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Reference Publications

V-60 Polyphase Meters	GEH-2758
Polyphase Switchboard Meters	GEH-2762
KV Switchboard Meter	GEH-7271
KV RSX RS232/RS485 Comm Option	GEH-7275
Instrument Transformer Buyer's Guide	GEP-9186
KV2 Features	GEH-7278
KV2 Instructions	GEH-7277
KV2 Brochure	GEA-12616
KV2C Instructions	GEH-7285
KV2C Features	GEH-7285A
KV2C Brochure	GEA-13371
I-210 Brochure	GEA-13391
I-210 Instructions	GEH-7287



Meters and Instrument Transformers

Three-phase Metering

Section 19

Selection Guide for Socket, Bottom Connected and Switchboard Type.

To Select the Optimum Metering System:

1. Determine the circuit type and voltage
2. Compute or estimate the served load in amperes and select metering equipment from the chart below and order as "Sim. To" Except: Current and Voltage Ratio.



I-70S Single Phase (Electro-Mechanical Meters)

Application	Meter Type	Register	Pulse Initiator	Meter Class S-Base (Socket-Type)		ANSI Forms	
				TR	SC	TR	SC
Energy EM	170	F52 Pointer F86 Cyclometer	N/A	10	100	3S, 4S	1S, 2S
					200		
					320		
Energy SS	I-210	Solid State	N/A	20	100	3S, 4S	1S, 2S
					200		
					320		

Electronic KV2C Meters (Wide Range 120-480V Single and Three Phase-All Functions)

Application	Meter Type	Register	Pulse Initiator	Meter Class S-Base (Socket-Type)		Meter Class A-Base (Bottom Connected Surface Mounted)		Switchboard Type TP	Optocom. Com. Part	Com. Outputs/Options	Programming Software	Software
				TR	SC	TR	SC					
All	kV	kV2C	Option	20	200, 320	20	150	kV	Yes	Modem and RS232/485	MeterMate	MV90

KV2C Electronic Demand Meter²

	Circuit Type	Circuit Voltage	Amps	ANSI C12-10 Form	No. of Jaws	Interval (Min.)	Meter Programmed with Demand Product No.		Programmed with Demand and Pulse ³ Product No	
Self Contained	3 ϕ 4WY	120/208Y	0-200	16S	7	15	784X400030	784X401016		
						30	784X400031	784X401017		
		277/480Y	0-200	16S	7	15	784X400030	784X401016		
						30	784X400031	784X401017		
		120/280Y	0-200	16S	7	15	784X400030	784X401016		
						30	784X400031	784X401017		
	277/480Y	0-200	16S	7	15	784X400030	784X401016			
					30	784X400031	784X401017			
	3W Network	120/208 Network	0-200	12S	5	15	784X100014	784X101011		
						30	784X100015	784X101012		
240A		0-200	12S	5 ¹	15	784X100014	784X101011			
					30	784X100015	784X101012			
480A		0-200	12S	5 ¹	15	784X100014	784X101011			
					30	784X100015	784X101012			
Transformer Rated	3 ϕ 4WY	120/208Y	0-10	36S	13	15	784X600015 ⁴	784X601011 ⁴		
						30	784X600016 ⁴	784X601012 ⁴		
		277/480Y	0-10	36S	13	15	784X600015 ⁴	784X601011 ⁴		
						30	784X600016 ⁴	784X601012 ⁴		
		120/208Y	0-10	9S	13	15	784X900028 ⁴	784X901015 ⁴		
						30	784X900029 ⁴	784X901016 ⁴		
	277/480Y	0-10	9S	13	15	784X900028 ⁴	784X901015 ⁴			
					30	784X900029 ⁴	784X901016 ⁴			
	3W Network	120/208 Network	0-10	45S	8	15	784X500017 ⁴	784X501010 ⁴		
						30	784X500018 ⁴	784X501011 ⁴		
		240A	0-10	45S	8	15	784X500017 ⁴	784X501010 ⁴		
						30	784X500018 ⁴	784X501011 ⁴		
480A		0-10	45S	8	15	784X500017 ⁴	784X501010 ⁴			
					30	784X500018 ⁴	784X501011 ⁴			

¹If line 2 is grounded, a socket having the line 2 connector attached directly to the socket case may be used.

If line 2 is not grounded, a socket with the line 2 connector insulated from the case must be used to avoid inadvertent grounding of line 2.

²kV meter is wide ranging for voltage and automatically adjusts for circuit voltage listed.

³Pulse output for kV meter self contained is 10 Wh per pulse. Pulse output for kV meter transformer is 1 Wh per pulse.

⁴For switchboard order "Sim. To" except: Switchboard Type.



Meters and Instrument Transformers

600 Volt Instrument Transformer Type Selection Chart

Voltage Transformer JVA-O 600 Volt

Voltage	Product Number
120:120	760X034001
240:120	760X034002
288:120	760X034004
480:120	760X034006



Type JAK-O Current Transformer

Current Transformer JAK-O 600 Volt

Window-Type, Single-Ratio

Current Ratio (in Amps) Pri:Sec	Continuous Thermal Current Rating Factor		Window Size	Product Number With Low Base
	30°C Ambient	55°C Ambient		
200:5	3.0	2.9	2.500	750X033311
400:5	4.0	2.9	3.062	750X033313
500:5	3.0	2.4	3.062	750X033314
600:5	2.0	1.8	3.062	750X033315
800:5	2.0	1.5	3.062	750X033316

Current Transformers—Bar Types

Type	Product Service	Ratio Range		400-5 Rating ¹				1500-5 Rating ¹				Option/ Other	Closest Known Competitor Type				
		Min.	Max.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²	Relay Burden ²	Lbs.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²		Relay Burden ²	ABB	ITI	Durh.	Sch.
JCT-0	750X023	200	800	Bar	2.0	.3 B0.2		6						ABB	ITI	Durh.	Sch.
JCM-0	750X025	200	400	Bar	2.0	.3 B0.5		6						CBT		TCB	R6BA
JKM-0	750X041	10	1200	Bar	1.5	.3 B0.5	T50	15						CBH		TAB	R6B
JAM-0	750X021	100	400	Bar	1.2	.3 B0.2		15								250/251	
JCL-0	750X028	1200	4000	-				25	Bar	1.5	.3B2	C130	For 2W Meter			252	

Current Transformers—Window Type with Mounting Base

Type	Product Service	Ratio Range		400-5 Rating ¹				1500-5 Rating ¹				Option/ Other	Closest Known Competitor Type				
		Min.	Max.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²	Relay Burden ²	Lbs.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²		Relay Burden ²	ABB	ITI	Durh.	Sch.
JCR-0	750X034	100	400	2.00	2.0	.3 B0.2		3						CSE		TCW	R6SA
JCW-0	750X032	200	400	2.00	2.0	.3 B0.5		4						CSH		TFW	R6S
JAK-0	750X033	200	800	3.00	4.0	.3 B0.5		9						CMF		AB	R6M
JAL-0	750X035	200	400	2.38	2.0	.3 B0.5		7									
JCP-0	750X015	600	4000					28	5.37	2.0	.3 B2	C200	Dual Ratios Burial Type	RLC			
JAF-0	750X0103	100	3000	4.50	1.3	.3 B0.1	C50	26	5.37	1.3	.3 B2	C100	Dual Ratios				
JCS-0	750X0100	50	4000	4.88	2.0	.3 B0.1	C50	28	5.37	1.5	.3 B2	C200	Dual Ratios				

Current Transformers—Rectangular Types with Mounting Holes

Type	Product Service	Ratio Range		400-5 Rating ¹				1500-5 Rating ¹				Option/ Other	Closest Known Competitor Type				
		Min.	Max.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²	Relay Burden ²	Lbs.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²		Relay Burden ²	ABB	ITI	Durh.	Sch.
JCH-0	750X012	100	800	2.50	1.3	.6 B0.2		4						Opt Mtg Bkts	IMC		
JCH-0C	750X112	50	2000	1.5/2.5	1.3	.3 B0.5		3	2.50	1.3	.3 B1.8		Opt Mtg Bkts	IMC		180	
JAH-0	750X0140	400	4000	4.00	1.3	.6 B0.2		9	5.75	1.3	.3 B1	C50		SCN/SCL		120/130/100	
JAS-0	750X0141	150	2000	4.00	1.3	.6 B0.2	C35	8	4.00	1.3	.3 B2	C50		SCH-5/SCG-4		110/115	
JCB-0	750X011	400	6000	8.12	1.5	.6 B0.1	C10	20	8.12	1.5	.3 B1	C100	Mul Ratio	SCP-3		149	
JCB-0C	750X111	50	6000	7.36	1.3	.3 B0.9	C100	48	7.36	1.3	.3 B1.8	C400	High Relay Types	SCD-3		143	
JAG-0	750X010	100	3000	6.50	4.0	.3 B0.2	C55	25	6.50	2.0	.3 B2	C200	Mul Ratio	SCV		780/781	
JAG-0C	750X110	50	5000	6.50	3.0	.3 B0.2	C55	21	6.50	2.0	.3 B1.8	C200	Mul Ratio	SCV		780/781	
JAG-0C ³	750X110	50	4000	6.50	3.0	.3 B0.5	C100	38	6.50	1.5	.3 B1.8	C400	Mul Ratio	SCV-D		785/786	
JAD-0	750X020	200	4000	5.75	4.0	.3 B0.2		13	5.75	3.0	.3 B1		Dual Ratios	CLC/RLC/SCL		120/130	AD R6L
JCD-0	750X031	1500	8000					20	8.12	3.0	.3 B1		Dual Ratios	CLE		149	ACL
JAB-0	750X036	200	3000	3.5/4.5	4.0	.3 B0.2		7	3.5/4.5	2.0	.3 B1		Opt "Grabbers"	CMV			AP R6P

¹Multiply primary amps by rating factor to get max. amp rating at 30°C.

²Performance and characteristics can vary with ratio/features.

³High Relay-Double Wide

Note: "ØC" types are case designs (indoor).



Meters and Instrument Transformers

600 Volt Instrument Transformer Type Selection Chart

Current Transformers—Auxiliary—Use in Sec. Of Main CT to change ratio—5A Primary

Type	Product Service	Ratio Range		400-5 Rating ¹				1500-5 Rating ¹				Option/ Other	Closest Known Competitor Type				
		Min.	Max.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²	Relay Burden ²	Lbs.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²		Relay Burden ²	ABB	ITI	Durh.	Sch.
JAR-0	750X001	0.1	15	Wound	1.5	.3 B0.2		12					AUX/CT	188			

Current Transformers—Indicating Instrument Window Types—1.5% Error @ Rated

Type	Product Service	Ratio Range		400-5 Rating ¹				1500-5 Rating ¹				Option/ Other	Closest Known Competitor Type				
		Min.	Max.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²	Relay Burden ²	Lbs.	Window Diameter inches	Rating Factor	Acc'y. @ Meter Burden ²		Relay Burden ²	ABB	ITI	Durh.	Sch.
JAI-0	750X093	50	800	1.75	1.5	2.5VA		0.5					Term. Screws			RT	
JAU-0	750X091	50	800	1.75	1.5	2.5VA		0.5					With Leads			RL	

Voltage Transformers

Type	Product Service	Acc'y Class	Burden	Thermal	Lbs.	Fuse Option	Closest Known Competitor Type			
							ABB	ITI	Durh.	Sch.
JEP-OC	760X135	0.3	W	300VA	12	No	PPW	460/470	DF	T5R
JVA-0	760X034	0.3	M	500VA	16	Yes	PPM	456	DB	T6R
JVP-1	761X030	0.3	Y	750VA	30	Yes	PPM	456	DB	T6R
YT-1557	760X099			300VA	50	No	PPI	450	DA	T7R

¹Multiply primary amps by rating factor to get max. amp rating at 30°C.

²Performance and characteristics can vary with ratio/features.

Note: "ØC" types are case designs (indoor).



Meters and Instrument Transformers

2.5-69 kV Instrument Transformer Selection Chart

Indoor Current Transformers

Type	Design	Volts	BIL	Most Single Ratio			Primary		Major ² 30°C Rating Factor	Avg Lbs.	Creep (Inches)	Other/ Options	Closest Competitor Type		
				0.3 Acc'y at Meter Burden	Relay Class	Max ¹ Amps at R.F.	Min.	Max.					ABB Type	ABB OIL Type	ITI Type
JKM-2	Wound	2500	45	B-0.5	T50	600	10	1200	1.5	15					
JCM-2	Wound	2500	45	B-2	C200	4000	600	4000	1.3	35					
JKC-3	Wound	5000	60	B0.5	T50	1200	10	1200	1.5	15				KIN-60	CTWH-3-60-T50
JKM-3	Wound	5000	60	B-2	T100	1000	5	800	1.5	29	Tap, Dual Sec.			KIR-60	CTWH-3-60-T100
JKS-3	Wound	5000	60	B0.1/2	T10/100	1200	15	800	1.5	30	Tap, Dual Sec.				
JCM-3	Bar	5000	60	B-2	C200	4000	1200	4000	1.3	62	Tap Sec.				
JCB-3	5.5' Win.	5000	60	B-2	C200/400	5300	1200	4000	1.3	85	Tap Sec.				
JCM-4	Bar	8700	75	B-2	C200	4000	1200	4000	1.3	62	Tap Sec.				
JKM-4	Wound	8700	75	B-2	T100	1000	10	800	1.5	29				KIR-75	CTWH-4-75-T100
JCB-4	5.5' Win.	8700	75	B-2	C200/400	5300	1200	4000	1.3	85	Tap Sec.				
JKS-5	Wound	15000	95	B0.1/2	T10/200	1200	15	800	1.5	50	8 Tap, Dual Sec.				CTWS-5-110-T20
JCM-5	Bar	15000	110	B-2	C200	4000	1200	4000	1.3	95	9 Tap, Dual Sec.			KIR-11	CTWH-5-110-T200
JCB-5	5.5' Win.	15000	110	B-2	C200/400	5300	1200	4000	1.3	110	11 Tap Sec.				

Outdoor Current Transformers

Type	Design	Volts	BIL	Most Single Ratio			Primary		Major ² 30°C Rating Factor	Avg Lbs.	Creep (Inches)	Other/ Options	Closest Competitor Type		
				0.3 Acc'y at Meter Burden	Relay Class	Max ¹ Amps at R.F.	Min.	Max.					ABB Type	ABB OIL Type	ITI Type
JKW-3	Wound	5000	60	B-2	T100	1000	5	800	1.5	38				KOR-60	
JCD-3	5.5' Win.	5000	60	B-2	C200/400	5300	1200	4000	1.3	110	Tap, Sec.			KOT-60	
JCW-3	Bar	5000	60	B-2	C200	4000	1200	4000	1.3	95	Tap, Sec.			KOT-60	
JCW-4	Bar	8700	75	B-2	C200	4000	1200	4000	1.3	95	Tap, Sec.			KOT-75	
JKW-4	Wound	8700	75	B-2	T100	1000	10	800	1.5	38				KOR-75	
JCD-4	5.5' Win.	8700	75	B-2	C200/400	5300	1200	4000	1.3	110	Tap, Sec.			KOT-75	
JKW-5	Wound	15000	110	B-2	T100/200	1200	5	1200	1.5	60	19 Tap, Sec.			KOR-11	
JCD-5	5.5' Win.	15000	110	B-2	C200/400	5300	1200	4000	1.3	135	13.5 Tap, Sec.			KOT-11	
JCK-5	Wound	15000	110	B0.5	C20	1200	5	800	1.5/3	35				KON-11	
JCW-5	Bar	15000	110	B-2	C200	4000	1200	4000	1.3	115	15 Tap, Sec.			KOT-11	
JKW-6	Wound	25000	150	B-2	T100/200	1200	5	800	1.5/3	77	24 Tap, Sec.			KOR-15&B	
JKW-150	Super-Bute	25000	150	B-2	T200/800	4000	25	3000	1.5/2	320	25 Tap, Dual Sec.			KOTD-150	ICT see below
JKW-7	Wound	34500	200	B0.5		1200	10	800	3	70	26 Tap, Sec.			KOR-20	
JKW-200	Super-Bute	34500	200	B-2	T200/800	4000	25	3000	2	345	35 Tap, Dual Sec.			KOTD-200	ICT C200/100
JKW-250	Super-Bute	46000	250	B-2	T200/800	4000	25	3000	2	540	48 Tap, Dual Sec.				RF 1.5/1
JKW-350	Super-Bute	69000	350	B-2	T200/800	4000	25	3000	2	590	64 Tap, Dual Sec.				

¹Multiply primary amps by rating factor to get max amp rating at 30°C.

²Rating factor can vary with ratio.



Meters and Instrument Transformers

2.5-69 kV Instrument Transformer Selection Chart

Section 19

Indoor Voltage Transformers

Type	Design	Volts	BIL	Most Single Ratio				Major ² 30°C Rating Factor	Avg Lbs.	Creep (Inches)	Other/ Options	Closest Competitor Type			
				0.3 Acc'y at Meter Burden	Relay Class	Max ¹ Amps at R.F.	Primary					ABB Type	ABB OIL Type	ITI Type	
							Min.								Max.
JVM-2		2400	45	Y		750		2400	30		Fuse Option			PT3-45	
JVM-3		4800	60	Y		750	2400	4800	30		Fuse Option	VIY-60		PT3-60	
JVM-4		7200	75	Z		1500	4200	7200	85		Fuse Option	VIZ-75		PT4-75	
JVM-5		14400	95/110	Z		1500	7200	14400	85		Fuse Option	VIZ-11		PT5-110	
JVM-6		24000	125	Y		750	12000	24000	100			VIZ-12.5		PT6-125	

Outdoor Voltage Transformers

Type	Design	Volts	BIL	Most Single Ratio				Major ² 30°C Rating Factor	Avg Lbs.	Creep (Inches)	Other/ Options ³	Closest Competitor Type		
				0.3 Acc'y at Meter Burden	Relay Class	Max ¹ Amps at R.F.	Primary					ABB Type	ABB OIL Type ⁴	
							Min.							Max.
JVW-3		4800	60	Y		750	2400	4800	44		2 Bushing	VOY-60		
JVW-4		7200	75	Z		1500	2400	7200	105	19.6	2 Bushing	VOZ-75		
JVW-5		14400	110	Z		1500	7200	14400	105	19.6	1-2 Bushing	VOZ-11		
JVW-110		14400	110	Y		1000	7200	14400	105	19.6	1-2 Bushing	VOY-11		
ABB ref		14400	110	Z		1500	7200	8400	74		1 Bushing	VOZ-11M		
JVW-6		14400	125	Y		750	12000		95	21	1 Bushing	VOG-12		
JVW-6		24000	125	Y		750	12000	24000	105	21	1-2 Bushing	VOY-12		
ABB ref		24000	150	Z		2000				27.2	2 Bushing	VOZ-15		
JVW-150		24000	150	Y		750	12000	24000	140	26	2 Bushing	VOY-15	Y, 27'; 1kVA	
ABB ref		24000	150	ZZ		2000				27.5	1 Bushing	VOG-15		
ABB ref		34500	150	Z		2000				26.1	2 Bushing	VZ-15H	Discontinued	
JVT-150	Super-Bute	24000	150	ZZ		3000		24000	225	27	2 Bushing	VOZZ-15	APT, ZZ, 33'; 4kVA	
JVS-150	Super-Bute	14400	150	ZZ		3000		14000	230	27	1 Bushing	VOZZ-15G		
JVW-7		34500	150	Y		750	23000	34500	140	26	2 Bushing	VOZ-15H	Discontinued	
JVW-7		20125	200	Y		750		20125	140	27	1 Bushing	VOG-15H	Discontinued	
ABB ref		34500	200	Z		2000				27.2	2 Bushing	VOZ-20		
ABB ref		36000	200	Y		1000				37.5	1-2 Bushing	VOHD-200/G		
JVT-200	Super-Bute	34500	200	ZZ		3000	27600	34500	235	36	2 Bushing	VOZZO-20	APT, ZZ, 33'; 5kVA	
JVS-200	Super-Bute	20125	200	ZZ		3000		20125	240	36	1 Bushing	VOZZ-20G	LPT, ZZ, 26'; 2.5kVA	
JVS-250	Super-Bute	27600	250	ZZ		5000		27600	420	50	1 Bushing		LPT, ZZ, 35'; 3.3kVA	
JVT-250	Super-Bute	46000	250	ZZ		4500		46000	520	52	2 Bushing		APT, ZZ, 40'; 6kVA	
JVS-350	Super-Bute	40250	350	ZZ		5000		40250	430	64	1 Bushing		LPT, ZZ, 48'; 4kVA	
JVT-350	Super-Bute	69000	350	ZZ		4500		69000	560	66	2 Bushing		APT, ZZ, 55'; 7.5kVA	

¹Multiply primary amps by rating factor to get max amp rating at 30°C.

²Rating factor can vary with ratio.

³1 Bushing is for line to ground only. 2 Bushing for line to line.

⁴LPT = 1 Bush, APT = 2 Bush. kVA higher when divided.

