



Energy Division

Crompton Instruments Tape Wound Measuring and Protection Current Transformers

Tape wound Measuring and Protection Current transformers

A comprehensive range of measuring and protective duty ring current transformers for installation where reliability, accuracy and quality are required.

Construction

High grade silicon iron cores are carefully selected, then insulated and protected by a polypropylene covering on which the secondary winding is toroidally wound by precision winding machines. Multi layers of polyester and PVC are then applied to provide a tough moisture resistant coating.

Specifications

System voltage:	720V maximum
Test voltage:	3kV for 1 minute
System frequency:	50/60Hz
Overload withstand:	1.2 x rated current continuously
Short circuit thermal current (Ith)*:	60 x rated primary current for 1 second
Dynamic current (Idyn)*:	= 2.55 x Ith
Service temperature:	-20°C to 70°C
Secondary current:	5A or 1A
Complies with:	IEC 60044-1, BSEN 60044-1
Saturation coefficient:	<6
Humidity:	Up to 95% RH (non condensing)
Insulation class:	BSEN 60085 Class Y
Mounting Hardware:	Foot mounted

Loss in copper wires between instrument and CT for 5A secondary

Wire section in mm ²	Loss in VA (for both wires)					
	1m	2m	4m	6m	8m	10m
1.5	0.60	1.19	2.38	3.57	4.76	5.95
2.5	0.36	0.71	1.43	2.14	2.86	3.57
4	0.22	0.45	0.89	1.34	1.79	2.23
6	0.15	0.30	0.60	0.89	1.19	1.49
10	0.09	0.18	0.36	0.54	0.71	0.89

Loss in copper wires between instrument and CT for 1A secondary

Wire section in mm ²	Loss in VA (for both wires)					
	10m	20m	40m	60m	80m	100m
1	0.36	0.71	1.43	2.14	2.86	3.57
1.5	0.24	0.48	0.95	1.43	1.90	2.38
2.5	0.14	0.29	0.57	0.86	1.14	1.43
4	0.09	0.18	0.36	0.54	0.71	0.89
6	0.06	0.12	0.24	0.36	0.48	0.60
10	0.04	0.07	0.14	0.21	0.29	0.36



Features

- Available in a wide range of transformer ratings
- Accuracy up to Class 0.5
- Measuring or protective types

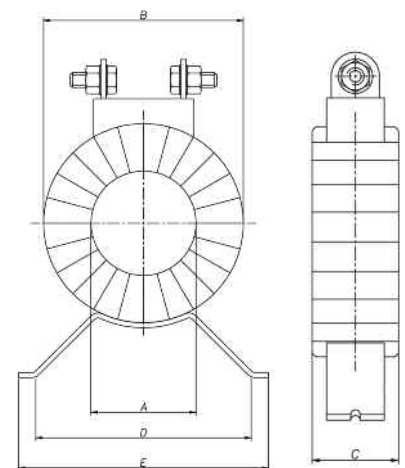
Benefits

- Long product life

Applications

- Switchgear
- Control panels
- Overload protection
- Control devices

Dimensions



* Thermal current (Ith) & dynamic current (Idyn)

Ith is the highest primary current (effective value), the Idyn is the highest primary current (Peak Value) that the CT can support for 1 second without damage, owing to excessive overloads with secondary short circuits.



MR Series Measuring Range

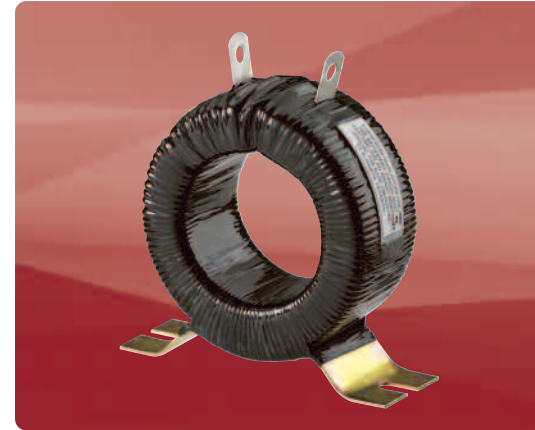
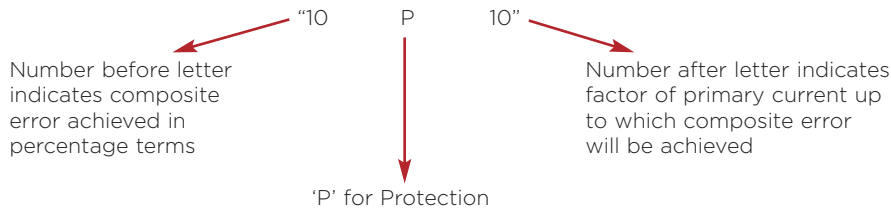
MR transformers are used to accurately measure high alternating primary currents, converting the primary current into a proportional secondary current as required for measurement and instrumentation. They are available in 5 amp or 1 amp secondary versions.

Part number	Ratio range	Class 3	Class 1	Class 0.5	A	B	C	D	Approx. weight
MR-28-40/5A	40/5	1.5	-	-	28	70	40	77.5	0.5
MR-28-50/5A	50/5	2	-	-	28	70	40	77.5	0.5
MR-28-60/5A	60/5	2.5	-	-	28	70	40	77.5	0.5
MR-28-40/1A	40/1	1.5	-	-	22	60	50	70	0.5
MR-28-50/1A	50/1	2	-	-	22	60	40	70	0.5
MR-28-60/1A	60/1	2.5	-	-	22	60	40	70	0.5
MR-42-80/5A	80/5	1.5	-	-	42	80	30	86	0.5
MR-42-100/5A	100/5	3.75	1.25	-	42	80	30	86	0.5
MR-42-150/5A	150/5	5	2.5	1	42	80	30	86	0.5
MR-42-200/5A	200/5	7.5	5	2.5	42	80	30	86	0.5
MR-42-250/5A	250/5	10	5	2.5	42	80	30	86	0.5
MR-42-80/1A	80/1	1.5	-	-	40	72	26	70	0.5
MR-42-100/1A	100/1	5	1.5	-	40	72	45	70	0.5
MR-42-150/1A	150/1	5	3	-	40	72	40	70	0.5
MR-42-200/1A	200/1	7.5	5	3	40	72	40	70	0.5
MR-42-250/1A	250/1	10	7.5	2.5	40	72	40	70	0.5
MR-45-300/5A	300/5	10	7.5	3.75	45	80	30	86	0.5
MR-45-400/5A	400/5	15	7.5	5	45	80	30	86	0.5
MR-45-300/1A	300/1	10	10	5	45	83	32	100	0.5
MR-45-400/1A	400/1	15	10	5	45	83	32	100	0.5
MR-60-400/5A	400/5	15	7.5	5	60	100	30	86	0.5
MR-60-500/5A	500/5	15	10	5	60	100	30	86	0.5
MR-60-600/5A	600/5	20	10	7.5	60	100	30	86	0.5
MR-60-400/1A	400/1	15	7.5	5	58	100	30	100	0.5
MR-60-500/1A	500/1	20	15	5	58	100	32	100	0.5
MR-60-600/1A	600/1	20	15	10	58	100	32	100	0.5
MR-85-800/5A	800/5	20	10	7.5	85	124	30	86	0.5
MR-85-1000/5A	1000/5	30	15	10	85	124	30	86	1
MR-85-1200/5A	1200/5	30	15	10	85	124	30	86	1
MR-85-1500/5A	1500/5	30	15	10	85	124	30	86	1
MR-85-1600/5A	1600/5	30	15	10	85	124	30	86	1
MR-85-800/1A	800/1	20	15	10	84	122	30	100	0.5
MR-85-1000/1A	1000/1	25	20	15	94	135	30	100	1
MR-85-1200/1A	1200/1	25	20	15	94	135	30	100	1
MR-85-1500/1A	1500/1	25	20	15	94	135	30	100	1
MR-85-1600/1A	1600/1	25	20	15	94	135	30	100	1
MR-125-2000/5A	2000/5	30	20	15	125	160	30	86	1
MR-125-2500/5A	2500/5	30	20	15	125	160	30	86	1
MR-125-3000/5A	3000/5	30	20	15	125	160	30	86	1
MR-125-4000/5A	4000/5	30	20	15	125	160	30	86	1
MR-125-2000/1A	2000/1	25	20	15	132	175	30	150	1.5
MR-125-2500/1A	2500/1	25	20	15	132	175	30	150	1.5
MR-125-3000/1A	3000/1	25	20	15	125	180	32	150	1.5
MR-125-4000/1A	4000/1	25	20	15	140	215	45	150	4.5

PR Series Protection Range

IEC60044-1/BSEN60044-1 commonly define protection current transformers in terms of composite error at an accuracy limit factor. In simple terms this means how accurate the current transformer will remain when the primary current flowing is many times higher than in normal conditions i.e. in a fault situation.

The classification of protection current transformers follows the following simple formula:



Manufacturers of protection devices will normally specify the classification for the protection current transformer intended to operate the particular protection device concerned.

In addition the classification of protection current transformers indicates accuracy class:

- 5P - current transformer will have a ratio error of 1% and phase error not exceeding 60 minutes
- 10P - current transformer will have a ratio error of 3% (no level of phase error specified).

The PR series is a range of two of the most popular classifications of protection current transformers, 5P10 and 10P10. Other classifications are possible (such as 5P20 or 10P20). Please consult factory for a quotation should you require an alternative classification or a current transformer with dimensions different to those set out below.

Part number	Ratio range	VA burden	Accuracy Class	A	B	C	D	Approx. weight
PR-35-100/5A-2.5	100/5	2.5	10P10	35	98	60	100	2
PR-35-100/5A-5	100/5	5	10P10	35	98	90	100	3
PR-35-120/5A-2.5	120/5	2.5	10P10	35	98	55	100	2
PR-35-120/5A-5	120/5	5	10P10	35	98	85	100	3
PR-35-150/5A-2.5	150/5	2.5	5P10 & 10P10	35	98	50	100	1.5
PR-35-150/5A-5	150/5	5	5P10 & 10P10	35	98	70	100	2.5
PR-35-200/5A-2.5	200/5	2.5	5P10 & 10P10	35	98	40	100	1
PR-35-200/5A-5	200/5	5	5P10 & 10P10	35	98	60	100	2
PR-35-250/5A-2.5	250/5	2.5	5P10 & 10P10	35	98	35	100	1
PR-35-250/5A-5	250/5	5	5P10 & 10P10	35	98	55	100	1.5
PR-55-300/5A-5	300/5	5	5P10 & 10P10	55	98	75	100	1.5
PR-55-300/5A-15	300/5	15	5P10 & 10P10	55	125	90	100	4
PR-55-400/5A-5	400/5	5	5P10 & 10P10	55	98	60	100	1.5
PR-55-400/5A-15	400/5	15	5P10 & 10P10	55	125	65	100	3
PR-55-500/5A-5	500/5	5	5P10 & 10P10	55	98	55	100	1
PR-55-500/5A-15	500/5	15	5P10 & 10P10	55	125	60	100	2.5
PR-55-600/5A-5	600/5	5	5P10 & 10P10	55	98	50	100	1
PR-55-600/5A-15	600/5	15	5P10 & 10P10	55	125	55	100	2.5
PR-65-800/5A-5	800/5	5	5P10 & 10P10	65	110	40	100	1
PR-65-800/5A-15	800/5	15	5P10 & 10P10	65	110	80	100	3
PR-80-1000/5A-15	1000/5	15	5P10 & 10P10	80	125	70	100	2
PR-80-1200/5A-15	1200/5	15	5P10 & 10P10	80	125	65	100	2.5
PR-90-1500/5A-15	1500/5	15	5P10 & 10P10	90	140	55	100	2.5
PR-90-1600/5A-15	1600/5	15	5P10 & 10P10	90	140	55	100	2.5
PR-100-2000/5A-15	2000/5	15	5P10 & 10P10	100	155	55	100	3
PR-110-2500/5A-15	2500/5	15	5P10 & 10P10	110	165	45	100	3
PR-120-3000/5A-15	3000/5	15	5P10 & 10P10	120	180	45	150	3

Consult Factory for availability and lead time on 1A secondary for protection range 1A current transformer dimensions may vary by up to 10%.



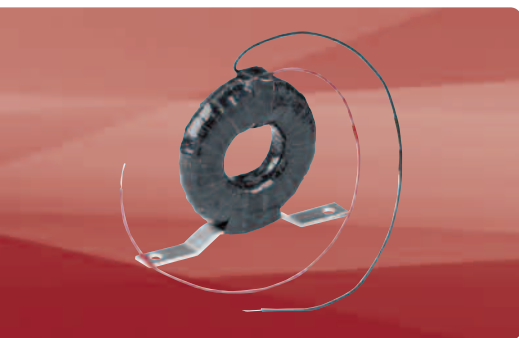
Class PX Current Transformers

In some balanced protection systems where sensitivity and stability levels required are high, classes 5P10 or 10P10 may not be adequate. In these situations a Class PX current transformer will usually be specified. Class PX as defined in IEC60044-1/BSEN60044-1 allows the manufacturer of a protection device to detail more specific requirements of the current transformer so as to achieve a more sensitive protection scheme.

Typically this will involve specifying the following information for the current transformer:

- 1) Turns ratio
- 2) Minimum kneepoint voltage
- 3) Maximum secondary resistance
- 4) Maximum excitation current at the rated minimum kneepoint voltage

To enquire about Class PX current transformers consult the factory with the above information together with any physical limiting dimensions and the aperture size required. If not all the above information is available, details of relay type, lead run from current transformer to relay and the fault current expected to flow through the zone protected by the current transformers will be required in order to provide a quotation.



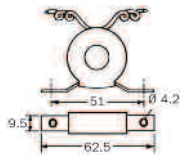
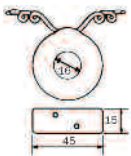
Miniature Current Transformers

Specifications

Primary current range:	10A-100A
Secondary output:	10mA-100mA
VA output:	0.015VA - 0.15VA
System Frequency:	50/60Hz
Service temperature:	0°C to + 80°C
Insulation class:	BSEN60085 Class Y
Operating voltage:	720V AC
Test Voltage:	2KV DC
Accuracy	
20-80%:	1.5%
81-120%:	1%

Ring type (P)

Foot mounting option (F)



Part number	Ratio range	Type
773-01-P-FL	10A-100A/10mA-100mA	Ring type, flexible lead 150mm
773-02-P-FL	10A-100A/10mA-100mA	Ring type, flexible lead 450mm
773-01-F-FL	10A-100A/10mA-100mA	Ring type, foot mounting, flexible lead 150mm



Moulded Case (MC)

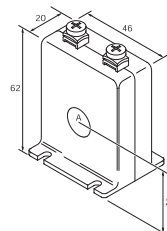
Specifications

Service temperature:	-20°C to + 85°C
Insulation class:	BSEN60085 Class Y

Part number	Ratio range	Type
773-01-MC	10A-100A/10mA-100mA	Moulded case

Dimensions

A = 16mm transformer ratings
 Fixing centres 30 x 30mm
 M3.5 terminal screw and clamp



DB Series Current Transformers

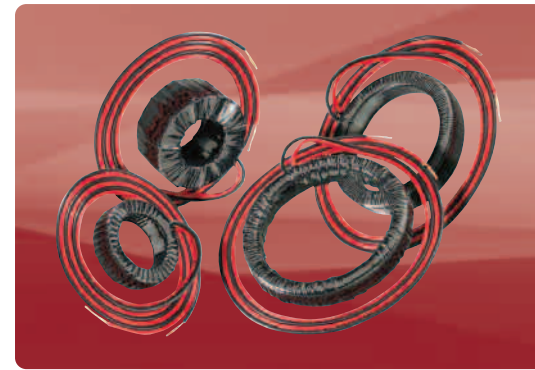
A range of ring type current transformers with one metre flying leads, suitable for primary currents from 60-2500A with 5A secondaries. These cost effective current transformers offer a time saving and easy solution where installation of conventional foot/busbar mount is not practical due to space or location.

The long flying leads provide a consistent and versatile connection to any measuring/indicating equipment which can then easily be terminated wherever convenient.

Specifications

System voltage:	0.72kV
System frequency:	50/60Hz
Overload withstand:	1.2 times rated current continuously
Insulation class:	BSEN60085 Class Y
Operating temperature:	20°C to +70°C
Humidity:	5 to 95% relative humidity (noncondensing)
Compliant with:	IEC60044-1, BSEN60044-1
Accuracy:	Class 3
Wiring length:	1 metre

Tyco Electronics Crompton stock code	Ratio	VA	Approx. Dimensions			Approx. Weight Grams
			OD	ID	H	
DB-32-60/5A	60/5	3.75	70	32	36	600
DB-32-100/5A	100/5	3.75	70	32	20	330
DB-32-150/5A	150/5	5	70	32	20	340
DB-37-200/5A	200/5	5	62	37	20	170
DB-37-250/5A	250/5	5	62	37	20	175
DB-37-300/5A	300/5	5	62	37	20	185
DB-54-400/5A	400/5	5	80	54	20	260
DB-54-500/5A	500/5	5	80	54	20	270
DB-54-600/5A	600/5	5	80	54	20	285
DB-74-800/5A	800/5	5	102	74	20	415
DB-74-1000/5A	1000/5	5	102	74	20	445
DB-74-1200/5A	1200/5	5	102	74	20	475
DB-92-1600/5A	1600/5	5	120	92	20	415
DB-92-2000/5A	2000/5	5	120	92	20	460
DB-92-2500/5A	2500/5	5	120	92	20	515



Features

- High quality comprehensive
- Accuracy class 3
- 1 metre flying leads

Benefits

- Faster installation
- Less field connections
- Space saving solution
- Time saving solution (ie. no screws to tighten)
- No vibration issues when fitted in alternator box
- Versatile with regard to fitting location
- Cost effective

Applications

- Switch gear
- Distribution system
- Generator sets
- Control panels

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 organization and 25 manufacturing sites in five continents.

While Tyco Electronics and its affiliates referenced herein have made every reasonable effort to ensure the accuracy of the information contained in this catalogue, Tyco Electronics cannot assure that this information is error free. For this reason, Tyco Electronics does not make any representation or offer any guarantee that such information is accurate, correct, reliable or current. Tyco Electronics reserves the right to make any adjustments to the information at any time. Tyco Electronics expressly disclaims any implied warranty regarding the information contained herein, including, but not limited to, the implied warranties of merchantability or fitness for a particular purpose. Tyco Electronics' only obligations are those stated in Tyco Electronics' Standard Terms and Conditions of Sale. Tyco Electronics will in no case be liable for any incidental, indirect or consequential damages arising from or in connection with, including, but not limited to, the sale, resale, use or misuse of its products. Users should rely on their own judgement to evaluate the suitability of a product for a certain purpose and test each product for its intended application. TE (logo) and Tyco Electronics are trademarks of the Tyco Electronics group of companies and its licensors. Crompton is a trademark of Crompton Parkinson and is used by Tyco Electronics under a licence. Other Trademarks mentioned herein are the property of their respective owners.

Energy Division – economical solutions for the electrical power industry: cable accessories, connectors & fittings, electrical equipment, instruments, lighting controls, insulators & insulation enhancement and surge arresters.

Tyco Electronics UK Ltd
Energy Division
Freebournes Road
Witham, Essex CM8 3AH

Phone: +44 (0)870 870 7500
Fax: +44 (0)870 240 5287
Email: electrical@tycoelectronics.com

www.crompton-instruments.com
<http://energy.tycoelectronics.com>

 **Tyco Electronics**

Our commitment. Your advantage.