# PowerLogic<sup>™</sup> Current Transformers (CT) Technical Datasheet

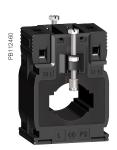
## IEC certified Solid core and Split core types

Schneider Electric is the global specialist in energy management with the most complete power monitoring product line. Current Transformers are essential components designed to be used with Schneider Electric's extensive power monitoring product portfolio. From simple energy meters to world class power quality meters, these proven products satisfy any requirement.

#### Solid core CTs



METSECT5CCxxx



METSECT5MAxxx



METSECT5DCxxx



METSECT5VVxxx

### Split core CTs



METSECT5HAxxx



METSECT5GAxxx



METSECT5GJxxx



METSECT5HJxxx



These current transformers from Schneider Electic are a comprehensive offer, ideally suited throughout the entire low voltage network, from 40 A to 6000 A. They deliver secondary current (0-5 A) proportional to the current measured at the primary. They can be used in combination with measurement devices (switchboard instrumentation, Ammeters, kilowatt-hour meters, power-monitoring units, control relays etc.). CTs with low VA burden allows them to be used in combination of measurement equipments.

#### The solution for

- Perfect for new and existing installations and expansion projects in a variety of markets:
- Commercial buildings
- Industrial facilities
- Medical facilities
- Data centers
- Education
- Oil & Gas

#### **Benefits**

- Safety: sealable insulating cover
- Installation: on symmetrical DIN rail, on mounting plate, on busbar
- Well adpated CT as the accuracy class is better than rated accuracy
- Multiple secondary terminal options for different mounting profile
- Current Transformers for coaxial cable
- Current Transformers for vertical or horizontal bar
- Current Transformers for cable or bar profile
- Compact size suitable for different sizes of conductors
- Tropicalized rating for harsh environmental condition
- Adaptable for different conductor profile and primary current intensity

#### **Features**

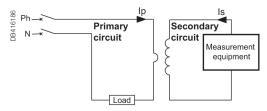
- A broad selection of ratings: from 40 A to 6000 A Ip with 120% max. range
- Fully compatible with Schneider Electric's complete portfolio of industry leading metering products as well as Third Party measurement devices.
- Safety through sealable insulating cover
- Compliance with IEC measurment standards with accuracy class ranges from Class 0.5 to Class 3
- Higher safety factor during installation and for facility
- For indoor use

#### Conformity of standards

- BS / EN 61869-1:2009
- BS / EN 61869-2:2012
- BS / EN 63000:2018
- VDE 0414
- Green Premium Ecolabel
- CE / UKCA certified
- EAC, Metrology

#### Ip/5 A ratio

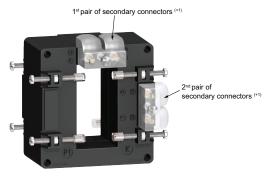
When the primary is energized, the measurement equipment nearly acts as a short circuit which keeps the secondary voltage very low. This voltage will increases significantly if the short circuit is removed. Hence, always keep the secondary circuit connected to low impedence path or current signal terminals of the measuring instrument.



Application diagram of a CT.

Ip - Primary Current

#### CTs with multi secondary output



(+1) Two pairs of secondary connectors are provided (parallel internal wiring - only one secondary winding) for easier cable access. 1 lateral + 1 on one extremity.

Hence, only one pair of secondary connectors must be used at a time.

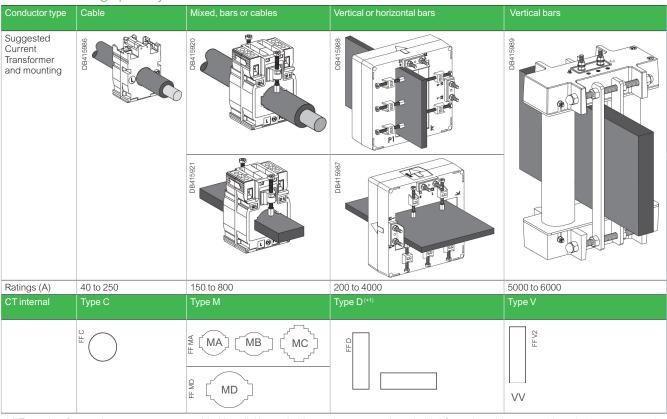
#### CT selection - conductor rating aspects

- The choice depends on the conductor profile and the maximum intensity of the primary circuit.
- · CTs are available in different form factors and sizes to meet varied applications

Primary current can be measured in two ways:

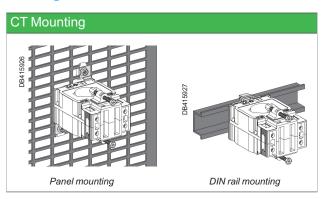
- CT with let-through primary
- CT with connection of primary by screws and nuts

#### CT with let-through primary



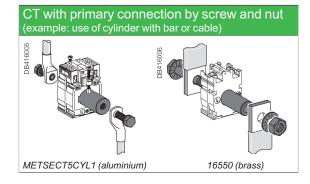
<sup>(\*1)</sup> Two pairs of secondary connectors are provided (parallel internal wiring - only one secondary winding) for easier cable access. 1 lateral + 1 on one extremity. Hence, only one pair of secondary connectors must be used at a time.

#### Mounting method



#### Specific mounting: use of cylinder

A cylindrical metallic spacer ensures a proper CT positioning when the conductor or the CT cannot be positioned perpendicular. Secured by bolt + nut.



NOTE: This document is not intended to be used as an installation guide.

#### CT selection criterion - Electrical aspect of I primary (Ip)/5 A

- We recommend that you choose the ratio immediately higher than the maximum load current. Example: Maximum load current = 1103 A; ratio chosen = 1250/5 (Ip = 1250 or Inom = 1250).
- For lower ratings: From 40/5 to 75/5 and for an application with digital devices, we recommend that you choose the next higher rating of Ip, for example 50/5 for 40/5, 60/5 for 50/5, and so on.
- Specific case of the motor starter: to measure motor starter current, you must choose a CT with primary current Ip = Id/2 (Id = motor starting current).

#### Validation of measurement solution according to accuracy class

It consists in controlling the right adaptation of the CT on the accuracy class aspect. The accuracy class is specified in the project. The total dissipated power of the measurement circuit (meter + cables) should not be superior to the specified limit of the CT. This limit is for different standard classes. If necessary, the choice of the cable section, the CT or meter should be modified to fit the requirement.

Copper cable cross-section (mm²)	Approximate Power burden at 20 °C (VA)
1	1
1.5	0.685
2.5	0.41
4	0.254
6	0.169
10	0.0975
16	0.062

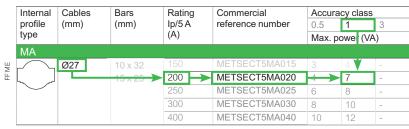
Schneider Electric make power monitoring device	Maximum VA burden at Nominal current (secondary) input (VA)
Analog Ammeter, form factor 72 x 72 mm / 96 x 96 mm	1.1
Digital ammeter	0.3
PM8000	0.15
PM3000 / iEM3200	0.3
PM5000 / PM2000	0.15
PM / EM1000H / EM64xxH	0.15

For each temperature variation per 10 °C bracket, the power drawn up by the cables increases by 4 %.

#### Application example

Project specification: 200 A, in Ø27 mm cable, accuracy class 1. Our choice is METSECT5MA020.

For this CT selected on the chart (next page), the maximum VA burden is 7 VA (for "Accuracy class 1" which is specified in the project).



Control of the conformity of the measurement chain:

- PM3000 multi-meter: 0.3 VA.
- 4 m length of 2.5 mm<sup>2</sup> cable: 0.41 x 4 = 1.64 VA.

Calculated burden: 0.3 + 1.64 = 1.94 VA (< 7 VA)

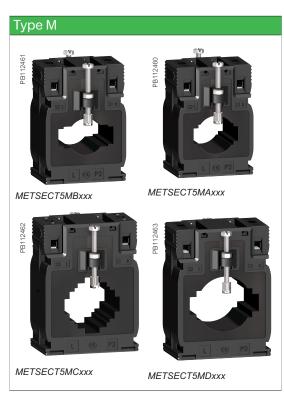
Conclusion: this CT is well adapted as the accuracy class will be even better than 1.

#### Typical limits of current error and phase displacement error for measuring current transformers (classes from 0.1 to 1)

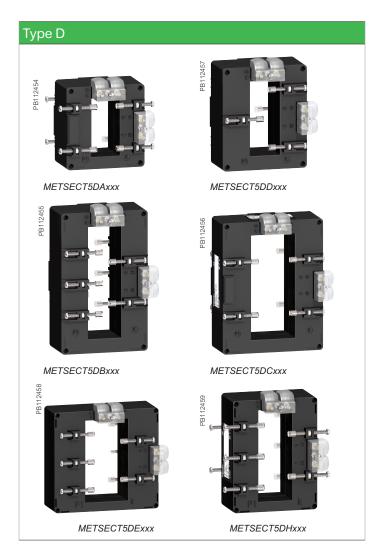
Accuracy			atio) error at	percentage	± Phase displacement at percentage of rated current as shown below								
Class of rated current shown below						Min	utes		Centiradians				
	5	20	100	120	5 20 100 120				5	20	100	120	
0.1	0.4	0.2	0.1	0.1	15	8	5	5	0.45	0.24	0.15	0.15	
0.2	0.75	0.35	0.2	0.2	30	15	10	10	0.9	0.45	0.3	0.3	
0.5	1.5	0.75	0.5	0.5	90	45	30	30	2.7	1.35	0.9	0.9	
1.0	3.0	1.5	1.0	1.0	180	90	60	60	5.4	2.7	1.8	1.8	



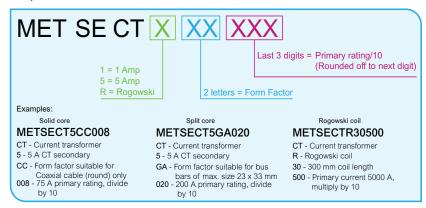




General characterist	ics
Secondary current Is (A)	5 A (S1-S2 terminals, multiple secondary terminal options for different mounting profile)
Maximum voltage rating Ue (V)	720 V
Dielectric strength test	3 kV, 50 Hz for one minute
Frequency (Hz)	50/60 Hz nominal (47 - 63 Hz)
Instrument security/ safety factor (FS/sf)	40 to 4000 A: FS ≤ 5 5000 to 6000 A: FS ≤ 10
Rated short time thermal current (Ith)	60 times the Ip current for 1 s (max 60 kA)
Rated dynamic current (Idyn)	2.5 lth
Degree of protection	IP20
Operating temperature	Tropicalised range: -25 to 60 °C (for Ip upto 1000 A), -25 to 50 °C (for Ip 1250 A up to 6000A) Relative humidity - 5 % to 95 %
Storage temperature	-40°C to +85°C
Compliance with standards	BS / EN 61869-1:2009, BS / EN 61869-2:2012, BS / EN 63000:2018 VDE 0414
Secondary connection (as per model)	by terminals for lug or by tunnel terminals or by screws
Pollution degree	2
Installation category	III
Insulation class	В
Altitude	≤ 3000 m (9843 ft)



#### Representation of commercial reference numbers for CTs



### Commercial reference scheme

CT with let-through primary	CT internal	Internal profile type and dimension	Fastening	lp/5 A rating	Accu	racy clas	ss VA	CT Commercial reference	Accessories commercial reference	
	type	in mm	mode	(A) <sup>(+1)</sup>	0.5	1	3	reference	Cylinder	Sealable cover
Type C - solid-core CT (cable profile)										
				40	-	-	1	METSECT5CC004		
a & a				50	-	1.25	1.5	METSECT5CC005		
DB415986				60	-	1.25	2	METSECT5CC006		
190		8	Adapter for	75	-	1.5	2.5	METSECT5CC008		
	CC		DIN rails mounting plate	100	2	2.5	3.5	METSECT5CC010	METSECT5CYL1	Included
		Ø21	mounting plate	125	2.5	3.5	4	METSECT5CC013		
				150	3	4	5	METSECT5CC015		
				200	4	5.5	6	METSECT5CC020		
				250	5	6	7	METSECT5CC025		
Type M - solid-core CT (mixed: cable/	bar profile)									
	MB	FF MB		250	3	4	-	METSECT5MB025	-	METSECT5COVER
				300	4	6	-	METSECT5MB030		
		Ø26 12 x 40 15 x 32		400	6	8	-	METSECT5MB040		
DB415920		A L		150	3	5	-	METSECT5MA015		METSECT5COVER
				200	4	7	-	METSECT5MA020		
	MA	<u> </u>		250	6	8	-	METSECT5MA025	METSECT5CYL2	
191		10 x 32		300	8	10	-	METSECT5MA030		
		Ø27 10 x 32 15 x 25		400	10	12	-	METSECT5MA040		
			Adapter for DIN rails	250	3	5	-	METSECT5MC025		
		W / Y	mounting plate	300	5	8	-	METSECT5MC030		
	MC			400	8	10	-	METSECT5MC040	_	METSECT5COVER
250	IVIO			500	10	12	-	METSECT5MC050		WETGEGTGGGVER
DB415921		10 x 40		600	12	15	-	METSECT5MC060		
		Ø32 20 x 32 25 x 25		800	10	12	-	METSECT5MC080		
		OM C		500	4	6	-	METSECT5MD050		METSECT5COVER
	MD			600	6	8	-	METSECT5MD060	-	
		10 x 50 Ø40 20 x 40		800	10	12	-	METSECT5MD080		

 $<sup>^{\</sup>scriptscriptstyle(+1)}$  Maximum rated current (Imax) is 120% of the primary current (Ip).

Please contact your Schneider Electric representative for complete ordering information.

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### Solid Core CTs

## Commercial reference scheme (contd.)

CT with let-through primary	CT internal	Internal profile type and dimension	Fastening	lp/5 A rating	Accui	racy clas	ss VA	CT Commercial	Accessories cor	mmercial reference
	type	in mm	mode	(A) <sup>(+1)</sup>	0.5	1	3	reference	Cylinder	Sealable cover
Type D(+2) - solid-core CT (vertical or h	horizontal bar	r - dual secondary terminals	s)							
				400	4	8	-	METSECT5DA040		
				500	8	10	-	METSECT5DA050		
		0 H		600	8	12	-	METSECT5DA060		
	DA		Insulated locking screw	800	12	15	-	METSECT5DA080	-	Included
888		32 x 65		1000	15	20	-	METSECT5DA100		
DB415988				1250	15	20	-	METSECT5DA125(+3)		
				1500	20	25	-	METSECT5DA150(+3)		
				1000	6	10	-	METSECT5DB100		
		# O		1250	8	12	-	METSECT5DB125(+3)		
PI	DB	E	Insulated	1500	10	15	-	METSECT5DB150(+3)		Included
ba	DB		locking screw	2000	15	20	-	METSECT5DB200 <sup>(+3)</sup>	=	included
		38 x 127		2500	20	25	-	METSECT5DB250(+3)		
				3000	25	30	-	METSECT5DB300 <sup>(+3)</sup>		
	DC			2000	25	30	-	METSECT5DC200(+3)		
		52 x 127	Insulated locking screw	2500	30	50	-	METSECT5DC250 <sup>(+3)</sup>	-	Included
2987				3000	30	50	-	METSECT5DC300(+3)		
DB415987				4000	30	50	-	METSECT5DC400(+3)		
		DD 24 x 84	Insulated locking screw	1000	10	15	-	METSECT5DD100		
	DD			1250	12	15	-	METSECT5DD125(+3)	-	Included
				1500	15	20	-	METSECT5DD150(+3)		
		0		1000	12	15	-	METSECT5DE100		
		E	Insulated	1250	15	20	-	METSECT5DE125(+3)		
	DE		locking screw	1500	20	25	-	METSECT5DE150(+3)	-	Included
		54 x 102		2000	20	25	-	METSECT5DE200 <sup>(+3)</sup>		
		٥		1250	12	15	-	METSECT5DH125(+3)		
	DH	0 #	Insulated locking screw	1500	12	15	-	METSECT5DH150(+3)	-	Included
		38 x 102	.soming solew	2000	20	25	-	METSECT5DH200(+3)		
Type V - solid-core CT (vertical ba	ar profile)									
DB4 1 5989	∑	lockir screw	Insulated locking screw	5000	60	-	-	METSECT5VV500(+3)		Included
				6000	70	-	-	METSECT5VV600 <sup>(+3)</sup>	-	

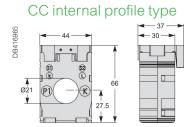
Please contact your Schneider Electric representative for complete ordering information.

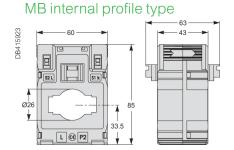
<sup>(\*1)</sup> Maximum rated current (Imax) is 120% of the primary current (Ip).

(\*2) Two pairs of secondary connectors are provided (parallel internal wiring - only one secondary winding) for easier cable access. One lateral and one on extremity. Hence, only one pair of secondary connector must be used at a time.

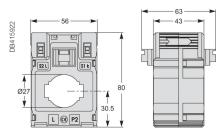
(\*3) Operating temperature: -25 to +50 °C (-13 to +122 °F)

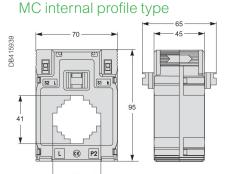
### Solid core CT dimensions



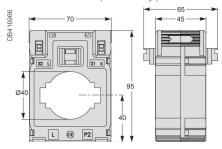


MA internal profile type

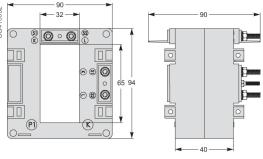




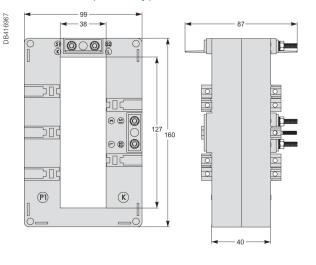
MD internal profile type



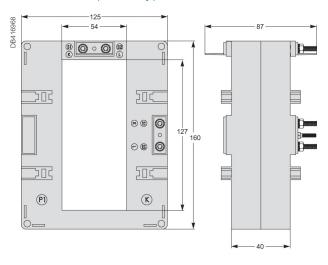




#### DB internal profile type

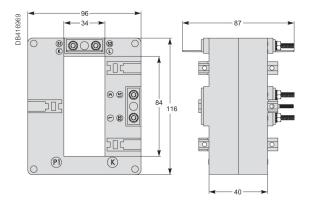


#### DC internal profile type

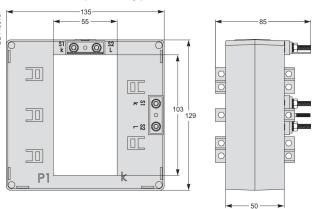


## Solid core CT dimensions contd.

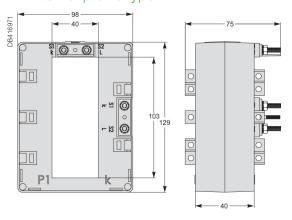
#### DD internal profile type



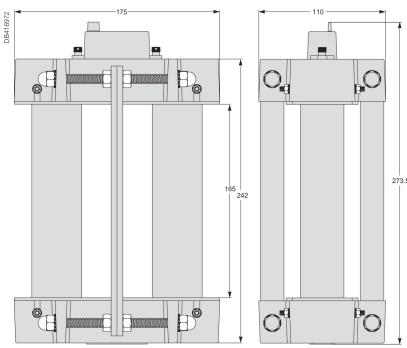
#### DE internal profile type



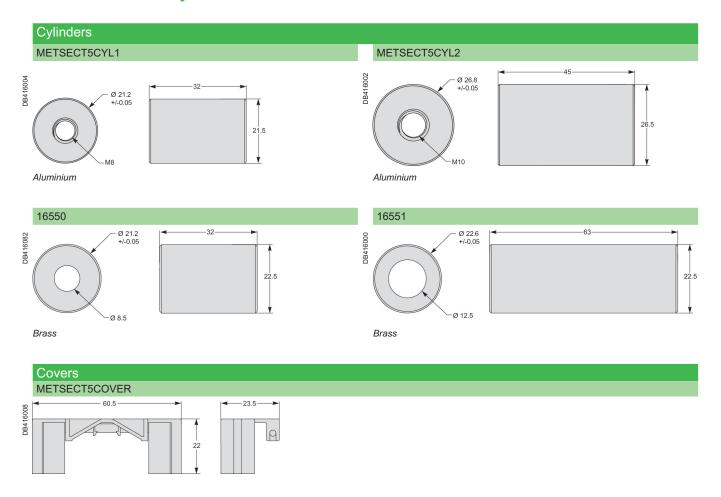
#### DH internal profile type



#### VV internal profile type



## Solid core cylinders dimensions



See the appropriate  ${f Installation}$   ${f Guide}$  for correct installation instructions.

### Split core CTs

These current transformers from Schneider Electic are a comprehensive offer, ideally suited throughout the entire low voltage network, from 100 A to 4000 A. They deliver secondary current (0-5 A) proportional to the current measured at the primary. They can be used in combination with measurement devices (switchboard instrumentation, Ammeters, kilowatt-hour meters, power-monitoring units, control relays etc.). CTs with low VA burden allows them to be used in combination of measurement equipments.

#### The solution for

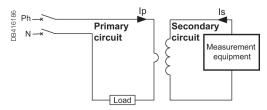
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- Commercial buildings
- Industrial facilities
- · Medical facilities
- · Data centers
- Education
- Oil & Gas

#### **Benefits**

- Installation: on symmetrical DIN rail, on mounting plate, on busbar
- Well adpated CT as the accuracy class is better than rated accuracy
- Current Transformers for coaxial cable (input range 100 A to 1000 A)
- Current Transformers for bus bar (input range 100 A to 4000 A)
- Current Transformers for cable or bar profile
- Compact size suitable for different sizes of conductors
- Tropicalized rating for harsh environmental condition
- Adaptable for different conductor profile and primary current intensity

#### Ip/5 A ratio

When the primary is energized, the measurement equipment nearly acts as a short circuit which keeps the secondary voltage very low. This voltage will increases significantly if the short circuit is removed. Hence, always keep the secondary circuit connected to low impedence path or current signal terminals of the measuring instrument.



Application diagram of a CT.

Ip - Primary Current

#### **Features**

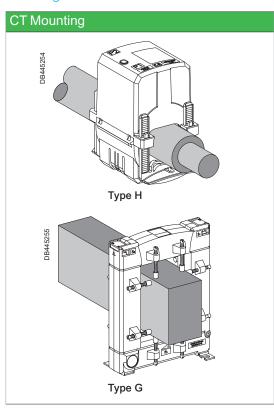
- A broad selection of ratings: from 100 A to 4000 A lp with 120% max. range
- Split core design allows for CT installation without the need to uninstall and reinstall power conductor
- The split core CTs are designed for easy fit and assembly into existing installations, without separating the primary conductor.
- Click-system and fixing clasps allow single-handed mounting
- Fully compatible with Schneider Electric's complete portfolio of industry leading metering products as well as Third Party measurement devices.
- Safety through sealable insulating cover
- Compliance with IEC measurment standards with accuracy class ranges from Class 0.5 to Class 3
- Higher safety factor during installation and for facility
- For indoor use

#### Conformity of standards

- BS / EN 61869-1:2009
- BS / EN 61869-2:2012
- BS / EN 63000:2018
- VDE 0414
- Green Premium Ecolabel
- CE / UKCA certified
- EAC, Metrology

## Split Core CTs

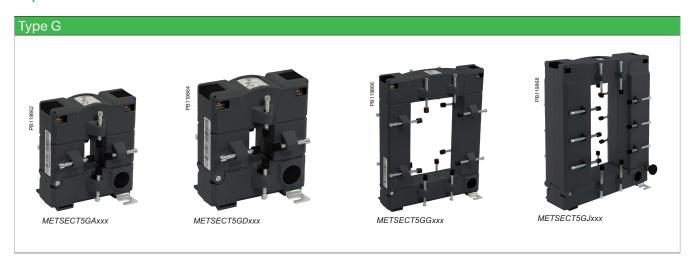
#### Mounting method



General characteristic	cs
Secondary current Is (A)	5 A (S1- S2 terminals)
Maximum voltage rating Ue (V)	720 V
Dielectric strength test	3 kV, 50 Hz for one minute
Frequency (Hz)	50/60 Hz nominal (47 - 63 Hz)
Instrument security/ safety factor (FS/sf)	upto 1000 A: FS ≤ 5 ≥1000 A: FS ≤ 10
Rated short time thermal current (Ith)	60 times the Ip current for 1 s (max 60 kA)
Rated dynamic current (Idyn)	2.5 lth
Degree of protection	IP20
Operating temperature	Tropicalised range: -5 to +60 °C Relative humidity: 5 % to 85 %
Storage temperature	-25°C to +70°C
Compliance with standards	BS / EN 61869-1:2009, BS / EN 61869-2:2012, BS / EN 63000:2018 VDE 0414
Secondary connection (as per model)	by terminals for lug or by tunnel terminals or by screws
Pollution degree	2
Installation category	III
Insulation class	E
Altitude	≤ 3000 m (9843 ft)



## Split Core CTs



## Commercial reference scheme

CT with let-through primary		CT internal Internal profile type and		lp/5 A rating				CT Commercial reference	
OT W	ar ict-airough phinary		dimension in mm	(A) <sup>(+1)</sup>	0.5	1	3	OT COMMICICIAL TOLCTORICE	
Type (	G - split core CT (bus bar)								
62				100	-	-	1.25	METSECT5GA010	
31198	PB119862		FF V2	150	-	-	1.5	METSECT5GA015	
8		0.4	E	200	-	-	2.5	METSECT5GA020	
		GA		250	-	1.5	-	METSECT5GA025	
			23 x 33	300	-	3.75	-	METSECT5GA030	
				400	1	-	-	METSECT5GA040	
				250	-	1.5	-	METSECT5GD025	
364				300	-	2.5	-	METSECT5GD030	
PB119864			FF V2	400	1	-	-	METSECT5GD040	
п.		GD	<u> </u>	500	2.5	-	-	METSECT5GD050	
		GD		600	2.5	-	-	METSECT5GD060	
			55 x 85	750	2.5	-	-	METSECT5GD075	
				800	2.5	-	-	METSECT5GD080	
				1000	5	-	-	METSECT5GD100	
				250	-	1.5	-	METSECT5GG025	
				300	-	2.5	-	METSECT5GG030	
866				400	-	2.5	-	METSECT5GG040	
PB119866			FF V2	500	2.5	-	-	METSECT5GG050	
п.	Semina minis		L L	600	2.5	-	-	METSECT5GG060	
		GG		750	2.5	-	-	METSECT5GG075	
	-		85 x 125	800	2.5	-	-	METSECT5GG080	
			00 X 120	1000	5	-	-	METSECT5GG100	
				1200	5	-	-	METSECT5GG120	
	6			1250	7.5	-	-	METSECT5GG125	
				1500	7.5	-	-	METSECT5GG150	
				1000	10	-	-	METSECT5GJ100	
9868				1200	10	-	-	METSECT5GJ120	
PB119868	4 5-		¥	1500	10	-	-	METSECT5GJ150	
	- L-		#	1600	10	-	-	METSECT5GJ160	
		GJ		2000	10	-	-	METSECT5GJ200	
	-110		85 x 165	2500	10	-	-	METSECT5GJ250	
				3000	15	-	-	METSECT5GJ300	
				4000	15	-	-	METSECT5GJ400	

 $<sup>^{\</sup>scriptscriptstyle(+1)}$  Maximum rated current (Imax) is 120% of the primary current (Ip).

## Split Core CTs

## Commercial reference scheme (contd.)

CT with let-through primary		CT internal	Internal profile type and	lp/5 A rating	Accur	acy class VA	rating	CT Commercial reference	
-CTW	ntriet-through phinary	type	dimension in mm	(A) <sup>(+1)</sup>	0.5	1	3	CT Commercial reference	
Type I	H - split core CT (cable)								
5				150	-	1	-	METSECT5HA015	
PB119872	11987	HA		200	-	1.5	-	METSECT5HA020	
8			18.4 x 19	250	1	-	-	METSECT5HA025	
				250	-	1	-	METSECT5HD025	
		HD		300	-	1.5	-	METSECT5HD030	
		TID	27.9 x 27	400	-	2.5	-	METSECT5HD040	
			21.5 X 21	500	1	-	-	METSECT5HD050	
				100	-	-	1.5	METSECT5HG010	
874				125	-	-	2.5	METSECT5HG013	
PB119874				150	-	-	3	METSECT5HG015	
				200	-	-	3	METSECT5HG020	
		HG		250	-	-	3	METSECT5HG025	
			Ø32.5	300	-	2.5	-	METSECT5HG030	
				400	-	5	-	METSECT5HG040	
				500	-	5	-	METSECT5HG050	
				600	-	5	-	METSECT5HG060	
92	A CONTRACTOR OF THE PARTY OF TH	HJ	42.4 x 43	300	-	2.5	-	METSECT5HJ030	
PB119876				400	-	5	-	METSECT5HJ040	
2				500	-	5	-	METSECT5HJ050	
				600	2.5	-	-	METSECT5HJ060	
				750	2.5	-	-	METSECT5HJ075	
				800	2.5	-	-	METSECT5HJ080	
80				300	-	2.5	-	METSECT5HM030	
PB119878				400	-	5	-	METSECT5HM040	
a.		HM		500	-	5	-	METSECT5HM050	
		HIVI		600	2.5	-	-	METSECT5HM060	
			42.4 x 85	750	2.5	-	-	METSECT5HM075	
				800	2.5	-	-	METSECT5HM080	
	_			250	-	1.5	-	METSECT5HP025	
9874				300	-	2.5	-	METSECT5HP030	
PB119874				400	-	5	-	METSECT5HP040	
				500	-	5	-	METSECT5HP050	
		HP		600	-	5	-	METSECT5HP060	
			Ø44	750	-	5	-	METSECT5HP075	
				800	-	5	-	METSECT5HP080	
				1000	-	5	-	METSECT5HP100	
	imum rated aurrent (Imay) is 100						l		

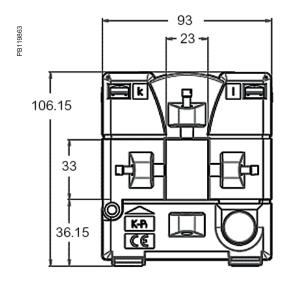
<sup>\*</sup> Maximum rated current (Imax) is 120% of the primary current (Ip).

Please contact your Schneider Electric representative for complete ordering information.

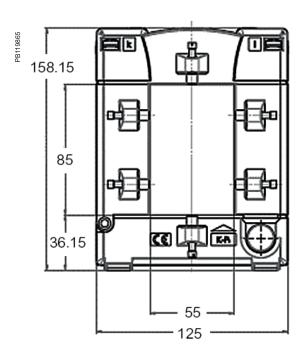
## Split core CT dimensions

#### Gx products

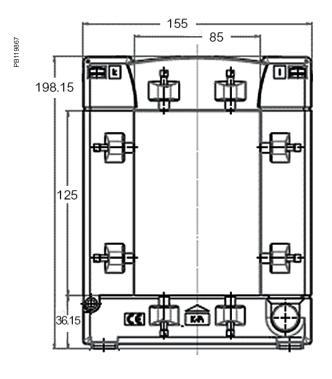
#### **GA Dimensions**



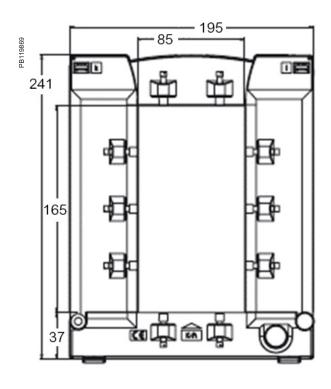
#### **GD** Dimensions



#### **GG** Dimensions



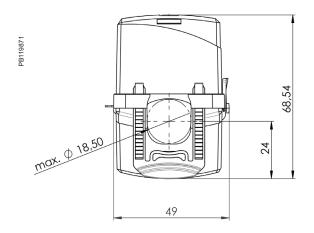
#### **GJ** Dimensions



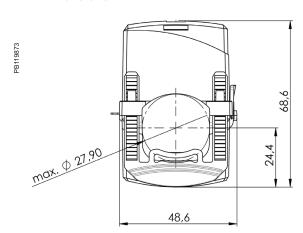
## Split core CT dimensions (contd.)

#### Hx products

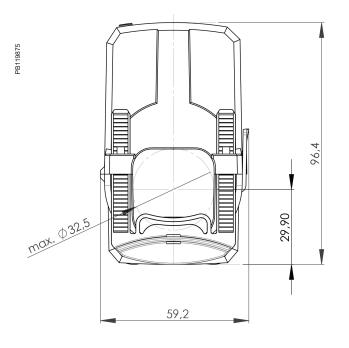
**HA Dimensions** 



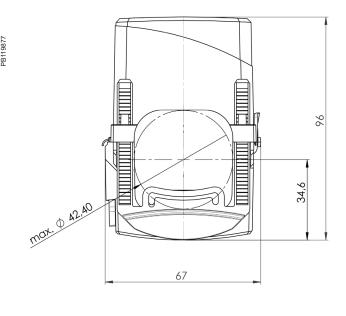
**HD Dimensions** 



**HG** Dimensions

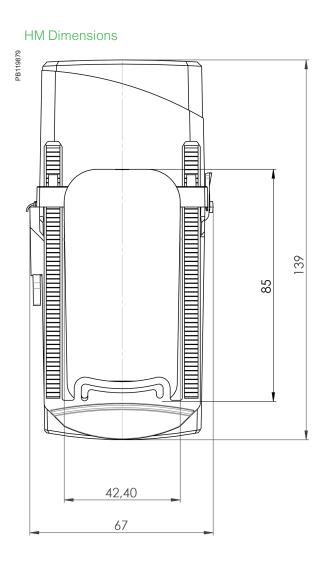


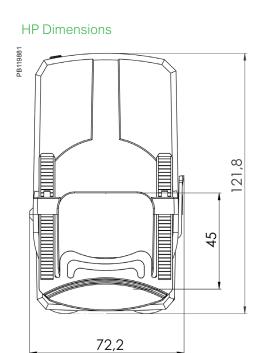
**HJ Dimensions** 



## Split core CT dimensions (contd.)

#### Hx products





See the appropriate **Installation Guide** for correct installation instructions.



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