Integra Ci1 energy meter is specially designed and developed as a cost effective Watt hour and VAR hour meter to complement the current Integra Ci series. The Integra Ci1 self-contained 96mm DIN panel mounted Watt hour, VAR hour meter measures the real consumption of active and reactive energy to Class 1.0 accuracy.

The backlit LCD screen displays 8 character counter indicating Watt hour or VAR hour units. The optional modules enables transfer of energy measurements to building management systems (BMS) via pulsed or digital communication options.

### Programmable Functions

Integra Ci1 provides simple programming to suit single phase 2-wire, three-phase three wire and three-phase four-wire un-balanced system configurations, CT ratio settings and configuration of selected communication options. To prevent unauthorised access to the product configuration settings, all set-up screens offer password protection.

### Display

Direct access to display the programmed set CT ratio, Watt hours import and export, VAR hours import and export and the phase sequence test routine for both voltage and current phases. During the accumulation of the Wh or VARh the running icon will flash at a rate dependant on the displayed parameter.

### Plug-in Modules

Plug-in modules allow to fit either maximum of two isolated pulsed output relays or a RS485 communication module and one isolated pulsed output relay. The communication output module can be programmed internally to respond either to Modbus® RTU or Johnson Controls.

### Panel Mounting

Integral retention clips allow fast, safe and secure panel mounting in various material thicknesses without the need for external screws or clips.

### Parameters

Button	Screen	Parameters
CT	1	CT ratio
Wh	2	IMPORT Wh
	3	EXPORT Wh
VARh	4	IMPORT VARh
	5	EXPORT VARh
TEST	6	Phase sequence diagnostic



Running icon indicates Wh and VARh accumulation.

### Product Code

Description	Part number
Integra Ci1 base unit	CI1-01
<b>Options</b>	
Pulsed output	CI-PUL-01
RS485 communication Output	CI-MOD-01
<b>Accessories</b>	
IP65 protective cover	3 G365 02
IP54 panel gasket	3 C345 01

# Integra Ci3 Digital Metering System

The Integra Ci3 digital metering system (dms) represents the first model of a new generation of digital metering systems designed to complement the current Crompton Instruments Integra series.

The Integra Ci3 meter is an accurate and cost effective solution for measurement and display of all major electrical and power quality parameters.

Designed, developed and manufactured in the UK, the Integra Ci3 dms builds on Crompton Instruments' long established reputation for metering product quality.

The product features a DIN 96 panel mounted enclosure, backlit LCD screen and user programmable CT ratios, all accessible via an intuitive user interface. Integra Ci3 dms measures 17 electrical parameters including total harmonic distortion (THD) up to the 31st harmonic.

## Programmable Functions

Integra Ci3 dms is programmable to suit single-phase two-wire, three-phase three-wire and three-phase four-wire system configurations. Programmable CT ratios enable to display any current range.

## Display

The parameters can be viewed on a backlit LCD screen. The 15 screens are accessible via four buttons on the front panel allowing to scroll between various screens making the navigation very user-friendly, intuitive and above all – simple.

## Plug-in Modules

Integra Ci3 offers two output ports at the rear of the product, to allow the fitting of either two isolated pulsed output relays or a RS485 communication module such as Modbus® or Johnson Controls communication output. These are configurable via internal settings.

## Panel Mounting

Integral retention clips allow fast, safe and secure panel mounting in various material thicknesses without the need for external screws or clips.

## Product Code

Description	Part number
Integra Ci3 base unit	CI3-01
<b>Options</b>	
Pulsed output	CI-PUL-01
RS485 communication output	CI-MOD-01
<b>Accessories</b>	
IP65 protective cover	3 G365 02
IP54 panel gasket	3 C345 01



## Parameters

Button	Screen	Parameters
V/Hz	1	Volts L1 - N Volts L2 - N Volts L3 - N
	2	Volts L1 - L2 Volts L2 - L3 Volts L3 - L1
	3	Frequency
	4	Volts L1 - N THD% Volts L2 - N THD% Volts L3 - N THD%
	5	Volts L1 - L2 THD% Volts L2 - L3 THD% Volts L3 - L1 THD%
A	1	Current L1 Current L2 Current L3
	2	Neutral current
	3	L1 Current max Demand L2 Current max Demand L3 Current max Demand
	4	Neutral current max demand
	5	Current L1 THD% Current L2 THD% Current L3 THD%
P/PF	1	kW kVAr kVA
	2	kW Max demand
	3	Power factor
E	1	kWh
	2	kVArh

## Integra 1630 Digital Metering System



Multi-function Integra 1630 digital metering system provides high accuracy 0.2% measurement, display and communication of all major electrical and power quality parameters including total harmonic distortion (THD) up to the 31st harmonic. To suit user requirements, the range includes single-phase, three-phase three-wire and three-phase four-wire capability, all selectable at the point of installation.

### Features

- Auxiliaries: 100/250V ac/dc (12/48V dc optional)
- Options: Profibus™, Modbus® TCP, Bacnet IP, RS485, Pulsed output

### Measured Parameters

- System (average) volts
- System (average) current
- System (total) kW
- System volts (average) THD%
- System current (average) THD%
- Phase - neutral
- Voltage (VL-N)
- (4 wire only)
- Phase - phase
- Voltage (L-L)
- (3 wire only)
- Voltage THD%
- (4 wire only)
- Phase current
- Current THD %
- Neutral current
- (4 wire only)
- Frequency
- Power factor (overall)
- kVAh kVA kW
- kWh import (7-digit resolution)
- kVAh import (7-digit resolution)
- kWh export (7-digit resolution)
- kVAh export (7-digit resolution)
- kW demand
- Current demand
- Maximum kW demand
- Maximum current demand
- Hours run

Metasys, Modbus®, Profibus™, Bacnet and IEEE are trademarks

### RS485 Modbus® RTU

Integra 1630 digital metering systems offer an RS485 communication port for direct connection to SCADA systems using the Modbus® RTU protocol or the Johnson Controls Metasys N2 protocol. Remote monitoring enables the user to record systems parameters in real time, using high resolution numbers. The Integra 1630 dms establishes the format for the master's query automatically, and responds with the correct protocol using IEEE floating point values. The Modbus® protocol option also offers user programmable word order and support for function 8 subfunction 0, return query data diagnostic.

### Product Description and Order Codes

Description	Cat. no.
1-phase, 3-phase 3/4-wire, 100-240V L-L, 5A CT input, Aux. 100-250V ac/dc	INT-1630-L-5-M-option
1-phase, 3-phase 3/4-wire, 241-480V L-L, 5A CT input, Aux. 100-250V ac/dc	INT-1630-M-5-M-option
<b>Options</b>	
No options	000
1 pulsed output	100
2 pulsed outputs	200
RS485 interface Modbus®	010
RS485 interface Modbus® + 1kWhr pulsed output	110
RS485 interface Modbus® + 2kWhr pulsed outputs	210
Profibus™ DP	050
Profibus™ DP + 2 pulsed outputs	250
Modbus® TCP	070
Modbus® IP Bacnet	080
Extended collar	OPT-1630-collar

## Integra 1530 Digital Metering System

Integra 1530 digital metering system is available with:

- Lonworks
- Analogue output
- True neutral current measurement

Please consult customer services for further information.  
Customer service 0870 870 7500





# Dintegra 1260 Digital Metering System

Multi-function Dintegra 1260 digital metering system provides programmable measurement, display and communication of up to 50 major electrical and power quality parameters including true rms system values, total harmonic distortion and power quality data.

### Measured Parameters

- Volts THD%
- Current THD%
- Phase - neutral voltages (VL-N)
- Phase - phase voltages (VL-L)
- System average phase - neutral voltages (VL-N)
- System average phase - phase voltages (VL-L)
- Phase current (I)
- Total current (ΣI)
- Power factor (PF)
- Frequency (Hz)
- Active power (P)
- Min, max and demand values
- Reactive power (Q)
- Apparent power (S)
- Total active power (ΣP)
- Total reactive power (ΣQ)
- Total apparent power (ΣS)
- Active energy - import (kWh)
- Active energy - export (kWh)
- Reactive energy - capacitive (kVARh)
- Reactive energy - inductive (kVARh)

### Product Description and Order Codes

Description	Cat. no.
3-phase, 10-300V L-N 5A CT input, Aux. 230V ac +/-10% 2 pulsed output	DRI-1260-200
3-phase, 10-300V L-N 5A CT input, Aux. 230V ac +/-10% 2 pulsed output+ RS485 Modbus®	DRI-1260-210



# Tegra 710, 810 Digital Metering System

The Tegra 710 and 810 multi-function digital metering systems display and communicate major electrical parameters. To suit user requirements the range includes single-phase, three-phase three-wire and three-phase four-wire capabilities under low voltage with unbalanced loads.

### Measured Parameters

- System volts
- System current
- System active power
- System apparent power
- System reactive power
- Phase - neutral voltages (VL-N)
- Phase - phase voltages (VL-L)
- Phase - current
- Frequency (of voltage V1)
- Active power per phase
- Apparent power per phase
- Reactive power per phase
- Power factor (PF)
- Total active energy Wh
- Total reactive energy VARh
- Phase angle
- Mean and peak values
- Time and date
- Hours run

### Tegra 710 4 module DIN-rail mounted

Description	Cat. no.
DIN-rail 4 module LCD screen 50-500V L-L, 0.25-6A ac, Aux. 230V ac, 2 Relay O/P	TEGRA-710-200
DIN-rail 4 module LCD screen 50-500V L-L, 0.25-6A ac, Aux. 230V ac, RS485 Modbus® O/P	TEGRA-710-010

### Tegra 810 DIN 72mm panel mounted

Description	Cat. no.
72mm panel mounted LCD screen 50-500V L-L, 0.25-6A ac, Aux. 230V ac, 2 Relay O/P	TEGRA-810-200
72mm panel mounted LCD screen 50-500V L-L, 0.25-6A ac, Aux. 230V ac, RS485 Modbus® O/P	TEGRA-810-010



## Kilowatt Hour Energy Meters - DIN-rail

Self-contained energy metering system which is ideal for switchgear, plant instrumentation and process control. The range has significant advantages over the traditional energy meters with pulsed outputs, communications and direct connection all available as options.

### Single-phase: 230V - Direct Connected

Description	Cat. no.
1-phase 15A - pulse output Pulsed output (Opto), Mechanical counter	DRK-1PPO-240

### Single-phase: 230V - CT Connected 5A

Description	Cat. no.
1-phase CT 5A - pulse output Pulsed output (Opto), Mechanical counter	DRK-1PCT-240

### Three-phase: 400V (+N) CT Connected 5A

Description	Cat. no.
3-phase 3 or 4-wire system, 5A CT connected, pulsed output (Opto), mechanical counter	DRK-3PCT-415
3-phase 3 or 4-wire system, 5A CT connected, pulsed output (Opto), LCD screen	DRK-3PCT-415-LCD

### Single-phase: 230V - Direct Connected 63A

Description	Cat. no.
1-phase 230V-63A direct connected, pulsed output (Opto) LCD screen	DRK-1P-230-D63

### Three-phase: 230V (400V) - Direct Connected 100A

Description	Cat. no.
3-phase 230V L-N (400V L-L) - 100A direct connected, pulsed output (Opto), LCD screen	DRK-3P-400-D100

### Concentrator Module - Pulse Collector

Description	Cat. no.
Pulse collector - collects 8 pulsed inputs to RS485 Modbus® output	DRK-485

# 3-in-1 Current Transformers

A range of 3-in-1 current transformers combining three traditional current transformers in one moulded case. 3-in-1 current transformers can be directly installed next to a three-phase moulded case circuit breaker, thus saving installation time where fitting three standard individual current transformers would be required. The M3N1 range of current transformers offers primary currents between 60-630A with 5A secondaries with up to class 0.5 accuracy performance.

Plug-in metal feet, DIN-rail clips and busbar mounting options are supplied as standard.



Part number	Ratio	Burden VA against class index			Aperture (mm)
		Class 0.5	Class 1	Class 3	
M3N1-25-60/5	60/5	-	1	2	3@15 x 25mm
M3N1-25-100/5	100/5	-	1.5	2.5	3@15 x 25mm
M3N1-25-125/5	125/5	-	1.5	2.5	3@15 x 25mm
M3N1-25-150/5	150/5	1.5	1.5	2.5	3@15 x 25mm
M3N1-25-160/5	160/5	1.5	1.5	2.5	3@15 x 25mm



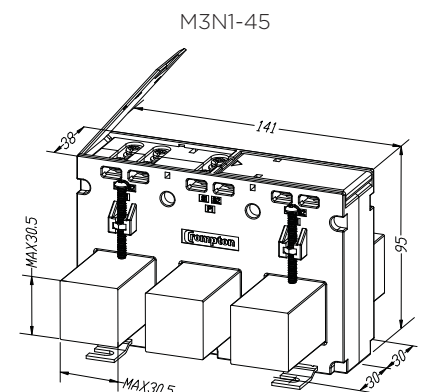
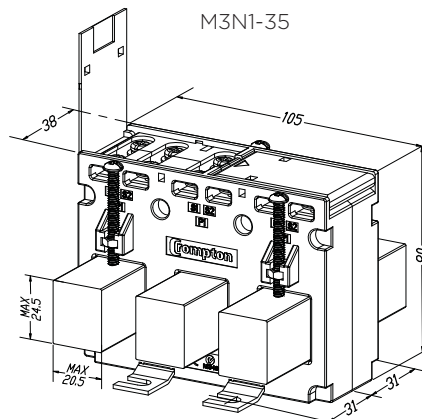
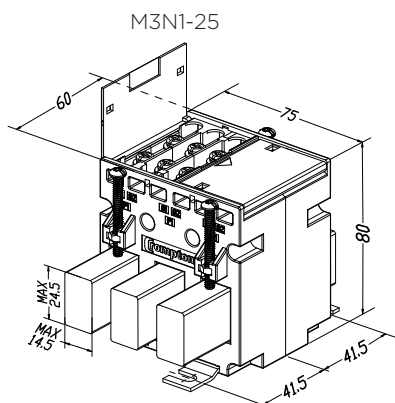
Part number	Ratio	Burden VA against class index			Aperture (mm)
		Class 0.5	Class 1	Class 3	
M3N1-35-100/5	100/5	-	1.5	2	3@21 x 25mm
M3N1-35-125/5	125/5	-	1.5	2.5	3@21 x 25mm
M3N1-35-150/5	150/5	-	1.5	2.5	3@21 x 25mm
M3N1-35-160/5	160/5	1.5	1.5	2.5	3@21 x 25mm
M3N1-35-200/5	200/5	1.5	1.5	2.5	3@21 x 25mm
M3N1-35-250/5	250/5	1.5	1.5	2.5	3@21 x 25mm



Part number	Ratio	Burden VA against class index			Aperture (mm)
		Class 0.5	Class 1	Class 3	
M3N1-45-250/5	250/5	1.5	1.5	2.5	3@31 x 31mm
M3N1-45-300/5	300/5	2.5	2.5	3.75	3@31 x 31mm
M3N1-45-400/5	400/5	2.5	2.5	3.75	3@31 x 31mm
M3N1-45-500/5	500/5	2.5	2.5	3.75	3@31 x 31mm
M3N1-45-600/5	600/5	2.5	2.5	3.75	3@31 x 31mm
M3N1-45-630/5	630/5	2.5	2.5	3.75	3@31 x 31mm



## Dimensions



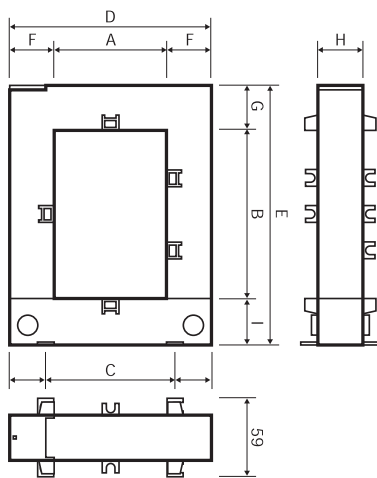
# Split Core Current Transformers

A range of split core current transformers that offers a cost effective and efficient method by which the current can be measured without the need to break the conductor, thereby reducing installation and commissioning time.

## Accuracy Class

Part number	Ratio	Burden VA against class index			Aperture (mm)		
		0.5	1	3			
Case 1	SC1-100/5A	100/5A	-	-	1.5	20 x 30	
	SC1-150/5A	150/5A	-	-	2	20 x 30	
	SC1-200/5A	200/5A	-	1.5	2.5	20 x 30	
	SC1-250/5A	250/5A	-	2	4	20 x 30	
	SC1-300/5A	300/5A	1.5	4	6	20 x 30	
Case 2	SC1-400/5A	400/5A	2.5	6	10	20 x 30	
	SC2-250/5A	250/5A	1	2	4	50 x 80	
	SC2-300/5A	300/5A	1.5	3	6	50 x 80	
	SC2-400/5A	400/5A	1.5	3	10	50 x 80	
	SC2-500/5A	500/5A	2.5	5	15	50 x 80	
	SC2-600/5A	600/5A	2.5	5	15	50 x 80	
	SC2-750/5A	750/5A	3	6	20	50 x 80	
	SC2-800/5A	800/5A	3	7.5	20	50 x 80	
	SC2-1000/5A	1000/5A	5	10	20	50 x 80	
	Case 3	SC3-250/5A	250/5A	1	2	4	80 x 80
SC3-300/5A		300/5A	1.5	3	6	80 x 80	
SC3-400/5A		400/5A	1.5	3	10	80 x 80	
SC3-500/5A		500/5A	2.5	5	15	80 x 80	
SC3-600/5A		600/5A	2.5	5	15	80 x 80	
SC3-750/5A		750/5A	3	6	20	80 x 80	
SC3-800/5A		800/5A	3	7.5	20	80 x 80	
SC3-1000/5A		1000/5A	5	10	20	80 x 80	
Case 4		SC4-500/5A	500/5A	-	4	12.5	80 x 120
		SC4-600/5A	600/5A	-	5	15	80 x 120
	SC4-750/5A	750/5A	2.5	6	17.5	80 x 120	
	SC4-800/5A	800/5A	3	7.5	20	80 x 120	
	SC4-1000/5A	1000/5A	5	10	20	80 x 120	
	SC4-1200/5A	1200/5A	6	12.5	25	80 x 120	
	SC4-1250/5A	1250/5A	7.5	15	30	80 x 120	
	SC4-1500/5A	1500/5A	8	17	30	80 x 120	
	SC4-1600/5A	1600/5A	8	17	30	80 x 120	
	Case 5	SC5-1000/5A	1000/5A	10	15	20	80 x 160
SC5-1250/5A		1250/5A	10	15	20	80 x 160	
SC5-1500/5A		1500/5A	15	20	25	80 x 160	
SC5-2000/5A		2000/5A	15	20	25	80 x 160	
SC5-2500/5A		2500/5A	15	20	25	80 x 160	
SC5-3000/5A		3000/5A	20	25	30	80 x 160	
SC5-4000/5A		4000/5A	20	25	30	80 x 160	
SC5-5000/5A		5000/5A	20	25	30	80 x 160	

## Dimensions



Dimension	Case 1	Case 2	Case 3	Case 4	Case 5
A	20	50	80	80	80
B	30	80	80	120	160
C	51	78	108	108	120
D	89	114	144	144	184
E	111	145	145	185	245
F	34	32	32	32	52
G	47	32	32	32	52
H	40	32	32	32	52
I	32	33	33	33	38
Weight (Kg)	0.75	0.90	1.05	1.25	4.30

Units of measurement - mm

# Moulded Case Current Transformers

## Ebony Series

The range of Crompton Instruments Ebony current transformers offers wide system current ratings, apertures and case sizes to suit every application. Manufactured to meet IEC 60044-1:2003 the range benefits include ratio rating from 5/5 to 4000/5, accuracy up to class 0.5, integral terminal cover for safety and multiple mounting options.

### MA5Y Range

Case Size: 77mm wide x 50mm deep x 116mm high  
 3" wide x 2" deep x 4.5" high  
 Fixing: M8 stud primary bar  
 Weight: 0.45Kg

Model type	Ratio range	VA at Class 3	VA at Class 1
MA5Y	5/5	7.5	5
MA5Y	10/5	7.5	5
MA5Y	15/5	7.5	5
MA5Y	20/5	7.5	5
MA5Y	30/5	7.5	5
MA5Y	40/5	7.5	5

### Ordering Codes

MA5Y	Add suffix to depict required ratio range. For example: MA5Y-5/5
M50-DINCLIP	DIN-rail mounting clip for DIN-rail mounting option (2 required)

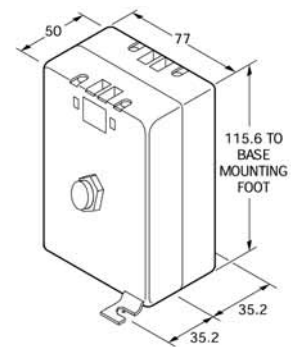
### M53Q Range

Case Size: 45mm wide x 30mm deep x 65mm high  
 1.8" wide x 1.2" deep x 2.5" high  
 Aperture: 20 x 6mm and 21mm diameter  
 0.8" x 0.2" and 0.8" diameter  
 Weight: 0.25Kg

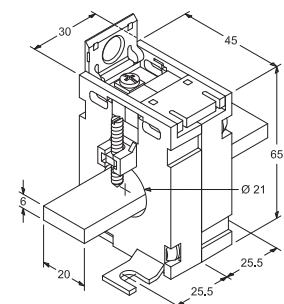
Model type	Ratio range	VA at Class 3	VA at Class 1
M53Q	50/5	1	-
M53Q	60/5	1.25	-
M53Q	75/5	1.5	-
M53Q	80/5	1.5	-
M53Q	100/5	2.5	1.5
M53Q	125/5	3	2.5
M53Q	150/5	3.75	2.5
M53Q	200/5	5	3.75
M53Q	250/5	-	5
M53Q	300/5	7.5	5

### Ordering Codes

M53Q	Add suffix to depict required ratio range. For example: M53Q-50/5
M30-DINCLIP	DIN-rail mounting clip for DIN-rail mounting option (2 required)



- Mounting feet centres 58.5mm x 70.4mm



- Mounting feet centres 26mm x 51mm



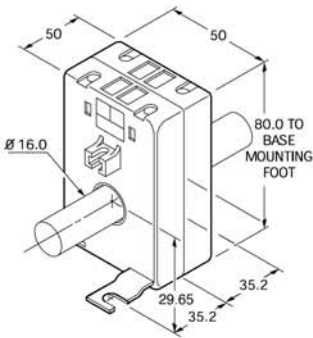
## M55E Range

Case Size: 50mm wide x 50mm deep x 80mm high  
 2" wide x 2" deep x 3.1" high  
 Aperture: 16.2 diameter and 15 x 5mm  
 0.68" diameter  
 Weight: 0.4Kg

Model type	Ratio range	VA at Class 3	VA at Class 1
M55E	30/5	1.25	-
M55E	40/5	2.5	-
M55E	50/5	2.5	-
M55E	60/5	3.75	2.5
M55E	75/5	5	3.75
M55E	80/5	5	3.75
M55E	100/5	7.5	5

### Ordering Codes

M55E	Add suffix to depict required ratio range. For example: M55E-20/5
M50-DINCLIP	DIN-rail mounting clip for DIN-rail mounting option (2 required)



- Mounting feet centres  
33mm x 70.4mm



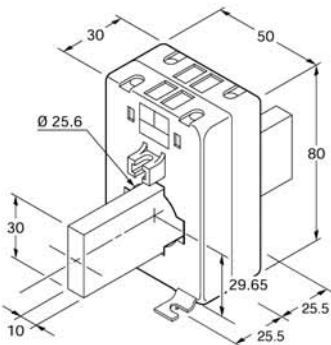
## M53J Range

Case Size: 50mm wide x 30mm deep x 80mm high  
 2" wide x 1.2" deep x 3.1" high  
 Aperture: 30 x 10mm, 25 x 15mm and 20 x 20mm and 25mm diameter  
 1.2" x 0.4", 1" x 0.6" and 0.8" x 0.8" and 1.0" diameter  
 Weight: 0.22Kg

Model type	Ratio range	VA at Class 3	VA at Class 1
M53J	100/5	1.25	-
M53J	125/5	1.25	-
M53J	150/5	2.5	-
M53J	160/5	2.5	-
M53J	200/5	2.5	2.5
M53J	250/5	3.75	2.5
M53J	300/5	5	3.75
M53J	400/5	7.5	3.75

### Ordering Codes

M53J	Add suffix to depict required ratio range. For example: M53J-100/5
M30-DINCLIP	DIN-rail mounting clip for DIN-rail mounting option (2 required)



- Mounting feet centres  
33mm x 51mm

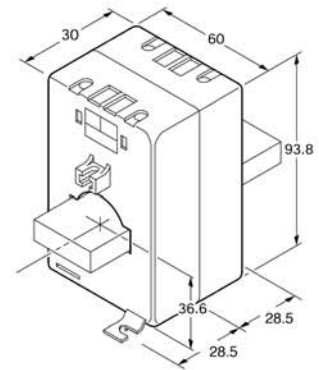
## M63N Range

Case Size: 60mm wide x 30mm deep x 94mm high  
 2.3" wide x 1.2" deep x 3.7" high  
 Aperture: 40 x 10mm and 32mm diameter  
 1.5" x 0.4" and 1.2" diameter  
 Weight: 0.3Kg

Model type	Ratio range	VA at Class 3	VA at Class 1	VA at Class 0.5
M63N	200/5	2.5	-	-
M63N	250/5	3.75	2.5	-
M63N	300/5	5	3.75	-
M63N	400/5	7.5	5	-
M63N	500/5	10	7.5	3.75
M63N	600/5	10	7.5	5
M63N	750/5	15	10	7.5
M63N	800/5	15	10	7.5

### Ordering Codes

M63N	Add suffix to depict required ratio range. For example: M63N-200/5
M30-DINCLIP	DIN-rail mounting clip for DIN-rail mounting option (2 required)



- Mounting feet centres 42mm

## M93L Range

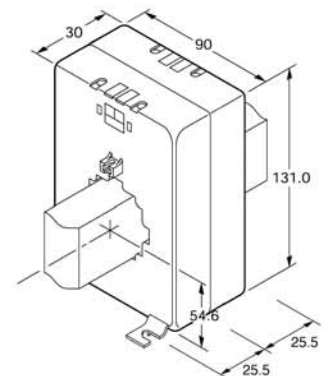
Case Size: 90mm wide x 30mm deep x 131mm high  
 3.5" wide x 1.2" deep x 5.1" high  
 Aperture: 50 x 10mm, 40 x 30mm and 42mm diameter  
 2" x 0.4", 1.5" x 1.2" and 1.6" diameter  
 Weight: 0.45Kg

Model type	Ratio range	VA at Class 3	VA at Class 1	VA at Class 0.5
M93L	400/5	15	7.5	3.75
M93L	500/5	20	15	5
M93L	600/5	30	20	10
M93L	750/5	20	15	7.5
M93L	800/5	20	15	10
M93L	1000/5	20	20	15
M93L	1200/5	30	30	20
M93L	1250/5	30	30	20
M93L	1500/5	30	30	20
M93L	1600/5	30	30	20

### Ordering Codes

M93L	Add suffix to depict required ratio range. For example: M93L-400/5
M30-DINCLIP	DIN-rail mounting clip for DIN-rail mounting option (2 required)

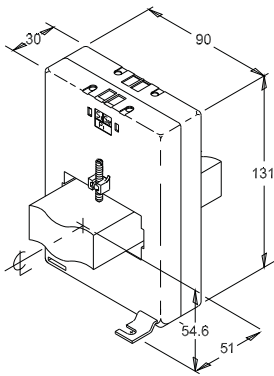
For details of extended input current range from 100 to 1600 Amps, 1 Amp secondaries, intermediate ratios or protection CTs, contact sales or visit our website at [www.crompton-instruments.com](http://www.crompton-instruments.com)



- Mounting feet centres 71.5mm x 51mm

## M93R Range

Case Size: 90mm wide x 30mm deep x 131mm high  
 3.5" wide x 1.2" deep x 5.1" high  
 Aperture: 64 x 12.6mm, 60 x 30mm  
 2.5" x 0.5", 2.4" x 1.2"  
 Weight: 0.6Kg



- Mounting feet centres 71.5mm x 51mm

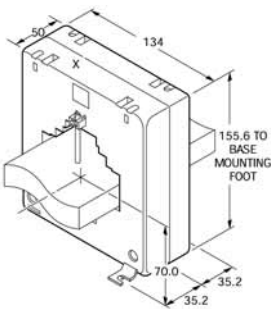
Model type	Ratio range	VA at Class 3	VA at Class 1	VA at Class 0.5
M93R	800/5	10	10	5
M93R	1000/5	15	10	7.5
M93R	1200/5	20	15	10
M93R	1250/5	20	15	10
M93R	1500/5	20	20	15
M93R	1600/5	20	20	15
M93R	2000/5	30	20	20

### Ordering Codes

M93R	Add suffix to depict required ratio range. For example: M93R-800/5
M30-DINCLIP	DIN-rail mounting clip for DIN-rail mounting option (2 required)

## MB5D Range

Case Size: 134mm wide x 50mm deep x 156mm high  
 5.2" wide x 2" deep x 6.1" high  
 Aperture: 80 x 30mm, 60 x 30mm, 50 x 50mm and 63mm diameter  
 3.1" x 1.2", 2.3" x 1.2", 2 x 2" and 2.4" diameter  
 Weight: 0.5Kg



- Mounting feet centres 105mm
- Mounting hole centres 110 x 6.6mm diameter

Model type	Ratio range	VA at Class 3	VA at Class 1	VA at Class 0.5
MB5D	400/5	15	10	7.5
MB5D	500/5	20	15	10
MB5D	600/5	15	10	5
MB5D	750/5	15	10	5
MB5D	800/5	20	15	7.5
MB5D	1000/5	22.5	20	10
MB5D	1200/5	30	20	15
MB5D	1250/5	30	20	15
MB5D	1500/5	30	20	15
MB5D	1600/5	40	30	20
MB5D	2000/5	50	40	30

### Ordering Codes

MB5D	Add suffix to depict required ratio range. For example: MB5D-400/5
M50-DINCLIP	DIN-rail mounting clip for DIN-rail mounting option (2 required)



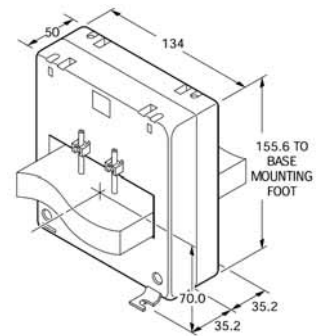
## MB5Z Range

Case Size: 134mm wide x 50mm deep x 156mm high  
 5.2" wide x 2" deep x 6.1" high  
 Aperture: 104 x 35mm, 35mm diameter  
 4" x 1.3" and 1.3" diameter  
 Weight: 0.7Kg

Model type	Ratio range	VA at Class 3	VA at Class 1	VA at Class 0.5
MB5Z	750/5	15	7.5	2.5
MB5Z	800/5	20	10	2.5
MB5Z	1000/5	22.5	15	7.5
MB5Z	1200/5	30	20	10
MB5Z	1250/5	30	20	15
MB5Z	1500/5	30	20	15
MB5Z	1600/5	30	20	15
MB5Z	2000/5	30	20	15
MB5Z	2500/5	30	20	15
MB5Z	3000/5	30	20	15
MB5Z	4000/5	30	20	15

### Ordering Codes

MB5Z Add suffix to depict required ratio range.  
 For example: MB5Z-750/5  
 M50-DINCLIP DIN-rail mounting clip for DIN-rail mounting option (2 required)

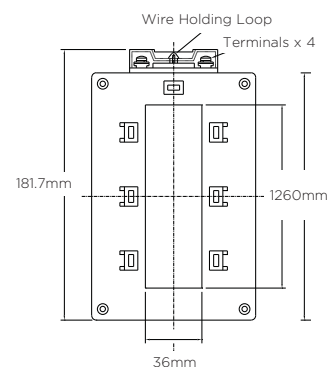


- Mounting feet centres 105mm x 71.4mm
- Mounting hole centres 110mm x 6.6mm diameter

## Busbar Mounting RS125

Dimensions: 110mm wide x 62mm deep x 182mm high  
 Hole: 126 x 36mm  
 Weight: 0.6Kg

Ratio range	VA at Class 3	VA at Class 1	VA at Class 0.5	Cat. no.
800/5	-	30	15	RS125-800/5
1000/5	-	30	15	RS125-1000/5
1200/5	-	30	15	RS125-1200/5
1250/5	-	30	15	RS125-1250/5
1500/5	-	30	15	RS125-1500/5
1600/5	-	30	15	RS125-1600/5
2000/5	-	30	15	RS125-2000/5
2500/5	-	30	15	RS125-2500/5
3000/5	-	30	15	RS125-3000/5
3500/5	-	30	15	RS125-3500/5
4000/5	-	30	15	RS125-4000/5



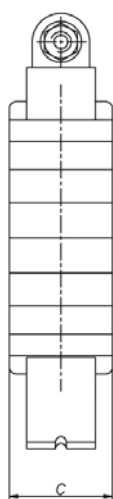
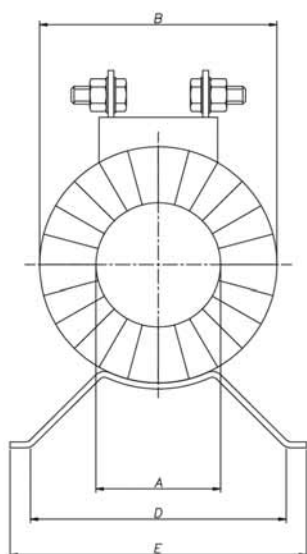
## Ring Current Transformers

Tyco Electronics under its Crompton Instruments brand offers an extensive portfolio of current transformers that provide comprehensive measuring accuracy. MR transformers accurately measure high primary currents, converting the primary current into a proportional 5 Amp secondary current.

### Dimensions and Connections

Model type	A Inside diameter	B Outside diameter	C Axel length	D Mounting feet pitch	E Mounting feet
MR-28	28	70	40	77.5	92.5
MR-42	42	80	30	86	100
MR-45	45	80	30	86	100
MR-60	60	100	30	86	100
MR-85	85	120	20	86	100
MR-125	125	165	20	86	100

### Dimensions



### Specifications

Model type	Ratio range	VA at Class 3	VA at Class 1	VA at Class 0.5
MR-28-40/5A	40/5	1.5	-	-
MR-28-50/5A	50/5	2	-	-
MR-28-60/5A	60/5	2.5	-	-
MR-42-80/5A	80/5	1.5	-	-
MR-42-100/5A	100/5	3.75	1.25	-
MR-42-150/5A	150/5	5	2.5	1
MR-42-200/5A	200/5	7.5	5	2.5
MR-42-250/5A	250/5	10	5	2.5
MR-45-300/5A	300/5	10	7.5	3.75
MR-45-400/5A	400/5	15	7.5	5
MR-60-400/5A	400/5	15	7.5	5
MR-60-500/5A	500/5	15	10	5
MR-60-600/5A	600/5	20	10	7.5
MR-85-800/5A	800/5	20	10	7.5
MR-85-1000/5A	1000/5	30	15	10
MR-85-1200/5A	1200/5	30	15	10
MR-85-1500/5A	1500/5	30	15	10
MR-85-1600/5A	1600/5	30	15	10
MR-125-2000/-5	2000/5	30	20	15
MR-125-2500/-5	2500/5	30	20	15
MR-125-3000/-5	3000/5	30	20	15
MR-125-4000/-5	4000/5	30	20	15

# Earth Leakage Relays

Residual current devices are used to detect potentially dangerous earth fault currents before damage is caused. The 373-ELR earth leakage protection relay allows the fault current to be continuously monitored and compared with the user selectable leakage level. Should the leakage exceed this level, the relay will trip to indicate a fault condition. With a very fast response time of under 40ms, the supply can be disconnected before serious damage can occur.

## Earth Leakage Relay – Standard (DPCO)

Description	Cat. no.
24-48 volts ac and dc	373-ELRW-CBC5-A2-ST
100-250 volts ac and dc	373-ELRW-CBC5-A3-ST

## Earth Leakage Relays – Pre-Alarm Option (SPCO)

Description	Cat. no.
24-48 volts ac and dc	373-ELRW-CBC5-A2-PA
100-250 volts ac and dc	373-ELRW-CBC5-A3-PA

- Monitors and detects potentially dangerous earth leakage currents
- Used in conjunction with core balanced CTs
- Precision digital settings
  - 10 x current trip levels 30mA-10A
  - 16 x time delays 0-10 seconds
- LED Bar-graph display
- 0/1mA analogue output
- User selectable energise or de-energise on trip link
- Double-pole change over relay (standard)
- Single-pole pre-alarm option



# Core Balance CTs

The CBT-94F series of core balanced current transformers are exclusively for use with our 373-ELR earth leakage protection relay. The extremely sensitive toroidal core and secondary winding are encapsulated by a self extinguishing case designed to provide excellent mechanical strength, protection from damage and electrical insulation.

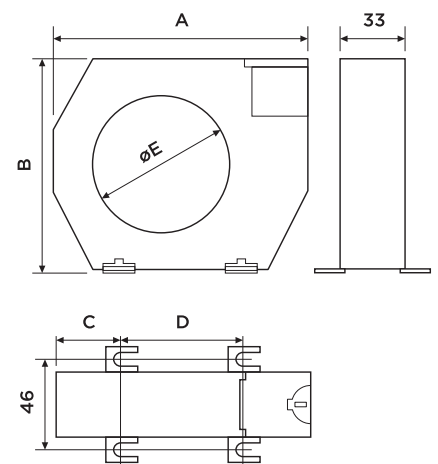
## Earth Leakage Relays – Core Balanced Current Transformers

Description	Cat. no.
Aperture diameter 35mm	CBT-94F-035
Aperture diameter 70mm	CBT-94F-070
Aperture diameter 105mm	CBT-94F-105
Aperture diameter 140mm	CBT-94F-140
Aperture diameter 210mm	CBT-94F-210
Aperture diameter 300mm	CBT-94F-300

- For use with model 373-ELR earth leakage relay
- Leakage measurement range 0 to 10A
- Toroidal CT
- UL94V-0 flame retardant plastic case
- Terminal cover
- Steel mounting feet

## Product Codes and Dimensions

Aperture Dim E	Dim A	Dim B	Dim C	Dim D	Cat. no.
35mm	100mm	79mm	26mm	48.5mm	CBT-94F-035
70mm	130mm	110mm	32mm	66mm	CBT-94F-070
105mm	170mm	146mm	38mm	94mm	CBT-94F-105
140mm	220mm	196mm	49mm	123mm	CBT-94F-140
210mm	299mm	284mm	69mm	161mm	CBT-94F-210
300mm	400mm	380mm	-	-	CBT-94F-300



# Analogue Instruments

High quality analogue instruments designed to measure an extensive range of electrical and electronic parameters. This comprehensive range offers DIN instruments, ANSI switchboard meters, panel indicators, sealed and ruggedised instruments and complementary selector switches for line-to-line and line-to-neutral readings. Instruments are precision engineered and robust in design, ensuring accurate measurement and display in the most demanding of environments. All instruments are available in a range of styles, sizes and specifications to meet the exacting needs of your industry.

## AC Ammeters 90°, 48mm

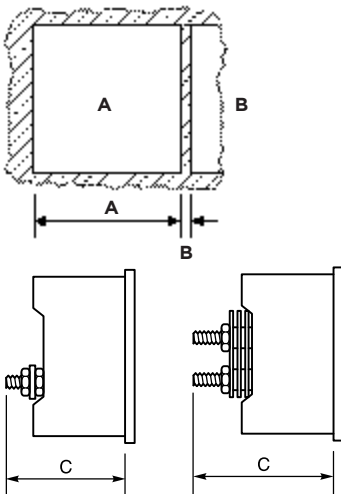
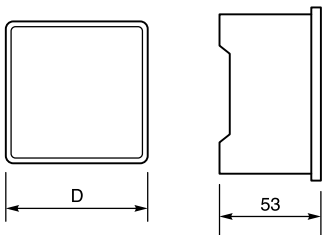
### DIN48 Moving Iron Shortscale AC Ammeters Direct Connected

Description	Cat. no.
1A direct connected, scaled 0-1A. 50/60Hz	E242-75A-G-LA-LA-C7
2.5A direct connected, scaled 0-2.5A. 50/60Hz	E242-75A-G-LF-LF-C7
6A direct connected, scaled 0-6A. 50/60Hz	E242-75A-G-LW-LW-C7
10A direct connected, scaled 0-10A. 50/60Hz	E242-75A-G-MT-MT-C7
15A direct connected, scaled 0-15A. 50/60Hz	E242-75A-G-ND-ND-C7
20A direct connected, scaled 0-20A. 50/60Hz	E242-75A-G-NG-NG-C7
25A direct connected, scaled 0-25A. 50/60Hz	E242-75A-G-NJ-NJ-C7
40A direct connected, scaled 0-40A. 50/60Hz	E242-75A-G-NP-NP-C7

### DIN48 Moving Iron Shortscale AC Ammeters CT Operated

Description	Cat. no.
5A CT operated, scaled 0-1A. 50/60Hz	E242-75A-G-LS-LA-C7
5A CT operated, scaled 0-5A. 50/60Hz	E242-75A-G-LS-LS-C7
5A CT operated, scaled 0-10A. 50/60Hz	E242-75A-G-LS-MT-C7
5A CT operated, scaled 0-15A. 50/60Hz	E242-75A-G-LS-ND-C7
5A CT operated, scaled 0-20A. 50/60Hz	E242-75A-G-LS-NG-C7
5A CT operated, scaled 0-25A. 50/60Hz	E242-75A-G-LS-NJ-C7
5A CT operated, scaled 0-30A. 50/60Hz	E242-75A-G-LS-NL-C7
5A CT operated, scaled 0-40A. 50/60Hz	E242-75A-G-LS-NP-C7
5A CT operated, scaled 0-50A. 50/60Hz	E242-75A-G-LS-NT-C7
5A CT operated, scaled 0-60A. 50/60Hz	E242-75A-G-LS-NW-C7
5A CT operated, scaled 0-80A. 50/60Hz	E242-75A-G-LS-PD-C7
5A CT operated, scaled 0-100A. 50/60Hz	E242-75A-G-LS-PK-C7
5A CT operated, scaled 0-120A. 50/60Hz	E242-75A-G-LS-PQ-C7
5A CT operated, scaled 0-125A. 50/60Hz	E242-75A-G-LS-PS-C7
5A CT operated, scaled 0-150A. 50/60Hz	E242-75A-G-LS-PZ-C7
5A CT operated, scaled 0-200A. 50/60Hz	E242-75A-G-LS-RL-C7
5A CT operated, scaled 0-250A. 50/60Hz	E242-75A-G-LS-RS-C7
5A CT operated, scaled 0-400A. 50/60Hz	E242-75A-G-LS-SC-C7
5A CT operated, scaled 0-500A. 50/60Hz	E242-75A-G-LS-SF-C7
5A CT operated, scaled 0-600A. 50/60Hz	E242-75A-G-LS-SJ-C7
5A CT operated, scaled 0-800A. 50/60Hz	E242-75A-G-LS-SN-C7
5A CT operated, scaled 0-1000A. 50/60Hz	E242-75A-G-LS-SS-C7
5A CT operated, scaled 0-1200A. 50/60Hz	E242-75A-G-LS-A9-C7
5A CT operated, scaled 0-1250A. 50/60Hz	E242-75A-G-LS-A1-C7
5A CT operated, scaled 0-1500A. 50/60Hz	E242-75A-G-LS-B2-C7
5A CT operated, scaled 0-1600A. 50/60Hz	E242-75A-G-LS-AE-C7

### Dimensions



### Dimensions

#### Moving iron measuring range

6-60A	C=67mm
>60A	C=78mm

#### Moving iron measuring range

0-30A	C=64mm
>30A	C=67mm

D	A cut out	B
48 x 48	45 x 45	4
72 x 72	68 x 68	4
96 x 96	92 x 92	4

## AC Ammeters 90°, 72mm

### DIN72 Moving Iron Shortscale AC Ammeters Direct Connected

Description	Cat. no.
1A direct connected, scaled 0-1A. 50/60Hz	E243-02A-G-LA-LA-C7
2.5A direct connected, scaled 0-2.5A. 50/60Hz	E243-02A-G-LF-LF-C7
6A direct connected, scaled 0-6A. 50/60Hz	E243-02A-G-LW-LW-C7
10A direct connected, scaled 0-10A. 50/60Hz	E243-02A-G-MT-MT-C7
15A direct connected, scaled 0-15A. 50/60Hz	E243-02A-G-ND-ND-C7
20A direct connected, scaled 0-20A. 50/60Hz	E243-02A-G-NG-NG-C7
25A direct connected, scaled 0-25A. 50/60Hz	E243-02A-G-NJ-NJ-C7
30A direct connected, scaled 0-30A. 50/60Hz	E243-02A-G-NL-NL-C7
40A direct connected, scaled 0-40A. 50/60Hz	E243-02A-G-NP-NP-C7
60A direct connected, scaled 0-60A. 50/60Hz	E243-02A-G-NW-NW-C7



### DIN72 Moving Iron Shortscale AC Ammeters CT Operated

Description	Cat. no.
5A CT operated, scaled 0-1A. 50/60Hz	E243-02A-G-LS-LA-C7
5A CT operated, scaled 0-5A. 50/60Hz	E243-02A-G-LS-LS-C7
5A CT operated, scaled 0-10A. 50/60Hz	E243-02A-G-LS-MT-C7
5A CT operated, scaled 0-15A. 50/60Hz	E243-02A-G-LS-ND-C7
5A CT operated, scaled 0-20A. 50/60Hz	E243-02A-G-LS-NG-C7
5A CT operated, scaled 0-25A. 50/60Hz	E243-02A-G-LS-NJ-C7
5A CT operated, scaled 0-30A. 50/60Hz	E243-02A-G-LS-NL-C7
5A CT operated, scaled 0-40A. 50/60Hz	E243-02A-G-LS-NP-C7
5A CT operated, scaled 0-50A. 50/60Hz	E243-02A-G-LS-NT-C7
5A CT operated, scaled 0-60A. 50/60Hz	E243-02A-G-LS-NW-C7
5A CT operated, scaled 0-80A. 50/60Hz	E243-02A-G-LS-PD-C7
5A CT operated, scaled 0-100A. 50/60Hz	E243-02A-G-LS-PK-C7
5A CT operated, scaled 0-150A. 50/60Hz	E243-02A-G-LS-PZ-C7
5A CT operated, scaled 0-200A. 50/60Hz	E243-02A-G-LS-RL-C7
5A CT operated, scaled 0-250A. 50/60Hz	E243-02A-G-LS-RS-C7
5A CT operated, scaled 0-400A. 50/60Hz	E243-02A-G-LS-SC-C7
5A CT operated, scaled 0-500A. 50/60Hz	E243-02A-G-LS-SF-C7
5A CT operated, scaled 0-600A. 50/60Hz	E243-02A-G-LS-SJ-C7
5A CT operated, scaled 0-800A. 50/60Hz	E243-02A-G-LS-SN-C7
5A CT operated, scaled 0-1000A. 50/60Hz	E243-02A-G-LS-SS-C7
5A CT operated, scaled 0-1200A. 50/60Hz	E243-02A-G-LS-A9-C7
5A CT operated, scaled 0-1250A. 50/60Hz	E243-02A-G-LS-A1-C7
5A CT operated, scaled 0-1500A. 50/60Hz	E243-02A-G-LS-B2-C7
5A CT operated, scaled 0-1600A. 50/60Hz	E243-02A-G-LS-AE-C7



## AC Ammeters 90°, 96mm

### DIN96 AC Ammeters Direct Connected

Description	Cat. no.
1A direct connected, scaled 0-1A. 50/60Hz	E244-02A-G-LA-LA-C7
2.5A direct connected, scaled 0-2.5A. 50/60Hz	E244-02A-G-LF-LF-C7
6A direct connected, scaled 0-6A. 50/60Hz	E244-02A-G-LW-LW-C7
10A direct connected, scaled 0-10A. 50/60Hz	E244-02A-G-MT-MT-C7
15A direct connected, scaled 0-15A. 50/60Hz	E244-02A-G-ND-ND-C7
20A direct connected, scaled 0-20A. 50/60Hz	E244-02A-G-NG-NG-C7
25A direct connected, scaled 0-25A. 50/60Hz	E244-02A-G-NJ-NJ-C7
40A direct connected, scaled 0-40A. 50/60Hz	E244-02A-G-NP-NP-C7
60A direct connected, scaled 0-60A. 50/60Hz	E244-02A-G-NW-NW-C7

### DIN96 AC Ammeters Connect via CT X/5A with Fixed Dial Plate Normal Scaling

Description	Cat. no.
5A CT operated, scaled 0-1A. 50/60Hz	E244-02A-G-LS-LA-C7
5A CT operated, scaled 0-5A. 50/60Hz	E244-02A-G-LS-LS-C7
5A CT operated, scaled 0-10A. 50/60Hz	E244-02A-G-LS-MT-C7
5A CT operated, scaled 0-15A. 50/60Hz	E244-02A-G-LS-ND-C7
5A CT operated, scaled 0-20A. 50/60Hz	E244-02A-G-LS-NG-C7
5A CT operated, scaled 0-25A. 50/60Hz	E244-02A-G-LS-NJ-C7
5A CT operated, scaled 0-30A. 50/60Hz	E244-02A-G-LS-NL-C7
5A CT operated, scaled 0-40A. 50/60Hz	E244-02A-G-LS-NP-C7
5A CT operated, scaled 0-50A. 50/60Hz	E244-02A-G-LS-NT-C7
5A CT operated, scaled 0-60A. 50/60Hz	E244-02A-G-LS-NW-C7
5A CT operated, scaled 0-80A. 50/60Hz	E244-02A-G-LS-PD-C7
5A CT operated, scaled 0-100A. 50/60Hz	E244-02A-G-LS-PK-C7
5A CT operated, scaled 0-150A. 50/60Hz	E244-02A-G-LS-PZ-C7
5A CT operated, scaled 0-200A. 50/60Hz	E244-02A-G-LS-RL-C7
5A CT operated, scaled 0-250A. 50/60Hz	E244-02A-G-LS-RS-C7
5A CT operated, scaled 0-400A. 50/60Hz	E244-02A-G-LS-SC-C7
5A CT operated, scaled 0-500A. 50/60Hz	E244-02A-G-LS-SF-C7
5A CT operated, scaled 0-600A. 50/60Hz	E244-02A-G-LS-SJ-C7
5A CT operated, scaled 0-800A. 50/60Hz	E244-02A-G-LS-SN-C7
5A CT operated, scaled 0-1000A. 50/60Hz	E244-02A-G-LS-SS-C7
5A CT operated, scaled 0-1200A. 50/60Hz	E244-02A-G-LS-A9-C7
5A CT operated, scaled 0-1250A. 50/60Hz	E244-02A-G-LS-A1-C7
5A CT operated, scaled 0-1500A. 50/60Hz	E244-02A-G-LS-B2-C7
5A CT operated, scaled 0-1600A. 50/60Hz	E244-02A-G-LS-AE-C7

## AC Ammeters 90°, 48mm

### DIN48 Moving Iron Shortscale AC Ammeters x 6 Overload Direct Connected

Description	Cat. no.
1A direct connected, scaled 0-1/6A. 50/60Hz	E242-756A-G-LA-LA-C7
2.5A direct connected, scaled 0-2.5/15A. 50/60Hz	E242-756A-G-LF-LF-C7
6A direct connected, scaled 0-6/45A. 50/60Hz	E242-756A-G-LW-LW-C7
10A direct connected, scaled 0-10/60A. 50/60Hz	E242-756A-G-MT-MT-C7
15A direct connected, scaled 0-15/90A. 50/60Hz	E242-756A-G-ND-ND-C7
20A direct connected, scaled 0-20/120A. 50/60Hz	E242-756A-G-NG-NG-C7
25A direct connected, scaled 0-25/150A. 50/60Hz	E242-756A-G-NJ-NJ-C7
30A direct connected, scaled 0-30/180A. 50/60Hz	E242-756A-G-NL-NL-C7
40A direct connected, scaled 0-40/240A. 50/60Hz	E242-756A-G-NP-NP-C7



### DIN48 Moving Iron Shortscale AC Ammeters x 6 Overload CT Operated

Description	Cat. no.
5A CT operated, scaled 0-1/6A 50/60Hz	E242-756A-G-LS-LA-C7
5A CT operated, scaled 0-5/30A 50/60Hz	E242-756A-G-LS-LS-C7
5A CT operated, scaled 0-10/60A 50/60Hz	E242-756A-G-LS-MT-C7
5A CT operated, scaled 0-15/90A 50/60Hz	E242-756A-G-LS-ND-C7
5A CT operated, scaled 0-20/120A 50/60Hz	E242-756A-G-LS-NG-C7
5A CT operated, scaled 0-25/150A 50/60Hz	E242-756A-G-LS-NJ-C7
5A CT operated, scaled 0-30/180A 50/60Hz	E242-756A-G-LS-NL-C7
5A CT operated, scaled 0-40/240A 50/60Hz	E242-756A-G-LS-NP-C7
5A CT operated, scaled 0-50/300A 50/60Hz	E242-756A-G-LS-NT-C7
5A CT operated, scaled 0-60/360A 50/60Hz	E242-756A-G-LS-NW-C7
5A CT operated, scaled 0-80/480A 50/60Hz	E242-756A-G-LS-PD-C7
5A CT operated, scaled 0-100/600A 50/60Hz	E242-756A-G-LS-PK-C7
5A CT operated, scaled 0-150/900A 50/60Hz	E242-756A-G-LS-PZ-C7
5A CT operated, scaled 0-200/1200A 50/60Hz	E242-756A-G-LS-RL-C7
5A CT operated, scaled 0-250/1500A 50/60Hz	E242-756A-G-LS-RS-C7
5A CT operated, scaled 0-400/2400A 50/60Hz	E242-756A-G-LS-SC-C7
5A CT operated, scaled 0-500/3000A 50/60Hz	E242-756A-G-LS-SF-C7
5A CT operated, scaled 0-600/3600A 50/60Hz	E242-756A-G-LS-SJ-C7
5A CT operated, scaled 0-800/4800A 50/60Hz	E242-756A-G-LS-SN-C7
5A CT operated, scaled 0-1000/6000A 50/60Hz	E242-756A-G-LS-SS-C7
5A CT operated, scaled 0-1200/7200A 50/60Hz	E242-756A-G-LS-ZW-C7
5A CT operated, scaled 0-1500/9000A 50/60Hz	E242-756A-G-LS-A1-C7
5A CT operated, scaled 0-1600/9600A 50/60Hz	E242-756A-G-LS-Z7-C7



## AC Ammeters 90°, 72mm

### DIN72 Moving Iron Shortscale AC Ammeters x 6 Overload Direct Connected

Description	Cat. no.
1A direct connected, scaled 0-1/6A. 50/60Hz	E243-026A-G-LA-LA-C7
2.5A direct connected, scaled 0-2.5/15A. 50/60Hz	E243-026A-G-LF-LF-C7
6A direct connected, scaled 0-6/45A. 50/60Hz	E243-026A-G-LW-LW-C7
10A direct connected, scaled 0-10/60A. 50/60Hz	E243-026A-G-MT-MT-C7
15A direct connected, scaled 0-15/90A. 50/60Hz	E243-026A-G-ND-ND-C7
20A direct connected, scaled 0-20/120A. 50/60Hz	E243-026A-G-NG-NG-C7
25A direct connected, scaled 0-25/150A. 50/60Hz	E243-026A-G-NJ-NJ-C7
30A direct connected, scaled 0-30/180A. 50/60Hz	E243-026A-G-NL-NL-C7
40A direct connected, scaled 0-40/240A. 50/60Hz	E243-026A-G-NP-NP-C7
60A direct connected, scaled 0-60/360A. 50/60Hz	E243-026A-G-NW-NW-C7

### DIN72 Moving Iron Shortscale AC Ammeters x 6 Overload CT Operated

Description	Cat. no.
5A CT operated, scaled 0-1/6A	E243-026A-G-LS-LA-C7
5A CT operated, scaled 0-5/30A	E243-026A-G-LS-LS-C7
5A CT operated, scaled 0-10/60A	E243-026A-G-LS-MT-C7
5A CT operated, scaled 0-15/90A	E243-026A-G-LS-ND-C7
5A CT operated, scaled 0-20/120A	E243-026A-G-LS-NG-C7
5A CT operated, scaled 0-25/150A	E243-026A-G-LS-NJ-C7
5A CT operated, scaled 0-30/180A	E243-026A-G-LS-NL-C7
5A CT operated, scaled 0-40/240A	E243-026A-G-LS-NP-C7
5A CT operated, scaled 0-50/300A	E243-026A-G-LS-NT-C7
5A CT operated, scaled 0-60/360A	E243-026A-G-LS-NW-C7
5A CT operated, scaled 0-80/480A	E243-026A-G-LS-PD-C7
5A CT operated, scaled 0-100/600A	E243-026A-G-LS-PK-C7
5A CT operated, scaled 0-150/900A	E243-026A-G-LS-PZ-C7
5A CT operated, scaled 0-200/1200A	E243-026A-G-LS-RL-C7
5A CT operated, scaled 0-250/1500A	E243-026A-G-LS-RS-C7
5A CT operated, scaled 0-400/2400A	E243-026A-G-LS-SC-C7
5A CT operated, scaled 0-500/3000A	E243-026A-G-LS-SF-C7
5A CT operated, scaled 0-600/3600A	E243-026A-G-LS-SJ-C7
5A CT operated, scaled 0-800/4800A	E243-026A-G-LS-SN-C7
5A CT operated, scaled 0-1000/6000A	E243-026A-G-LS-SS-C7
5A CT operated, scaled 0-1200/7200A	E243-026A-G-LS-ZW-C7
5A CT operated, scaled 0-1500/9000A	E243-026A-G-LS-A1-C7
5A CT operated, scaled 0-1600/9600A	E243-026A-G-LS-Z7-C7



## AC Ammeters 90°, 96mm

### DIN96 Moving Iron Shortscale AC Ammeters x 6 Overload Direct Connected

Description	Cat. no.
1A direct connected, scaled 0-1/6A. 50/60Hz	E244-026A-G-LA-LA-C7
2.5A direct connected, scaled 0-2.5/15A. 50/60Hz	E244-026A-G-LF-LF-C7
6A direct connected, scaled 0-6/45A. 50/60Hz	E244-026A-G-LW-LW-C7
10A direct connected, scaled 0-10/60A. 50/60Hz	E244-026A-G-MT-MT-C7
15A direct connected, scaled 0-15/90A. 50/60Hz	E244-026A-G-ND-ND-C7
20A direct connected, scaled 0-20/120A. 50/60Hz	E244-026A-G-NG-NG-C7
25A direct connected, scaled 0-25/150A. 50/60Hz	E244-026A-G-NJ-NJ-C7
30A direct connected, scaled 0-30/180A. 50/60Hz	E244-026A-G-NL-NL-C7
40A direct connected, scaled 0-40/240A. 50/60Hz	E244-026A-G-NP-NP-C7
60A direct connected, scaled 0-60/360A. 50/60Hz	E244-026A-G-NW-NW-C7



### DIN96 Moving Iron Shortscale AC Ammeters x 6 Overload CT Operated

Description	Cat. no.
5/30A CT operated, scaled 0-1/6A. 50/60Hz	E244-026A-G-LS-LA-C7
5/30A CT operated, scaled 0-5/30A. 50/60Hz	E244-026A-G-LS-LS-C7
5/30A CT operated, scaled 0-10/60A. 50/60Hz	E244-026A-G-LS-MT-C7
5/30A CT operated, scaled 0-15/90A. 50/60Hz	E244-026A-G-LS-ND-C7
5/30A CT operated, scaled 0-20/120A. 50/60Hz	E244-026A-G-LS-NG-C7
5/30A CT operated, scaled 0-25/150A. 50/60Hz	E244-026A-G-LS-NJ-C7
5/30A CT operated, scaled 0-30/180A. 50/60Hz	E244-026A-G-LS-NL-C7
5/30A CT operated, scaled 0-40/240A. 50/60Hz	E244-026A-G-LS-NP-C7
5/30A CT operated, scaled 0-50/300A. 50/60Hz	E244-026A-G-LS-NT-C7
5/30A CT operated, scaled 0-60/360A. 50/60Hz	E244-026A-G-LS-NW-C7
5/30A CT operated, scaled 0-80/480A. 50/60Hz	E244-026A-G-LS-PD-C7
5/30A CT operated, scaled 0-100/600A. 50/60Hz	E244-026A-G-LS-PK-C7
5/30A CT operated, scaled 0-150/900A. 50/60Hz	E244-026A-G-LS-PZ-C7
5/30A CT operated, scaled 0-200/1200A. 50/60Hz	E244-026A-G-LS-RL-C7
5/30A CT operated, scaled 0-250/1500A. 50/60Hz	E244-026A-G-LS-RS-C7
5/30A CT operated, scaled 0-400/2400A. 50/60Hz	E244-026A-G-LS-SC-C7
5/30A CT operated, scaled 0-500/3000A. 50/60Hz	E244-026A-G-LS-SF-C7
5/30A CT operated, scaled 0-600/3600A. 50/60Hz	E244-026A-G-LS-SJ-C7
5/30A CT operated, scaled 0-800/4800A. 50/60Hz	E244-026A-G-LS-SN-C7
5/30A CT operated, scaled 0-1000/6000A. 50/60Hz	E244-026A-G-LS-SS-C7
5/30A CT operated, scaled 0-1200/7200A. 50/60Hz	E244-026A-G-LS-ZW-C7
5/30A CT operated, scaled 0-1500/9000A. 50/60Hz	E244-026A-G-LS-A1-C7
5/30A CT operated, scaled 0-1600/9600A. 50/60Hz	E244-026A-G-LS-Z7-C7



## AC Voltmeters 90°

### DIN48 AC Voltmeters Direct Connected

Description	Cat. no.
0-150V direct connected, scaled 0-150V. 50/60Hz	E242-75V-G-PZ-PZ-C7
0-300V direct connected, scaled 0-300V. 50/60Hz	E242-75V-G-RX-RX-C7
0-500V direct connected, scaled 0-500V. 50/60Hz	E242-75V-G-SF-SF-C7
0-600V direct connected, scaled 0-600V. 50/60Hz	E242-75V-G-SJ-SJ-C7

### DIN72 AC Voltmeters

Description	Cat. no.
0-150V direct connected, scaled 0-150V. 50/60Hz	E243-02V-G-PZ-PZ-C7
0-300V direct connected, scaled 0-300V. 50/60Hz	E243-02V-G-RX-RX-C7
0-500V direct connected, scaled 0-500V. 50/60Hz	E243-02V-G-SF-SF-C7
0-600V direct connected, scaled 0-600V. 50/60Hz	E243-02V-G-SJ-SJ-C7

### DIN96 AC Voltmeters

Description	Cat. no.
0-150V direct connected, scaled 0-150V. 50/60Hz	E244-02V-G-PZ-PZ-C7
0-300V direct connected, scaled 0-300V. 50/60Hz	E244-02V-G-RX-RX-C7
0-500V direct connected, scaled 0-500V. 50/60Hz	E244-02V-G-SF-SF-C7
0-600V direct connected, scaled 0-600V. 50/60Hz	E244-02V-G-SJ-SJ-C7

## Frequency Meters 90°

### DIN48 Frequency Meters

Description	Cat. no.
45-55Hz 100-125V, scaled 45/50/55Hz	E242-41S-G-PL-AG-AG
45-55Hz 200-250V, scaled 45/50/55Hz	E242-41S-G-RN-AG-AG
45-55Hz 380V-440V, scaled 45/50/55Hz	E242-41S-G-RY-AG-AG
45-65Hz 100-125V, scaled 45/55/65Hz	E242-41S-G-PL-AJ-AJ
45-65Hz 200-250V, scaled 45/55/65Hz	E242-41S-G-RN-AJ-AJ
45-65Hz 380V-440V, scaled 45/55/65Hz	E242-41S-G-RY-AJ-AJ
55-65Hz 100-125V, scaled 55/60/65Hz	E242-41S-G-PL-AN-AN
55-65Hz 200-250V, scaled 55/60/65Hz	E242-41S-G-RN-AN-AN
55-65Hz 380V-440V, scaled 55/60/65Hz	E242-41S-G-RY-AN-AN

### DIN72 Frequency Meters

Description	Cat. no.
45-55Hz 100-125V, scaled 45/50/55Hz	E243-41S-G-PL-AG-AG
45-55Hz 200-250V, scaled 45/50/55Hz	E243-41S-G-RN-AG-AG
45-55Hz 380V-440V, scaled 45/50/55Hz	E243-41S-G-RY-AG-AG
45-65Hz 100-125V, scaled 45/55/65Hz	E243-41S-G-PL-AJ-AJ
45-65Hz 200-250V, scaled 45/55/65Hz	E243-41S-G-RN-AJ-AJ
45-65Hz 380V-440V, scaled 45/55/65Hz	E243-41S-G-RY-AJ-AJ
55-65Hz 100-125V, scaled 55/60/65Hz	E243-41S-G-PL-AN-AN
55-65Hz 200-250V, scaled 55/60/65Hz	E243-41S-G-RN-AN-AN
55-65Hz 380V-440V, scaled 55/60/65Hz	E243-41S-G-RY-AN-AN

### DIN96 Frequency Meters

Description	Cat. no.
45-55Hz 100-125V, scaled 45/50/55Hz	E244-41S-G-PL-AG-AG
45-55Hz 200-250V, scaled 45/50/55Hz	E244-41S-G-RN-AG-AG
45-55Hz 380V-440V, scaled 45/50/55Hz	E244-41S-G-RY-AG-AG
45-65Hz 100-125V, scaled 45/55/65Hz	E244-41S-G-PL-AJ-AJ
45-65Hz 200-250V, scaled 45/55/65Hz	E244-41S-G-RN-AJ-AJ
45-65Hz 380V-440V, scaled 45/55/65Hz	E244-41S-G-RY-AJ-AJ
55-65Hz 100-125V, scaled 55/60/65Hz	E244-41S-G-PL-AN-AN
55-65Hz 200-250V, scaled 55/60/65Hz	E244-41S-G-RN-AN-AN
55-65Hz 380V-440V, scaled 55/60/65Hz	E244-41S-G-RY-AN-AN



## Hours Run Meters

### M Series Elapsed Time or Hours Run Meters

Elapsed time meters (ETM) or hours run meters monitor ON/RUN time allowing the user to effectively control production efficiency, cost estimation and service period monitoring for preventative maintenance. Time is measured in increments of 0.01h up to 99999.99 hours after which the meter automatically resets to zero. Meters are non resettable before this time to prevent accidental resetting.

### Specifications

#### AC

Display	99999.99
Voltage	100-125V ac
	200-250V ac
	380-440V ac
Frequency	50 or 60Hz
Operating temperature	-25C to +80C
Burden	1VA (100-25V ac)
	2VA (200-250V ac)
	3.5VA (380-440V ac)

#### DC

Display	99999.99
Voltage	12-30V dc
	10-80V dc
	110V dc
Operating temperature	-20C to +70C
Burden	0.5VA (6-30V dc)
	1VA (10-80V dc)
	1.5VA (110V dc)



### DIN48 AC Hours Run Meter

Description	Cat. no.
100-125V ac 50Hz	M242-155-G-PL-ZH-C5
200-250V ac 50Hz	M242-155-G-RN-ZH-C5
380-440V ac 50Hz	M242-155-G-RY-ZH-C5
100-125V ac 60Hz	M242-156-G-PL-ZH-C6
200-250V ac 60Hz	M242-156-G-RN-ZH-C6
380-440V ac 60Hz	M242-156-G-RY-ZH-C6
6-30V dc	M242-157-G-BU-ZH-DC
10-80V dc	M242-157-G-NR-ZH-DC
110V dc	M242-157-G-PM-ZH-DC

### DIN72 AC Hours Run Meter

Description	Cat. no.
100-125V ac 50Hz	M243-155-G-PL-ZH-C5
200-250V ac 50Hz	M243-155-G-RN-ZH-C5
380-440V ac 50Hz	M243-155-G-RY-ZH-C5
100-125V ac 60Hz	M243-156-G-PL-ZH-C6
200-250V ac 60Hz	M243-156-G-RN-ZH-C6
380-440V ac 60Hz	M243-156-G-RY-ZH-C6
6-30V dc	M243-157-G-BU-ZH-DC
10-80V dc	M243-157-G-NR-ZH-DC
110V dc	M243-157-G-PM-ZH-DC

### DIN96 AC Hours Run Meter

Description	Cat. no.
100-125V ac 50Hz	M244-155-G-PL-ZH-C5
200-250V ac 50Hz	M244-155-G-RN-ZH-C5
380-440V ac 50Hz	M244-155-G-RY-ZH-C5
100-125V ac 60Hz	M244-156-G-PL-ZH-C6
200-250V ac 60Hz	M244-156-G-RN-ZH-C6
380-440V ac 60Hz	M244-156-G-RY-ZH-C6
6-30V dc	M244-157-G-BU-ZH-DC
10-80V dc	M244-157-G-NR-ZH-DC
110V dc	M244-157-G-PM-ZH-DC



## DC Ammeters 90°

### DIN48 DC Ammeters Direct Connected

Description	Cat. no.
1A direct connected, scaled 0-1A	E242-89A-G-LA-LA
5A direct connected, scaled 0-5A	E242-89A-G-LS-LS
10A direct connected, scaled 0-10A	E242-89A-G-MT-MT
15A direct connected, scaled 0-15A	E242-89A-G-ND-ND
20A direct connected, scaled 0-20A	E242-89A-G-NG-NG
25A direct connected, scaled 0-25A	E242-89A-G-NJ-NJ

### DIN48 DC Ammeters Connect via Shunt X/75mV with Fitted Dial Plate - Normal Scaling

Description	Cat. no.
75mV shunt operated, scaled 0-5A	E242-89A-G-EJ-LS
75mV shunt operated, scaled 0-10A	E242-89A-G-EJ-MT
75mV shunt operated, scaled 0-15A	E242-89A-G-EJ-ND
75mV shunt operated, scaled 0-20A	E242-89A-G-EJ-NG
75mV shunt operated, scaled 0-25A	E242-89A-G-EJ-NJ
75mV shunt operated, scaled 0-40A	E242-89A-G-EJ-NP
75mV shunt operated, scaled 0-60A	E242-89A-G-EJ-NW
75mV shunt operated, scaled 0-80A	E242-89A-G-EJ-PD
75mV shunt operated, scaled 0-100A	E242-89A-G-EJ-PK
75mV shunt operated, scaled 0-150A	E242-89A-G-EJ-PZ
75mV shunt operated, scaled 0-200A	E242-89A-G-EJ-RL
75mV shunt operated, scaled 0-250A	E242-89A-G-EJ-RS
75mV shunt operated, scaled 0-300A	E242-89A-G-EJ-RX
75mV shunt operated, scaled 0-400A	E242-89A-G-EJ-SC
75mV shunt operated, scaled 0-500A	E242-89A-G-EJ-SF
75mV shunt operated, scaled 0-600A	E242-89A-G-EJ-SJ
75mV shunt operated, scaled 0-800A	E242-89A-G-EJ-SN
75mV shunt operated, scaled 0-1000A	E242-89A-G-EJ-SS
75mV shunt operated, scaled 0-1500A	E242-89A-G-EJ-TC



### DIN72 DC Ammeters Direct Connected

Description	Cat. no.
1A direct connected, scaled 0-1A	E243-01A-G-LA-LA
5A direct connected, scaled 0-5A	E243-01A-G-LS-LS
10A direct connected, scaled 0-10A	E243-01A-G-MT-MT
15A direct connected, scaled 0-15A	E243-01A-G-ND-ND
20A direct connected, scaled 0-20A	E243-01A-G-NG-NG
25A direct connected, scaled 0-25A	E243-01A-G-NJ-NJ
40A direct connected, scaled 0-40A	E243-01A-G-NP-NP

### DIN72 DC Ammeters Connect via Shunt X/75mV with Fitted Dial Plate - Normal Scaling

Description	Cat. no.
75mV shunt operated, scaled 0-10A	E243-01A-G-EJ-MT
75mV shunt operated, scaled 0-20A	E243-01A-G-EJ-NG
75mV shunt operated, scaled 0-25A	E243-01A-G-EJ-NJ
75mV shunt operated, scaled 0-40A	E243-01A-G-EJ-NP
75mV shunt operated, scaled 0-60A	E243-01A-G-EJ-NW
75mV shunt operated, scaled 0-80A	E243-01A-G-EJ-PD
75mV shunt operated, scaled 0-100A	E243-01A-G-EJ-PK
75mV shunt operated, scaled 0-150A	E243-01A-G-EJ-PZ
75mV shunt operated, scaled 0-200A	E243-01A-G-EJ-RL
75mV shunt operated, scaled 0-250A	E243-01A-G-EJ-RS
75mV shunt operated, scaled 0-400A	E243-01A-G-EJ-SC
75mV shunt operated, scaled 0-600A	E243-01A-G-EJ-SJ
75mV shunt operated, scaled 0-800A	E243-01A-G-EJ-SN
75mV shunt operated, scaled 0-1000A	E243-01A-G-EJ-SS
75mV shunt operated, scaled 0-1500A	E243-01A-G-EJ-TC

## DIN96 DC Ammeters Direct Connected

Description	Cat. no.
1A direct connected, scaled 0-1A	E244-01A-G-LA-LA
5A direct connected, scaled 0-5A	E244-01A-G-LS-LS
10A direct connected, scaled 0-10A	E244-01A-G-MT-MT
15A direct connected, scaled 0-15A	E244-01A-G-ND-ND
20A direct connected, scaled 0-20A	E244-01A-G-NG-NG
25A direct connected, scaled 0-25A	E244-01A-G-NJ-NJ
40A direct connected, scaled 0-40A	E244-01A-G-NP-NP

## DIN96 DC Ammeters Connect via Shunt X/75mV with Fitted Dial Plate - Normal Scaling

Description	Cat. no.
75mV shunt operated, scaled 0-5A	E244-01A-G-EJ-LS
75mV shunt operated, scaled 0-10A	E244-01A-G-EJ-MT
75mV shunt operated, scaled 0-15A	E244-01A-G-EJ-ND
75mV shunt operated, scaled 0-20A	E244-01A-G-EJ-NG
75mV shunt operated, scaled 0-25A	E244-01A-G-EJ-NJ
75mV shunt operated, scaled 0-40A	E244-01A-G-EJ-NP
75mV shunt operated, scaled 0-60A	E244-01A-G-EJ-NW
75mV shunt operated, scaled 0-80A	E244-01A-G-EJ-PD
75mV shunt operated, scaled 0-100A	E244-01A-G-EJ-PK
75mV shunt operated, scaled 0-150A	E244-01A-G-EJ-PZ
75mV shunt operated, scaled 0-200A	E244-01A-G-EJ-RL
75mV shunt operated, scaled 0-250A	E244-01A-G-EJ-RS
75mV shunt operated, scaled 0-300A	E244-01A-G-EJ-RX
75mV shunt operated, scaled 0-400A	E244-01A-G-EJ-SC
75mV shunt operated, scaled 0-500A	E244-01A-G-EJ-SF
75mV shunt operated, scaled 0-600A	E244-01A-G-EJ-SJ
75mV shunt operated, scaled 0-800A	E244-01A-G-EJ-SN
75mV shunt operated, scaled 0-1000A	E244-01A-G-EJ-SS
75mV shunt operated, scaled 0-1500A	E244-01A-G-EJ-TC



## DC Voltmeters 90°

### DIN48 DC Voltmeters

Description	Cat. no.
0-15V direct connected, scaled 0-15V	E242-89V-G-ND-ND
0-30V direct connected, scaled 0-30V	E242-89V-G-NL-NL
0-40V direct connected, scaled 0-40V	E242-89V-G-NP-NP
0-60V direct connected, scaled 0-60V	E242-89V-G-NW-NW
0-100V direct connected, scaled 0-100V	E242-89V-G-PK-PK
0-150V direct connected, scaled 0-150V	E242-89V-G-PZ-PZ
0-200V direct connected, scaled 0-200V	E242-89V-G-RL-RL

### DIN72 DC Voltmeters

Description	Cat. no.
0-15V direct connected, scaled 0-15V	E243-01V-G-ND-ND
0-30V direct connected, scaled 0-30V	E243-01V-G-NL-NL
0-40V direct connected, scaled 0-40V	E243-01V-G-NP-NP
0-60V direct connected, scaled 0-60V	E243-01V-G-NW-NW
0-100V direct connected, scaled 0-100V	E243-01V-G-PK-PK
0-150V direct connected, scaled 0-150V	E243-01V-G-PZ-PZ
0-200V direct connected, scaled 0-200V	E243-01V-G-RL-RL
0-300V direct connected, scaled 0-300V	E243-01V-G-RX-RX
0-400V direct connected, scaled 0-400V	E243-01V-G-SC-SC

### DIN96 DC Voltmeters

Description	Cat. no.
0-15V direct connected, scaled 0-15V	E244-01V-G-ND-ND
0-30V direct connected, scaled 0-30V	E244-01V-G-NL-NL
0-40V direct connected, scaled 0-40V	E244-01V-G-NP-NP
0-60V direct connected, scaled 0-60V	E244-01V-G-NW-NW
0-100V direct connected, scaled 0-100V	E244-01V-G-PK-PK
0-150V direct connected, scaled 0-150V	E244-01V-G-PZ-PZ
0-200V direct connected, scaled 0-200V	E244-01V-G-RL-RL
0-300V direct connected, scaled 0-300V	E244-01V-G-RX-RX
0-400V direct connected, scaled 0-400V	E244-01V-G-SC-SC





## DIN Panel Meter with Selector Switch

### Product Codes – AC Ammeters with Selector Switch

Code	Case size	Full scale deflection	Switch notation
E243-02E-G-LS**-C7-AMP3	72mm	0/5A ac	OFF L1 L2 L3
E244-02E-G-LS**-C7-AMP3	96mm	0/5A ac	OFF L1 L2 L3
E243-022E-G-LS**-C7-AMP3	72mm	0/5/10A ac	OFF L1 L2 L3
E244-022E-G-LS**-C7-AMP3	96mm	0/5/10A ac	OFF L1 L2 L3
E243-02E-G-LA**-C7-AMP3	72mm	0/1A ac	OFF L1 L2 L3
E244-02E-G-LA**-C7-AMP3	96mm	0/1A ac	OFF L1 L2 L3
E243-022E-G-LA**-C7-AMP3	72mm	0/1/2A ac	OFF L1 L2 L3
E244-022E-G-LA**-C7-AMP3	96mm	0/1/2A ac	OFF L1 L2 L3

\*\*Insert application CT primary value.

### Product Codes – AC Voltmeters with Selector Switch

Code	Case size	Full scale deflection	Switch notation	3-phase
E243-02Q-G-PM**-C7-SW6	72mm	0/120V ac	OFF L1L2 L2L3 L3L1	3W
E243-02Q-G-PZ**-C7-SW6	72mm	0/150V ac	OFF L1L2 L2L3 L3L1	3W
E243-02Q-G-PZ-C7-SW6	72mm	0/150V ac	OFF L1L2 L2L3 L3L1	3W
E243-02Q-G-RX-RX-C7-SW6	72mm	0/300V ac	OFF L1L2 L2L3 L3L1	3W
E243-02Q-G-SF-SF-C7-SW3	72mm	0/500V ac	L1L3 L1L2 L2L3 L3N L2N L1N	4W
E243-02Q-G-SJ-SJ-C7-SW3	72mm	0/600V ac	L1L3 L1L2 L2L3 L3N L2N L1N	4W
E244-02Q-G-PZ**-C7-SW6	96mm	0/150V ac	OFF L1L2 L2L3 L3L1	3W
E244-02Q-G-PZ-PZ-C7-SW6	96mm	0/150V ac	OFF L1L2 L2L3 L3L1	3W
E244-02Q-G-RX-RX-C7-SW6	96mm	0/300V ac	OFF L1L2 L2L3 L3L1	3W
E244-02Q-G-SF-SF-C7-SW3	96mm	0/500V ac	L1L3 L1L2 L2L3 L3N L2N L1N	4W
E244-02Q-G-SJ-SJ-C7-SW3	96mm	0/600V ac	L1L3 L1L2 L2L3 L3N L2N L1N	4W

\*\*Insert application scale, e.g. 15kV/110V VT, VT primary and secondary value.



## Selector Switches

A high quality range of panel mounted selector switches. This allows for voltage or current switching of three phases allowing the use of common metering,

The rugged construction and integral fascia is ideal for switchgear and control applications.

### Ammeter Switch

Description	Name plate	Cat. no.
4-position 12A 450V ammeter switch	L1-L2-L3-0	SO3-SAB

### Voltmeter Switch

Description	Name plate	Cat. no.
7-position 12A 450V voltmeter switch	L1L2-L2L3-L3L1-0-L1N-L2N-L3N	SO3-SVD

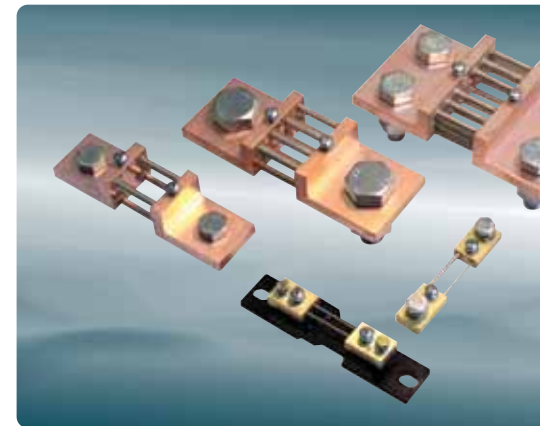
# Shunts

## Series ST\*

Description	Version as per drawings	Dimensions								
		a1	a2	b1	b2	b3	c1	c2	e	h
10A-75mV Class 0.5	A	90	28	20	-	-	8	-	78	-
20A-75mV Class 0.5	A	90	28	20	-	-	8	-	78	-
25A-75mV Class 0.5	A	90	28	20	-	-	8	-	78	-
40A-75mV Class 0.5	A	115	33	25	-	-	8	-	95	-
60A-75mV Class 0.5	A	115	33	25	-	-	8	-	95	-
80A-75mV Class 0.5	A	115	33	25	-	-	8	-	95	-
100A-75mV Class 0.5	A	115	33	25	-	-	8	-	95	-
150A-75mV Class 0.5	A	115	33	25	-	-	8	-	95	-
200A-75mV Class 0.5	B	160	55	30	15	-	10	10	120	30
250A-75mV Class 0.5	B	160	55	30	15	-	10	10	120	30
400A-75mV Class 0.5	B	160	55	40	20	-	10	10	120	30
600A-75mV Class 0.5	B	160	55	40	20	-	10	10	120	30
1000A-75mV Class 0.5	B	180	65	60	30	-	10	10	130	30
1500A-75mV Class 0.5	B	180	65	120	30	60	10		130	30

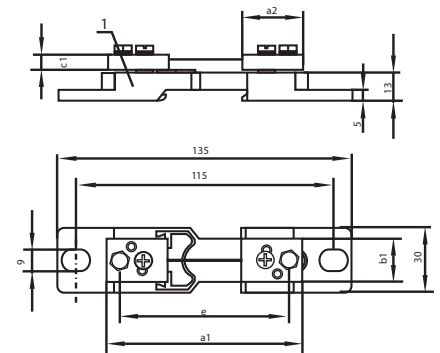
## Current Terminals

Weight	Number of terminals	Hexagon bolt	Washer	Nut	Cat. no.
0.14	2 x 1	M5 x 12	5.3	-	ST1-10/75MV
0.14	2 x 1	M5 x 12	5.3	-	ST1-20/75MV
0.14	2 x 1	M5 x 12	5.3	-	ST1-25/75MV
0.17	2 x 1	M8 x 16	8.4	-	ST1-40/75MV
0.17	2 x 1	M8 x 16	8.4	-	ST1-60/75MV
0.17	2 x 1	M8 x 16	8.4	-	ST1-80/75MV
0.17	2 x 1	M8 x 16	8.4	-	ST1-100/75MV
0.17	2 x 1	M8 x 16	8.4	-	ST1-150/75MV
0.63	2 x 1	M12 x 40	13	M12	ST1-200/75MV
0.63	2 x 1	M12 x 40	13	M12	ST2-250/75MV
0.92	2 x 1	M16 x 45	17	M16	ST2-400/75MV
1.00	2 x 1	M16 x 45	17	M16	ST2-600/75MV
1.75	2 x 1	M20 x 50	21	M20	ST2-1000/75MV
2.30	2 x 2	M16 x 45	17	M16	ST2-1500/75MV

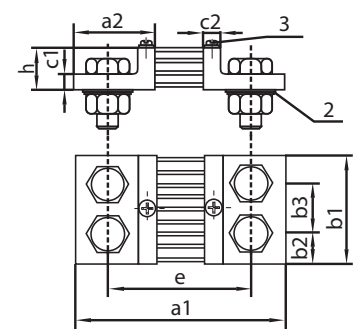


## Dimensions

### Version A



### Version B



- 1 - Insulating base
- 2 - Spring washer
- 3 - Screw with cruciform cavity

## Energy Division

With 4000 employees and more than 10,000 customers worldwide, the Energy Division represents a very significant part of Tyco Electronics. Based in headquarters in Ottobrunn, near Munich, Germany, the Energy Division is a global supplier to power utilities and power industry customers, to equipment manufacturers and transport systems. These customers are served by dedicated R&D teams, sales representatives in more than 80 countries, a professional marketing organisation and 25 manufacturing sites in five continents.

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