

arteche



# HIGH ACCURACY EXTENDED RANGE

CURRENT TRANSFORMERS AND  
COMBINED TRANSFORMERS

## HIGH ACCURACY EXTENDED RANGE

Extended range current transformers are designed for modern power generation systems. They accurately measure a wider range of current without making physical changes in the primary or in the secondary connections of a current transformer.

To ensure the best performance on nominal primary current readings from 1% to Rating factor (please, see charts below), these current transformers have been designed using magnetic materials that minimize excitation losses and a winding distribution that virtually eliminates stray losses.

High accuracy extended range current transformers can increase utility revenue through improved metering. This occurs on systems with variable currents such as wind or solar power generation. In the past, current transformers were designed to accurately measure down to 10% of the current rating on the name plate of the transformer.

However, the recent deployment of variable generation has created a need to accurately measure a new range of currents produced by these systems; especially below the rated current of the transformer.

Historically, some energy usage revenue went unmeasured. Today Arteche's high accuracy extended range current transformers accurately measure these variable loads.

IEEE Standard for High-Accuracy Instrument Transformers IEEE C57.13.6 defines these higher accuracy classes that extend the accuracy range beyond the traditional IEEE C57.13 requirements.

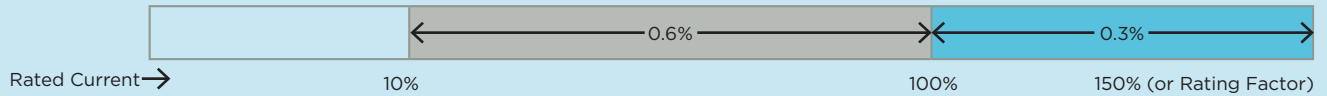
Arteche Instrument Transformers also conform to the high accuracy needs as outlined in the newly updated CSA Standard, specifically CSA C61869-1 General Requirements and CSA C61869-2 Current Transformers.

Extended range current transformers answer "Standard CT's problem" by expanding the amperage load that can be accurately measured. The wider current range helps to reduce the number of different ratios, reducing the amount of inventory needed to respond to customer demands.

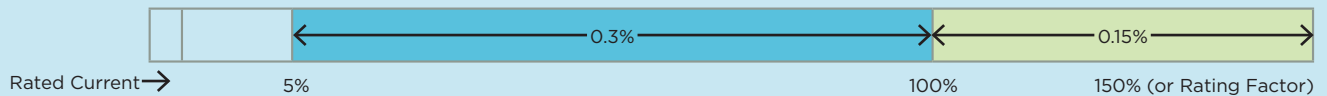


## ACCURACY DEFINITIONS

- › **“Standard Class 0.3”** means that from 100% of nominal current through the rating factor, accuracy is guaranteed to be  $\pm 0.3\%$ , and from 10% of nominal current through 100% of nominal current accuracy is guaranteed to be  $\pm 0.6\%$ .



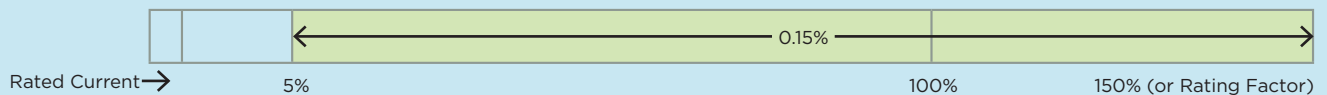
- › **“High Accuracy Class 0.15”** means that from 100% of nominal current through the rating factor, accuracy is guaranteed to be  $\pm 0.15\%$ , and from 5% of nominal current through 100% of nominal current accuracy is guaranteed to be  $\pm 0.3\%$ .



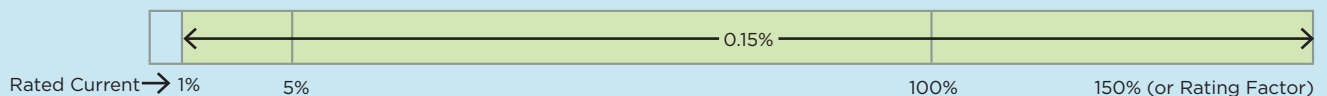
- › **“Accuracy Class 0.3S”** means that from 5% of nominal current through the rating factor, accuracy is guaranteed to be  $\pm 0.3\%$ .



- › **“Accuracy Class 0.15S”** means that from 5% of nominal current through the rating factor, accuracy is guaranteed to be  $\pm 0.15\%$ .



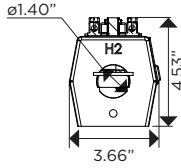
- › **“High Accuracy, Extended Range Class 0.15”** means that from 1% of nominal current through the rating factor, accuracy is guaranteed to be  $\pm 0.15\%$ . This goes beyond IEEE C57.13 requirements.



# CURRENT TRANSFORMERS

## 600 V (10 kV BIL)

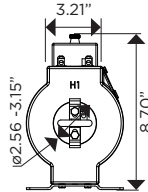
Primary Bar Type:



Approximate weight: 7.3 Lbs

**IRH-1**

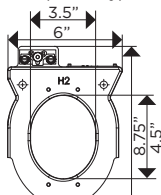
Bar Type:



Approximate weight: 15 Lbs

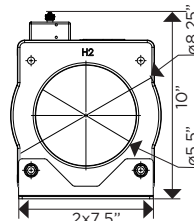
**IRH-5**

Tapered Type:



Approximate weight: 7.5 Lbs

**IRH-7**



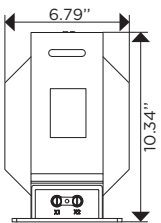
Approximate weight: 13 lbs

**IRH-10**

Electrical characteristics				
Code	Current Ratio (A)	Rating Factor @ 30°C / 55°C	Metering Accuracy <b>5% nominal current to Rating Factor</b>	
<b>IRH-1 (low base)</b>				
Window	Bar			
735227120	735228120	600:5	2.0/1.5	0.15S B0.2
<b>IRH-5 (low base)</b>				
Window	Bar			
735307120	735308120	600:5	2.0 / 1.5	0.15S B-0.5
735300120	735309120	600:5	3.0 / 2.0	0.15S B-0.2
735307200	735308200	1000:5	2.0 / 1.5	0.15S B-0.5
<b>IRH-7</b>				
Tapered	Wide			
735327100	735328100	500:5	2.0 / 1.5	0.15S B-0.2
735327200	735328200	1000:5	2.0 / 1.5	0.15S B-0.5
735327400	735328400	2000:5	2.0 / 1.5	0.15S B-0.5
<b>IRH-10 (no base)</b>				
735340320		2000:5	2.5 / 1.8	0.15S B-0.9

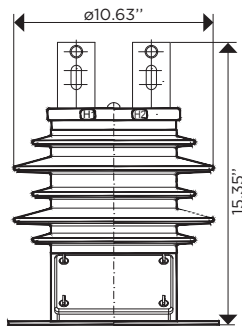
Additional ratings available upon request

## 15 kV (110 kV BIL)



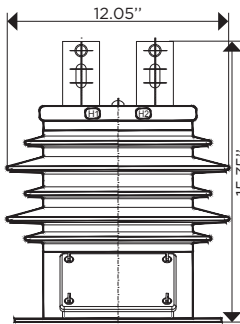
Approximate weight: 55 lbs

**CID-17**



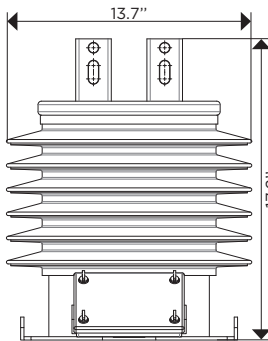
Approximate weight: 48.5 lbs

**CRB-17**



Approximate weight: 68.3 lbs

**CRE-17**



Approximate weight: 112.4 lbs

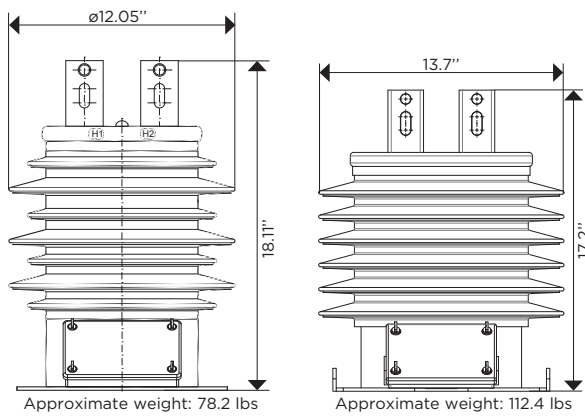
**CRF-17**

Electrical characteristics			
Code	Current Ratio (A)	Current Rating Factor @ 30°C	Metering Accuracy <b>1% nominal current to Rating Factor</b>
<b>CID-17 (Indoor)</b>			
750968040	200:5	2.0	0.15 B-1.8
750968120	600:5	2.0	0.15 B-1.8
750968200	1000:5	1.2	0.15 B-1.8
750968240	1200:5	1.2	0.15 B-1.8
<b>CRB-17 For HCEP Option add (-H) to the end of the code number.</b>			
756206040	200:5	2.0	0.15 B0.5
756206120	600:5	1.5	0.15 B0.5
756206200	1000:5	1.5	0.15 B0.5
756206240	1200:5	1.2	0.15 B0.5
<b>CRE-17 For HCEP Option add (-H) to the end of the code number.</b>			
756236040	200:5	2.0	0.15 B-1.8
756236120	600:5	1.5	0.15 B-1.8
756236200	1000:5	1.5	0.15 B-1.8
756236240	1200:5	1.2	0.15 B-1.8
<b>CRF-17 For HCEP Option add (-H) to the end of the code number.</b>			
756196040	200:5	4.0	0.15 B-1.8
756196120	600:5	3.0	0.15 B-1.8
756196200	1000:5	2.0	0.15 B-1.8
756196240	1200:5	1.5	0.15 B-1.8

Additional ratings available upon request

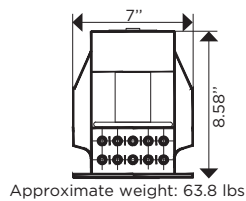
# CURRENT TRANSFORMERS

## 25 kV (150 kV BIL)



CRE-24

CRF-24

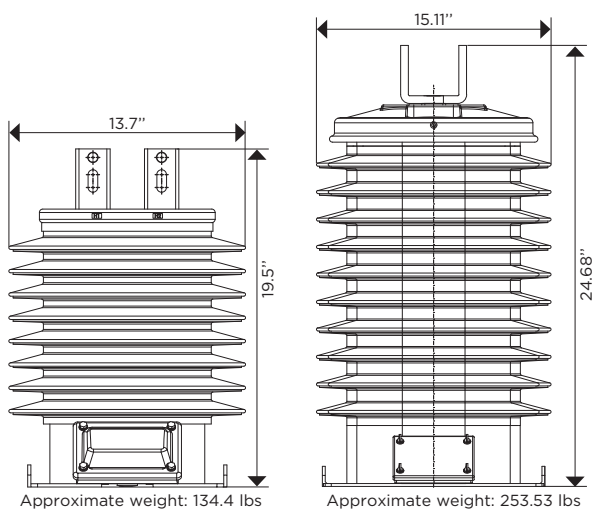


ACH-24

Electrical characteristics			
Code	Current Ratio (A)	Current Rating Factor @ 30°C	Metering Accuracy 1% nominal current to Rating Factor
ACH-24 (Indoor)			
750746040	200:5	2.0	0.15 B-1.8
750746120	600:5	1.2	0.15 B-1.8
750746200	1000:5	1.2	0.15 B-1.8
750746240	1200:5	1.2	0.15 B-1.8
CRE-24 For HCEP Option add (-H) to the end of the code number.			
756246040	200:5	2.0	0.15 B-1.8
756246120	600:5	1.5	0.15 B-1.8
756246200	1000:5	1.5	0.15 B-1.8
756246240	1200:5	1.2	0.15 B-1.8
CRF-24 For HCEP Option add (-H) to the end of the code number.			
756266040	200:5	4.0	0.15 B-1.8
756266120	600:5	3.0	0.15 B-1.8
756266200	1000:5	2.0	0.15 B-1.8
756266240	1200:5	1.5	0.15 B-1.8

Additional ratings available upon request

## 34.5 kV (200 kV BIL)



CRF-36

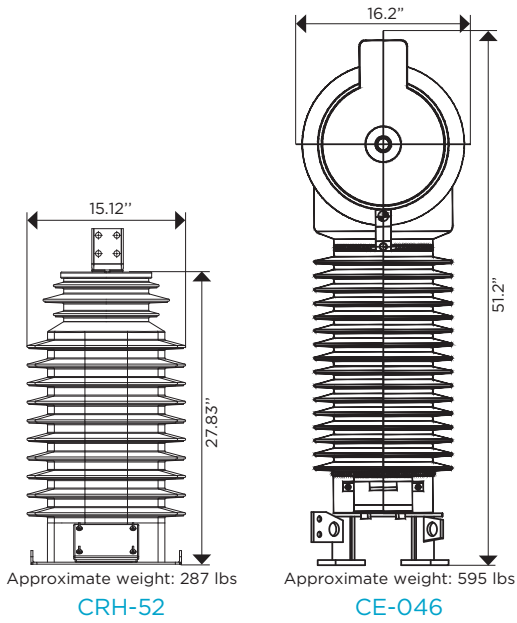
CRH-36

Electrical characteristics			
Code	Current Ratio (A)	Current Rating Factor @ 30°C	Metering Accuracy 1% nominal current to Rating Factor
CRF-36 For HCEP Option add (-H) to the end of the code number.			
756276040	200:5	2.0	0.15 B-1.8
756276120	600:5	1.5	0.15 B-1.8
756276200	1000:5	1.5	0.15 B-1.8
756276240	1200:5	1.2	0.15 B-1.8
CRH-36 For HCEP Option add (-H) to the end of the code number.			
756868040	200:5	4.0	0.15 B-1.8
756868120	600:5	3	0.15 B-1.8
756868200	1000:5	2	0.15 B-1.8
756868240	1200:5	1.5	0.15 B-1.8

Additional ratings available upon request

# CURRENT TRANSFORMERS

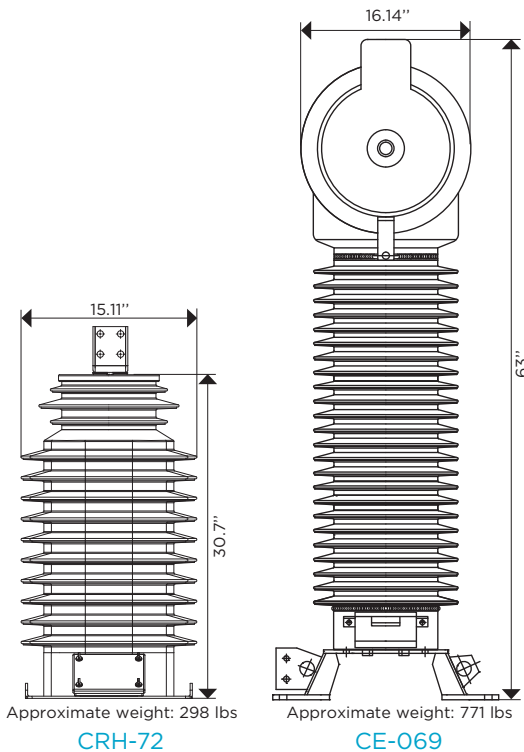
## 46 kV (110 kV BIL)



Electrical characteristics			
Code	Current Ratio (A)	Current Rating Factor @ 30°C	Metering Accuracy <b>1% nominal current to Rating Factor</b>
CRH-52 For HCEP Option add (-H) to the end of the code number.			
756876040	200:5	1.5	0.15 B-1.8
756876120	600:5	1.5	0.15 B-1.8
756876200	1000:5	1.5	0.15 B-1.8
756876240	1200:5	1.5	0.15 B-1.8
CE-046 For HCEP Option add (-H) to the end of the code number.			
756166040	200:5	1.5	0.15 B-1.8
756166120	600:5	1.5	0.15 B-1.8
756166200	1000:5	1.5	0.15 B-1.8
756166240	1200:5	1.5	0.15 B-1.8

Additional ratings available upon request

## 69 kV (350 kV BIL)

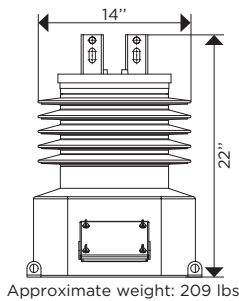


Electrical characteristics			
Code	Current Ratio (A)	Current Rating Factor @ 30°C	Metering Accuracy <b>1% nominal current to Rating Factor</b>
CRH-72 For HCEP Option add (-H) to the end of the code number.			
756896040	200:5	1.5	0.15 B-1.8
756896120	600:5	1.5	0.15 B-1.8
756896200	1000:5	1.5	0.15 B-1.8
756896240	1200:5	1.5	0.15 B-1.8
CE-069 For HCEP Option add (-H) to the end of the code number.			
756176040	200:5	1.5	0.15 B-1.8
756176120	600:5	1.5	0.15 B-1.8
756176200	1000:5	1.5	0.15 B-1.8
756176240	1200:5	1.5	0.15 B-1.8

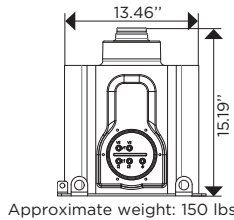
Additional ratings available upon request

# COMBINED TRANSFORMERS

## 15 kV (110 kV BIL)



Approximate weight: 209 lbs  
**KM-15**

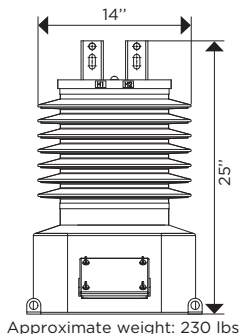


Approximate weight: 150 lbs  
**KCB-17**

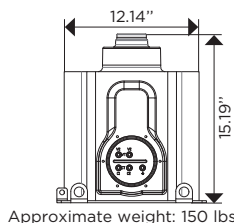
Electrical characteristics						
Code	Current Transformer			Voltage Transformer		
	Ratio (A)	Rating Factor @ 30°C	Metering Accuracy <b>1% nominal current to Rating Factor</b>	Ratio	Primary (V)	Metering Accuracy
KM-15 For HCEP Option add (-H) to the end of the code number.						
770087121	200:5	3.0	0.15 B-0.5	60:1	7200/12470GY	0.3 W,X,M,Y/0.6Z
770088121	200:5	1.5	0.15 B-1.8	60:1	7200/12470GY	0.3 W,X,M,Y/0.6Z
770088171	1000:5	1.5	0.15 B-1.8	60:1	7200/12470GY	0.3 W,X,M,Y/0.6Z
KCB-17 (Indoor)						
770031101	100:5	2.0	0.15 B-0.5	60:1	7200/12470GY	0.3 W,X,M,Y/1.2Z
770031121	200:5	2.0	0.15 B-0.5	60:1	7200/12470GY	0.3 W,X,M,Y/1.2Z
770031151	600:5	1.0	0.15 B-0.5	60:1	7200/12470GY	0.3 W,X,M,Y/1.2Z

Additional ratings available upon request.

## 25 kV (150 kV BIL)



Approximate weight: 230 lbs  
**KM-25**

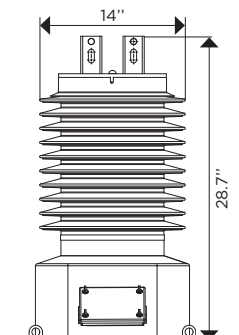


Approximate weight: 150 lbs  
**KCB-24**

Electrical characteristics						
Code	Current Transformer			Voltage Transformer		
	Ratio (A)	Rating Factor @ 30°C	Metering Accuracy <b>1% nominal current to Rating Factor</b>	Ratio	Primary (V)	Metering Accuracy
KM-25 For HCEP Option add (-H) to the end of the code number.						
770067126	200:5	3.0	0.15 B-0.5	120:1	14400/24940GY	0.3 W,X,M,Y/0.6Z
770068126	200:5	1.5	0.15 B-1.8	120:1	14400/24940GY	0.3 W,X,M,Y/0.6Z
770068176	1000:5	1.5	0.15 B-1.8	120:1	14400/24940GY	0.3 W,X,M,Y/0.6Z
KCB-24 (Indoor)						
770101106	100:5	2.0	0.15 B-0.5	120:1	14400/24940GY	0.3 W,X,M,Y/1.2Z
770101126	200:5	2.0	0.15 B-0.5	120:1	14400/24940GY	0.3 W,X,M,Y/1.2Z
770101156	600:5	1.0	0.15 B-0.5	120:1	14400/24940GY	0.3 W,X,M,Y/1.2Z

Additional ratings available upon request.

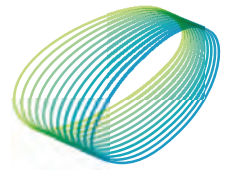
## 34.5 kV (200 kV BIL)



Approximate weight: 264 lbs  
**KM-34**

Electrical characteristics						
Code	Current Transformer			Voltage Transformer		
	Ratio (A)	Rating Factor @ 30°C	Metering Accuracy <b>1% nominal current to Rating Factor</b>	Ratio	Primary (V)	Metering Accuracy
KM-34 For HCEP Option add (-H) to the end of the code number.						
770077127	200:5	3.0	0.15 B-0.5	175:1	20125/34500GY	0.3 W,X,M,Y/0.6Z
770078127	200:5	1.5	0.15 B-1.8	175:1	20125/34500GY	0.3 W,X,M,Y/0.6Z
770078177	1000:5	1.5	0.15 B-1.8	175:1	20125/34500GY	0.3 W,X,M,Y/0.6Z

Additional ratings available upon request.



**arteche**  
Moving together

Official Partner



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