GE Digital Energy

Encompass[™] & RevenueSense[™]

Current Transformers with High Accuracy and Extended Range

Overview

In the current economic and regulatory climate, utilities are looking for innovative and cost effective measures for decreasing operating and asset costs while increasing accuracy of revenue metering. GE's Encompass and RevenueSense 600V Current Transformers (CT's) address utilities need for accurate and efficient revenue metering. With their extended range ratings, one Encompass or one RevenueSense CT can be used accurately over a wide variety of applications. These specialty CT's are designed for use with transformer rated meters such as GE's kV2c meter. Use of Encompass and RevenueSense CT's, particularly when used in conjunction with GE's kV2c FITZALLTM transformer rated meter, will substantially simplify and improve standardization for meter shop operations.

Key Benefits

- Reduce inventory requirements up to 90%
- Reduce time and effort in CT sizing and selection
- Minimize costly errors from incorrect billing multipliers or meter programing
- · Decrease risk of stock outs and project delays
- Reduce asset and operational costs

Key Applications

- Revenue metering for commercial and industrial applications
- Cost effective extended range for revenue metering using Encompass
- Premium metering accuracy with RevenueSense



- Encompass and RevenueSense both exceed the accuracy range for standard and high accuracy revenue metering classes
- Accuracy ratings extend beyond the load test points set by IEEE® C57.13
- Mitigates multiple ratios, reducing inventory requirements and part numbers
- Simplified selection and standardization of billing multipliers resulting in improved productivity and reduced risk of error

Wider Accuracy Range with Encompass

- Maintains standard accuracy class from 4% of rated current, with typical rating factor of 4.0
- Wide range CT reduces need for multiple ratios, simplifying inventory requirements and billing multipliers
- Available at the same price point as a standard CT, in most cases

Premium Accuracy with RevenueSense

- High precision resulting in maximum billing accuracy
- CT uses specialized core material in order to minimize electrical core losses
- Maintains 0.15 high accuracy class from 1% of rated current, up through its rating factor



Customer Challenge

Traditional 600V CT's experience relatively high losses at light loads, therefore it is most effective for utilities to specify as low of a ratio as possible and operate the CT within its rating factor. However, CT's also need to be sized with consideration of maximum possible amps, so the CT is not damaged in high load conditions, leading to a desire for higher ratios. These conflicting constraints add complexity to selecting the right sized CT, and necessitate the stocking of several different sized ratio CT's to cover a broad range of potential installations.

GF's Solution

GE's portfolio of extended range 600V Current Transformers makes it possible to replace all the various CT ratios used within a particular frame size with a single ratio that covers all potential installations.

Encompass and RevenueSense are each tailored to help utilities achieve both their business and technical objectives. The Encompass solution offers utilities a single unit that exceeds current accuracy range at no additional cost compared to a standard CT, and is best suited to utilities that want a cost effective CT with an extended range. The RevenueSense solution offers utilities a single unit that exceeds accuracy range with special high accuracy features, and is best suited to utilities that want premium metering accuracy.

IEEE Metering Class

There are three revenue grade metering classes defined by IEEE C57.13-2008 and C57.13.6-2004. These are illustrated below, with limits shown as a percent of rated CT current:

0.3 Class - Standard Accuracy

	0.6%	0.3%			
1	0% 10	00% F	۲F		

0.15 Class - High Accuracy

	0.3%	0.15%
59	% 10	0% RF

0.15S Class – Special High Accuracy

	0.15%
5	% RF

Encompass & RevenueSense Exceed IEEE Standards

Encompass and RevenueSense redefine CT performance by exceeding the operating range within their respective IEEE accuracy classes, offering utilities additional flexibility to reduce inventory, part numbers, and billing multipliers. RevenueSense also allows for a further reduction of metering losses by extending high accuracy performance down to 1% of rated current.

GE Encompass – Standard Accuracy with Extended Range

	0.6%	0.3%	
4%		40% RI	=

GE RevenueSense – Special High Accuracy with Extended Range

	0.15%	
1%	R	F



RevenueSense and Encompass CTs are ideal for multiservice facilities such as shopping malls.

Portfolio Summary: Encompass & RevenueSense

Encompass and RevenueSense 600V Current Transformers are designed for commercial and industrial applications and are typically installed with transformer rated meters like GE's kV2c. Encompass and RevenueSense models JCT, JCR, JAK, and JAD are designed for indoor or outdoor service and are available in bar-type or window-type configurations. The JAB model is specially designed for installation over the secondary bushings of pad mounted transformers from 75 kVA to 3000 kVA. A high temperature version is available for use in locations with unusually high ambient temperatures.

In most cases Encompass CT's are available at the same price point as Standard CT's. Choose this solution for a no-cost upgrade from standard range to extended range.

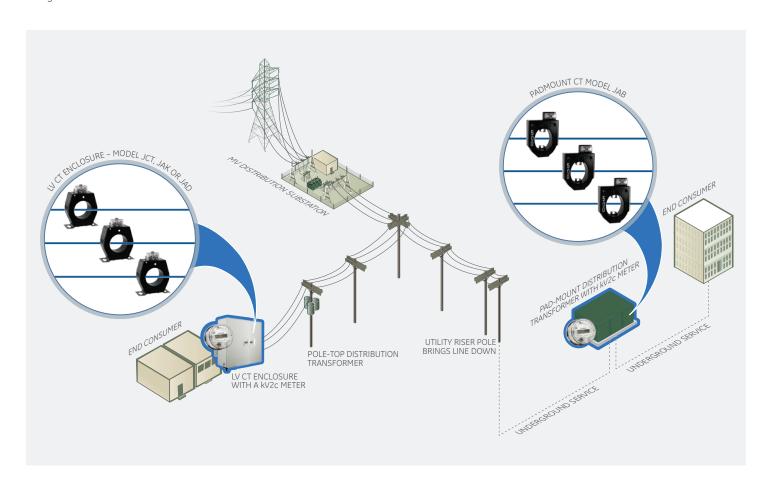
RevenueSense CT's provide both extended range and high accuracy. Choose this premium product to reduce electrical losses and increase revenue metering accuracy.

	STANDARD CT	GE ENCOMPASS	GE REVENUE SENSE
Range Type	Standard Range	Extended Range	Extended Range
Accuracy Type	Standard Accuracy	Standard Accuracy	High Accuracy
Rated Range*	10% to RF	4% to RF	1% to RF

^{*} Operating Range stated as a % of Rated Nameplate Current

Application Overview: Secondary Metering with Current Transformers

Encompass and RevenueSense CTs provide flexibility for commercial and industrial applications, indoor or outdoor service and bar-type or window-type configurations.



Encompass Product Overview

Extended Range CT

Encompass is a specialty 600V current transformer that offers customers the benefits of wide-range CT's without paying the price premium normally associated with high accuracy units. This is accomplished by extending the accuracy range of the CT beyond what is defined by IEEE for standard revenue metering. The result is a single unit that is rated to operate accurately over a range that previously took multiple ratios (sizes) to accomplish.

Benefits

- Simplifies CT selection and billing multipliers, improving productivity and minimizing risk or error
- Reduces inventory and part number requirements reduce asset and operational costs
- Exceeds accuracy range for standard revenue metering resulting in reduced asset costs
- Extends accuracy range with no additional upgrade cost; Encompass CT's are typically available at the same price point as standard CT's
- Answers the engineering challenge to "design the most efficient CT possible without adding cost to the unit"



Traditionally, CT accuracy is tested at:

- 10% of rated current (light load)
- 100% of rated current (full load)
- With a rating factor between 1.0 and 4.0

With GE's Encompass CT, the 0.3 accuracy class is extended by changing the test points to:

- 4% of rated current (light load)
- 40% of rated current (full load)
- With a typical rating factor of 4.0

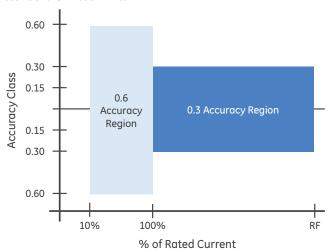
A rating factor of 4.0 means the Current Transformer meets rated accuracy at up to 4 times the rated primary current. Thus, the output on a 5 Amp CT secondary can be used up to 20 Amps if a rating factor of 4.0 is assigned to the CT (4.0*5A = 20A). This pairs the CT output range and the meter input range when used with a CL20 transformer rated meter, maximizing the performance potential of the system.



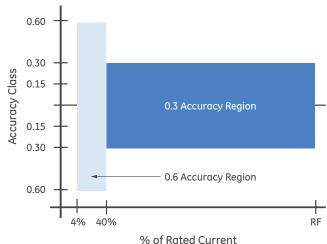
Extended Range (4% to RF). Standard Accuracy (0.3 Class).

Extending the test limits

Standard CT Test Limits



Encompass Test Limits



Encompass Business Case Example

The scenario for this business case is a meter shop that needs a current transformer for 200 Amp service. The testing below examines the benefits that the meter shop could achieve by installing GE's Encompass CT (500:5) compared to a standard CT (200:5).

A 500:5 Encompass CT has $\pm 0.3\%$ accuracy from 200A to 2000A, compared to a standard 200:5 CT which has a $\pm 0.3\%$ accuracy from 200A to only 800A. Both CT's have $\pm 0.6\%$ accuracy from 20A to 200A.

200:5 Standard CT

0.6%	0.3%	(Not Rated)	
20A	200A	800A	2000A

500:5 Encompass

0.6%		0.3%	
20A	200A	800A	2000A

The 500:5 Encompass CT has equal to or better accuracy rating across the entire 20A to 2000A range. It is important to note that accuracy class only defines the "tolerance of error" allowed in a CT. Actual test results are also an important factor when evaluating CT's. At a typical burden of B-0.1, the Encompass CT test results slightly outperform a standard CT, even at the lowest test amps. All Encompass test results are well within the IEEE limits.

	TESTED IEEE ACCURACY CLASS						
	20A	200A	2000A				
IEEE C57.13 Test Limits	±0.6	±0.3	±0.3				
200:5 Standard CT Test Results*	0.4	0.2	(not rated)				
500:5 Encompass CT Test Results*	0.3	0.2	0.1				

^{*}Tested Accuracy Class values shown are for illustrative purposes only, and not a guarantee of performance. Actual results may vary, within defined test tolerances.

Result and Benefits

The 500:5 Encompass unit when compared to a 200:5 standard CT has equal to or better test results at all points included even low currents and is available at an equivalent price. This comparison holds true across several other standard CT ratios, meaning one Encompass CT can functionally replace up to eight other standard ratios, allowing for an inventory reduction of up to nearly 90%.

System Current	20A	40A	60A	80A	100A	200A	400A	600A	800A	1000A	1200A	1400A	1600A	1800A	2000A
200:5 JAK-0C (Rating Factor 4.0)		±0.	6% Accur	асу		±0.:	3% Accur	асу							
400:5 JAK-0C (Rating Factor 4.0)	+() 6% Accuracy				racy				±0.3% A	Accuracy					
1000:5 JAK-0C (Rating Factor 2.0)						±0.0	5% Accur	асу			±0.	3% Accui	асу		
500:5 JAK-0W (4% to 400%) ±0.6% Accuracy				±0.3% Accuracy											

Usually only one part number for each frame size

- Reduced risk of costly stock outs
- Simplified site material ordering

Reduce meter shop inventory

- Reduced cost on inventory
- Space saving



RevenueSense Product Overview

Extended Range with High Accuracy Performance

RevenueSense is a specialty brand 600V current transformer that is both wide range and special high accuracy. This CT maintains 0.15 accuracy class (the highest class per IEEE) from 1% of its rated current up through its rating factor. This is accomplished using the specialized amorphous core material that minimizes electrical core losses. The result is an extremely accurate CT that can maintain high accuracy over a wide range of current.

Benefits

- Maximizes billing revenue with special high accuracy metering compared to standard accuracy metering
- · Increases billing accuracy of metered customers
- Exceeds accuracy range for standard revenue metering resulting in reducing asset costs
- Simplifies CT selection and billing multipliers, improving productivity and minimizing risk or error
- Reduces inventory and part number requirements reduce asset and operational costs

Redefining Special High Accuracy

Per IEEE C57.13.6, a 0.15S class CT must maintain 0.15 accuracy from 5% of rated current through rating factor. This is a significantly tighter tolerance for error as compared to a standard CT: 2X better within rating factor and 4X better at light loads.

With GE's RevenueSense CT's, this tight tolerance of 0.15 accuracy is maintained for an extended range of 1% of rated current through rating factor. Similar to Encompass CT's, moving from a standard CT to a wide range CT allows for a reduction in inventory, part numbers, and billing multipliers.

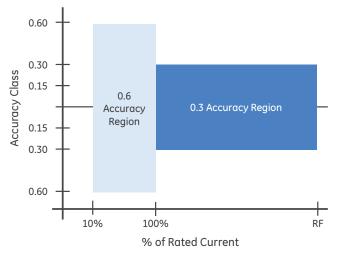
However, where Encompass CT's offer equal performance over an extended range, RevenueSense CT's offer improved high accuracy performance, allowing for increased billing accuracy and increased revenue.



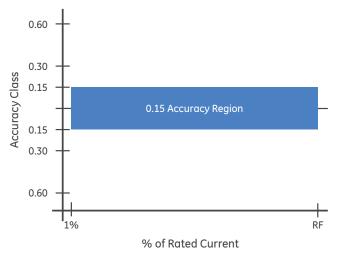
High Accuracy (0.15 Class). Extended Range (1% to RF). Premium Offering.

Extended test limits with tighter accuracy tolerances

Standard CT Test Limits



RevenueSense Test Limits



RevenueSense Business Case Example

In this business case example, a commercial customer requires premium accuracy to maximize billing revenue. The assumed hours of operation for this business are Monday to Friday, 9am to 5pm. The business is closed weeknights and weekends.

Assumptions:

- Nominal system with current of 200A
- System impedance of 0.1Ω
- Line to ground voltage of 277V
- Power factor of 0.9
- Cost per kWh of \$0.09

Load Conditions:

- Load is 100% of nominal current (200A) for 8 hours each weekday
- 10% of nominal current (20A) for 16 hours each weekday
- 5% of nominal current (2A) during weekends

Current Transformer Test Data

MODEL	TVDE	DATIO	TESTED IEEE ACCURACY CLASS				
MODEL	TYPE	RATIO	2A	20A	200A		
JAK-0C*	Standard	200:5	0.80	0.40	0.18		
JAK-0S*	RevenueSense	600:5	0.04	0.03	0.03		

^{*}Tested Accuracy Class values shown are for illustrative purposes only, and not a guarantee of performance. Actual results may vary, within defined test tolerances.

Results

MODEL	ТҮРЕ	RATIO	kWh MEASURED	ANNUAL BILL	ADDITIONAL REVENUE VS. STANDARD CT	TYPICAL PRICE ADDER REVENUESENSE VS STANDARD CT (EACH)*
JAK-0C	Standard	200:5	217,211	\$19,548.95	-	-
JAK-0S	RevenueSense	600:5	217,665	\$19,589.88	\$40.93	\$20

^{*}Example only

Results and Benefit

The RevenueSense CT, with its premium accuracy increases billing revenue by \$40.93 annually versus the standard CT. The additional cost of three high accuracy CT's is roughly \$60 in this example, yielding a payback in less than 18 months.



Commercial building with 200A nominal service, 277V.

Model: JAK Size: 3" Window Range: Up to 2000A

Cross-Reference Guide: Converting Standard Accuracy CT's to GE's Encompass or RevenueSense CT's

JAK-0W and JAK-0S Dimensions

- Approximate weight of Model JAK-0W is 8lbs.
- Approximate weight of Model JAK-0S is 12lbs.
- Add 3lbs for primary bar, 0.5lb for low base, and 1lb for high base.



STA	NDARD	CT MAKE	AND MOD	EL	CHARAC	CTERISTICS			ANGE OF CY CLASS	GE ENCOMPASS	GE REVENUESENSE
GE	ABB	RITZ	ASTRA	ITRON	RATIO	ACCCL	RF	0.6 ACCURACY	0.3 ACCURACY		
JAK-0C	CMF	DCCW	AB	R6M	200:5	0.3B0.5	4	20A-200A	200A-800A	JAK-0W 500:5	JAK-0S 600:5
JAK-0C	CMF	DCCW	AB	R6M	300:5	0.3B0.5	4	30A-300A	300A-1200A	Maintains 0.6	Maintains 0.15
JAK-0C	CMF	DCCW	AB	R6M	400:5	0.3B0.5	4	40A-400A	400A-1600A	accuracy from	accuracy from 6A to
JAK-0C	CMF	DCCW	AB	R6M	500:5	0.3B0.5	3	50A-500A	500A-1500A	20A-200A and 0.3 accuracy from	1800A
JAK-0C	CMF	DCCW	AB	R6M	600:5	0.3B0.5	2	60A-600A	600A-1200A	200A-2000A	
JAK-0C	CMF	DCCW	AB	R6M	800:5	0.3B0.5	2	80A-800A	800A-1600A		
JAK-0C	CMF	DCCW	AB	R6M	1000:5	0.3B0.5	2	100A-1000A	1000A-2000A		
JAK-0C	CMF	DCCW	AB	R6M	1200:5	0.3B0.5	1.5	120A-1200A	1200A-1800A		
JAK-0C	CMF	DCCW	AB	R6M	2000:5	0.3B0.5	1	200A-2000A	2000A		-

Characteristics and Accuracy Range statements based on GE models only. Values from other manufacturers may vary.

JAK-0W Encompass Data Table

CURRENT RATIO	IEEE METERING	RATING FACTOR		PRIMARY BAR	CATALOG NUMBER			
(AMPS)	ACCURACY (60Hz)		55°C	PRIMART DAR	NO BASE	LOW BASE	HIGH BASE	
500:5	0.3B0.5 ¹	4	3	No	750X133655	750X133629	750X133633	
500:5	0.3B0.5 ¹	4	3	Yes	750X133470	750X133630	750X133634	

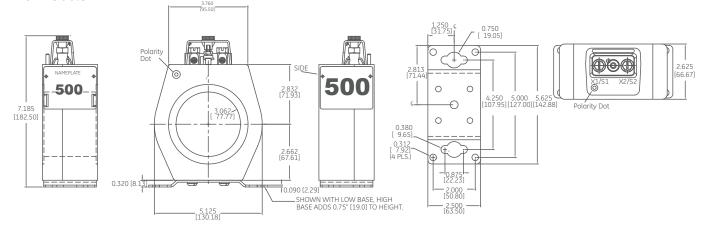
(1) Exceeds IEEE definition for standard accuracy. Maintains 0.6 Accuracy from 4% to 40% and 0.3 from 40% to Rating Factor.

JAK-OS RevenueSense Data Table

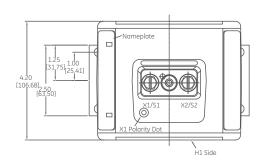
CURRENT RATIO	IEEE METERING	RATING FACTOR		PRIMARY BAR	CATALOG NUMBER			
(AMPS)	ACCURACY (60Hz)	30°C	55°C	PRIMART DAK	NO BASE	LOW BASE	HIGH BASE	
600:5	0.15SB0.2 ²	3	2	No	-	750X333002	750X333003	
600:5	0.15SB0.2 ²	3	2	Yes	750X333101	750X333102	750X333103	
600:5	0.15SB0.5 ²	2	1.5	No	-	750X333012	750X333013	
600:5	0.15SB0.5 ²	2	1.5	Yes	750X333011	750X333112	750X333113	

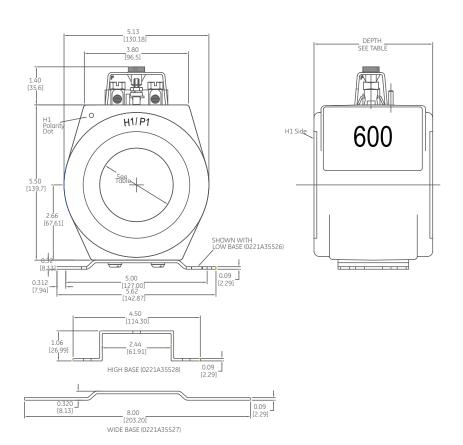
(2) Exceeds IEEE definition for special high accuracy. Maintains 0.15 Accuracy from 1% to Rating Factor.

JAK-0W 500:5



JAK-0S 600:5 and 1000:5





Model: JAB

Size: 4.5" x 3.5" Window Range: Up to 4000A

Hi-Temperature Rating (85°C)

Cross-Reference Guide: Converting Standard Accuracy CT's to GE's Encompass or RevenueSense CT's

JAB-0W and JAB-0S Dimensions

Approximate weight of Model JAB is 8lbs.



STA	NDARD	CT MAKE	AND MOD	DEL	CHARAC	TERISTICS			ANGE OF CY CLASS	GE ENCOMPASS	GE REVENUESENSE
GE	ABB	RITZ	ASTRA	ITRON	RATIO	ACCCL	RF	0.6 ACCURACY	0.3 ACCURACY		
JAB-0C	CMV	DCDW	AP	R6P	200:5	0.3B0.2	4	20A-200A	200A-800A	JAB-0W 500:5	JAB-0S 1000:5
JAB-0C	CMV	DCDW	AP	R6P	300:5	0.3B0.2	4	30A-300A	300A-1200A	Maintains 0.6 accuracy from	Maintains 0.15
JAB-0C	CMV	DCDW	AP	R6P	400:5	0.3B0.2	4	40A-400A	400A-1600A	20A-200A and 0.3	accuracy from 10A to 3000A
JAB-0C	CMV	DCDW	AP	R6P	500:5	0.3B0.5	3	50A-500A	500A-1500A	accuracy from	
JAB-0C	CMV	DCDW	AP	R6P	600:5	0.3B0.5	3	60A-600A	600A-1800A	200A-2000A	
JAB-0C	CMV	DCDW	AP	R6P	800:5	0.3B0.5	3	80A-800A	800A-2400A	JAB-0W 1500:5	
JAB-0C	CMV	DCDW	AP	R6P	1000:5	0.3B0.5	2	100A-1000A	1000A-2000A	Maintains 0.6 accuracy from	
JAB-0C	CMV	DCDW	AP	R6P	1200:5	0.3B0.5	2	120A-1200A	1200A-2400A	20A-200A and 0.3	
JAB-0C	CMV	DCDW	AP	R6P	1500:5	0.3B0.5	2	200A-2000A	2000A-4000A	accuracy from	JAB-0S 2000:5
JAB-0C	CMV	DCDW	AP	R6P	3000:5	0.3B0.5	1.3	300A-3000A	3000A-4000A	200A-00A	Maintains 0.15 accuracy from
JAB-0C	CMV	DCDW	AP	R6P	4000:5	0.3B0.5	1	400A-4000A	4000A		20A to 4000A

Characteristics and Accuracy Range statements based on GE models only. Values from other manufacturers may vary.

JAB-0W Encompass Data Table

CURRENT RATIO	IEEE METERING	RATING FACTOR			HI TEMP	CATALOG NUMBER
(AMPS)	ACCURACY (60Hz)	30°C	55°C	85°C	HI IEMP	CATALOG NUMBER
500:5	0.3B0.5 ¹	4	3	-	No	750X136651
1500:5	0.3B0.5 ¹	2	1.5	-	No	750X136652
500:5	0.3B0.5 ¹	-	-	4	Yes	750X136464
1500:5	0.3B0.5 ¹	-	-	2	Yes	750X136463

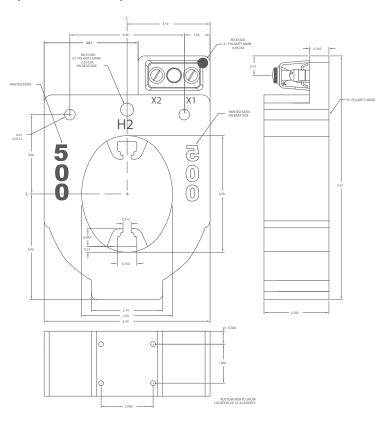
⁽¹⁾ Exceeds IEEE definition for standard accuracy. Maintains 0.6 Accuracy from 4% to 40% and 0.3 from 40% to Rating Factor.

JAB-OS RevenueSense Data Table

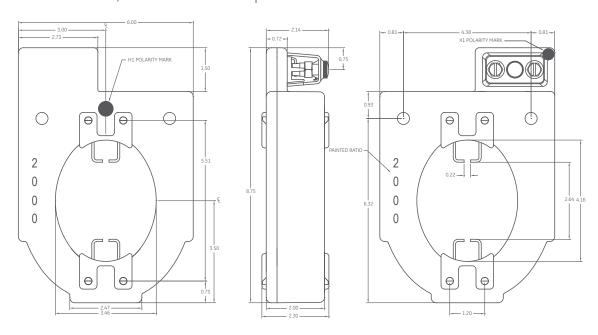
CURRENT RATIO	IEEE METERING		RATING FACTOR	НІ ТЕМР	CATALOC NUMBER	
(AMPS)	ACCURACY (60Hz)	30°C	55°C	85°C	HITEMP	CATALOG NUMBER
1000:5	0.15SB0.5 ²	3	2	-	No	750X336001
2000:5	0.15SB0.5 ²	2	1.5	-	No	750X336002
1000:5	0.15SB0.5 ²	-	-	2	Yes	750X336101
2000:5	0.15SB0.5 ²	-	-	1.5	Yes	750X336102

(2) Exceeds IEEE definition for special high accuracy. Maintains 0.15 Accuracy from 1% to Rating Factor.

JAB-0W 500:5 Hi Temp, only. Cast Resin Style



JAB-0W 500:5 Standard Temp JAB-0W 1500:5 Standard or Hi-Temp JAB-0S 1000:5 and 2000:5, Standard or Hi Temp



Model JCT or JCR Size: 2" Window Range: Up to 1200A

Cross-Reference Guide: Converting Standard Accuracy CT's to GE's Encompass or RevenueSense CT's

JCR-0W and JCT-0S Dimensions

- Approximate weight of Model JCR-0W is 4lbs.
- Add 2lbs for primary bar, 0.5lb for low base, and 1lb for high base.
- Approximate weight of Model JCT-0S is 6lbs, including primary bar.
- Add 0.25lb for low base, and 1lb for high base.



TRANSFORMER TYPE		STA	NDARD CT MAKE AND MO	DEL	
TRANSFORMER TYPE	GE	ABB	RITZ	ASTRA	ITRON
Miniature	JCR-0C	CSF	DCBW	TCW	R6SA
Miniature	JCW-0C	CSH	-	TFW	R6S
Miniature Bar-Type	JCM-0C	CBT-H	-	TAB	R6B
Miniature Bar-Type	JCT-0C	CBT/1	DCAB	TCB	R6BA

Characteristics and Accuracy Range statements based on GE models only. Values from other manufacturers may vary.

	CHARACTERISTICS		RATED RANGE OF	ACCURACY CLASS	GE ENCOMPASS	GE REVENUESENSE
RATIO	ACCCL	RF	0.6 ACCURACY	0.3 ACCURACY	GE ENCOMPASS	GE KEVENUESENSE
100:5	0.380.2	4	10A-100A	100A-400A	JCR-0W 250:5 Maintains 0.6 accuracy from	JCT-0S 600:5 Maintains 0.15 accuracy from 6A
200:5	0.3B0.2	2	20A-200A	200A-400A	10A-100A and 0.3 accuracy from 100A-1000A	to 1200A
400:5	0.3B0.2	2	40A-400A	400A-800A		
600:5	0.380.5	2	60A-600A	600A-1200A	JCR-0W 500:5 Maintains 0.6 accuracy from	
800:5	0.380.5	1.5	80A-800A	800A-1200A	20A-200A and 0.3 accuracy from 200A-1200A	

JCR-0W Encompass Data Table

CURRENT RATIO	IEEE METERING	RATING FACTOR		PRIMARY BAR	CATALOG NUMBER		
(AMPS)	ACCURACY (60Hz)	30°C	55°C	FRIPIANT DAN	NO BASE	LOW BASE	HIGH BASE
250:5	0.3B0.5 ¹	4	3	No	750X134608	750X134609	750X134610
250:5	0.3B0.5 ¹	4	3	Yes	750X134627	750X134618	750X134646
500:5	0.3B0.5 ¹	2.4	1.2	No	750X134641	750X134642	-
500:5	0.3B0.5 ¹	2.4	1.2	Yes	750X134643	750X134644	-

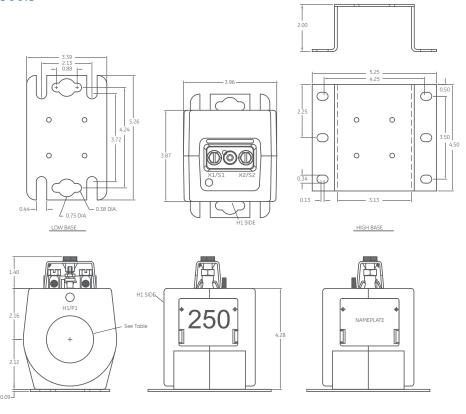
 $^{(1) \}textit{ Exceeds IEEE definition for standard accuracy}. \textit{ Maintains 0.6 Accuracy from 4\% to 40\% and 0.3 from 40\% to Rating Factor.}$

JCT-0S RevenueSense Data Table

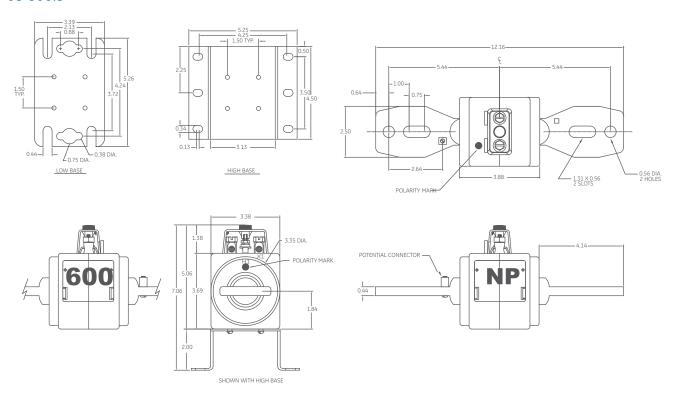
CURRENT RATIO	IEEE METERING	RATING	FACTOR	DDIMARY BAR	CATALOG NUMBER		
(AMPS)	MPS) ACCURACY (60Hz)		55°C	PRIMARY BAR	NO BASE	LOW BASE	HIGH BASE
600:5	0.15SB0.2 ²	2	1.5	Yes	750X323001	750X323002	750X323003

⁽²⁾ Exceeds IEEE definition for special high accuracy. Maintains 0.15 Accuracy from 1% to Rating Factor.

JCR-0W 250:5 and 500:5



JCT-0S 600:5



Model: JAD

Size: 5.75" Window Range: Up to 4500A

Cross-Reference Guide: Converting Standard Accuracy CT's to GE's Encompass or RevenueSense CT's

JAD-0W and JAD-0S Dimensions

Approximate weight of Model JAD is 13lbs. Add 2lbs for mounting base.



STA	NDARD	CT MAKE	AND MOE	EL	CHARAC	TERISTICS		RATED RACCURAG		GE ENCOMPASS	GE REVENUESENSE
GE	ABB	RITZ	ASTRA	ITRON	RATIO	ACCCL	RF	0.6 ACCURACY	0.3 ACCURACY		
JAD-0C	CLC	DCEW	AD	R6L	400:5	0.3B0.2	4	40A-400A	400A-1600A	JAD-0W 1000:5	JAD-0S 2000:5
JAD-0C	CLC	DCEW	AD	R6L	500:5	0.3B0.2	4	50A-500A	500A-2000A	Maintains 0.6 accuracy from	Maintains 0.15 accuracy from 20A
JAD-0C	CLC	DCEW	AD	R6L	600:5	0.3B0.5	3	60A-600A	600A-1800A	40A-400A and 0.3	to 4000A
JAD-0C	CLC	DCEW	AD	R6L	800:5	0.3B0.5	3	80A-800A	800A-2400A	accuracy from 400A-4000A	
JAD-0C	CLC	DCEW	AD	R6L	1000:5	0.3B0.9	2	100A-1000A	1000A-2000A	400A-4000A	
JAD-0C	CLC	DCEW	AD	R6L	1200:5	0.3B0.9	2	120A-1200A	1200A-2400A		
JAD-0C	CLC	DCEW	AD	R6L	1500:5	0.3B0.9	3	150A-1500A	2000A-4500A	JAD-0W 1500:5	JAD-0S 3000:5
JAD-0C	CLC	DCEW	AD	R6L	2000:5	0.3B0.9	2	200A-2000A	2000A-4000A	Maintains 0.6 accuracy from	Maintains 0.15 accuracy from 30A
JAD-0C	CLC	DCEW	AD	R6L	3000:5	0.3B0.9	1.3	300A-3000A	3000A-4000A	60A-600A and 0.3	to 4500A
JAD-0C	CLC	DCEW	AD	R6L	4000:5	0.3B0.9	1.1	400A-4000A	4000A-4500A	accuracy from 600A-4500A	

Characteristics and Accuracy Range statements based on GE models only. Values from other manufacturers may vary.

JAD-0W Encompass Data Table

CURRENT RATIO	IEEE METERING	RATING	FACTOR	CATALOG NUMBER		
(AMPS)	ACCURACY (60Hz)	30°C	55°C	NO BASE	WITH BASE	
1000:5	0.3B0.5 ¹	4	3	750X120609	750X120612	
1500:5	0.3B0.9 ¹	3	2	750X120922	750X120980	

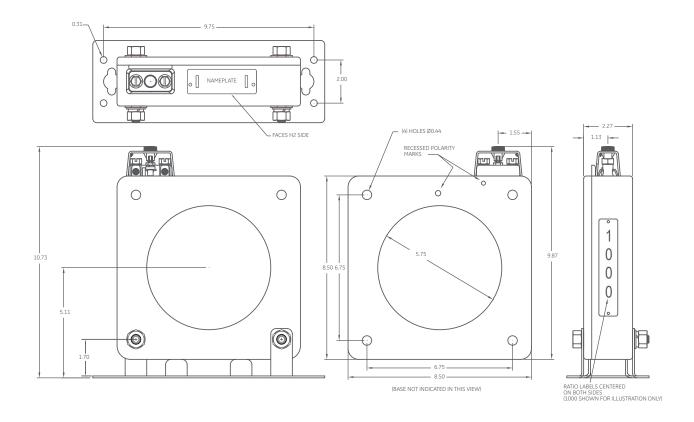
⁽¹⁾ Exceeds IEEE definition for standard accuracy. Maintains 0.6 Accuracy from 4% to 40% and 0.3 from 40% to Rating Factor.

JAD-0S RevenueSense Data Table

CURRENT RATIO (AMPS)	IEEE METERING	RATING FACTOR		CATALOG NUMBER	
	ACCURACY (60Hz)	30°C	55°C	NO BASE	WITH BASE
1200:5	0.15SB0.9 ²	2	1.5	750X320001	750X320011
2000:5	0.15SB0.9 ²	2	1.5	750X320002	750X320012
3000:5	0.15SB0.9 ²	1.5	1	750X320003	750X320013

(2) Exceeds IEEE definition for special high accuracy. Maintains 0.15 Accuracy from 1% to Rating Factor.

JAD-0W 1000:5 and 1500:5 JAD-0S 2000:5 and 3000:5



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- 600V class
- Fused and unfused models



MV Indoor Current & Potential Transformers

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- Polyurethane insulation
- Fused and unfused PT models
- Metering and relay accuracies



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- HCEP insulation
- Metering and relay accuracies
- High accuracy, extended range CT's available



MV HyBute 60™ Current & Potential Transformers

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- Butyl rubber insulation
- Metering and relay accuracies
- High accuracy, extended range CT's available



Superbute™ Potential Transformers

- 25-69kV, up to 350kV BIL class
- Butyl rubber insulation
- Up to 5kVA thermal rating
- Metering class at ZZ (400VA) burden



Superbute Current Transformers

- 25-69kV, up to 350kV BIL class
- Butyl rubber insulation
- Metering and relay accuracies
- High accuracy, extended range CT's available



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