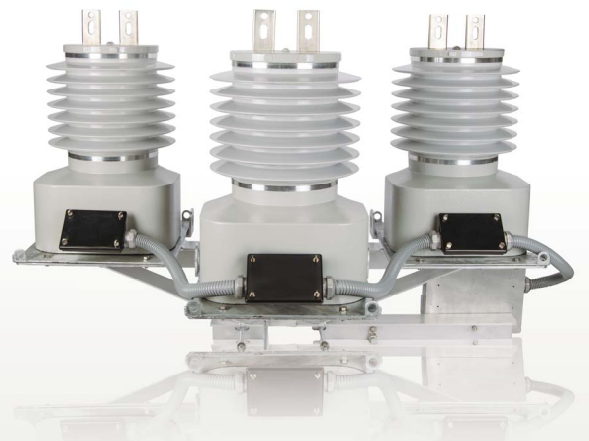
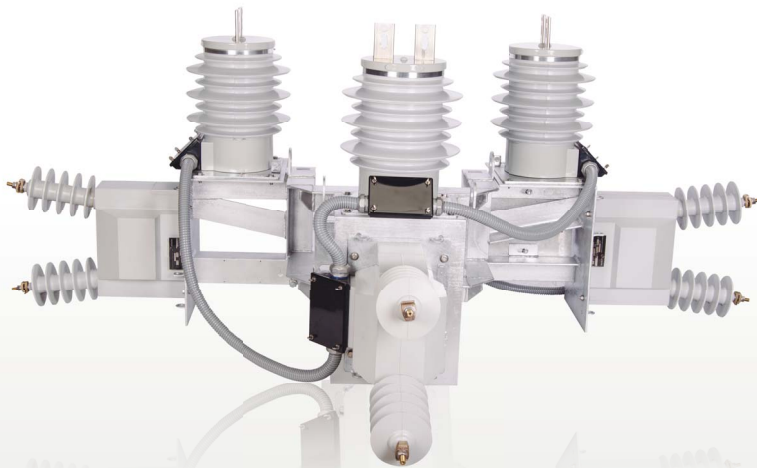


arteche



# METERING UNITS

THREE-PHASE POLE MOUNTED  
OUTDOOR METERING UNIT

# METERING UNITS

The ME/MK series metering units are outdoor, three-phase, pole-mounted metering racks rated for use on overhead line systems up to 34.5 kV (200 kV BIL). The ME/MK units are IEEE, CAN/CSA, IEC compliant.

## APPLICATIONS

These metering racks are appropriate for use on overhead distribution networks.

## ADVANTAGES

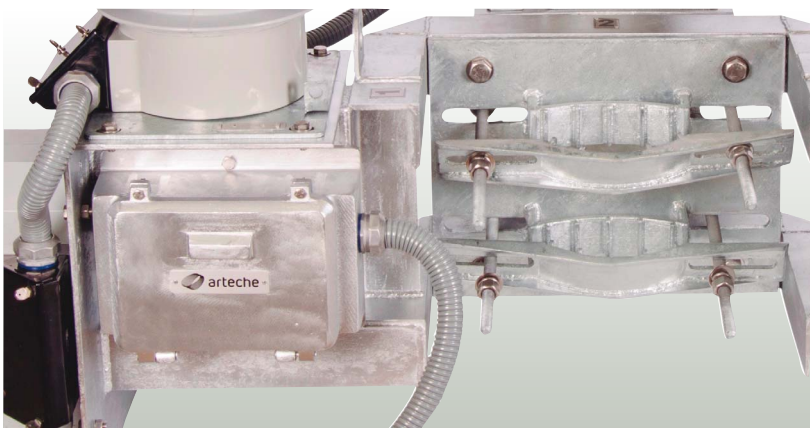
- › Excellent metering characteristics. Standard configuration includes class 0.3 metering accuracy units with optional High Accuracy and Extended Range class 0.15 CTs.
- › The ME/MK metering units are suitable for use in 1, 2 or 3 element metering applications.
- › Highest quality instrument transformers.
- › Maintenance free, ensuring a long mechanical and electrical life.
- › Partial discharge measurements exceed the IEEE, CAN/CSA and IEC requirements.

## CONFIGURATION OPTIONS

- › ME series with 3 CTs and 3 VTs.
- › MK series with combined CT/VT units.

## TECHNICAL CHARACTERISTICS

- › Instrument Transformers:
  - ME series incorporate 3 current transformers mounted vertically and 3 voltage transformers mounted horizontally.
  - MK series incorporate 3 combined transformers mounted vertically.
- › Metallic rack:
  - Standard structure made of lightweight aluminum with pole diameters available from 8" to 14". Optional galvanized steel structures and/or other pole diameters are available upon request.
  - Designed to mount on poles in an upright position.
  - It includes two galvanized steel mounting bolts for attaching the metering unit to the pole.
- › Terminals:
  - The Current and Combined transformers primary terminals are flat, tin-plated copper with standard NEMA 2-hole pattern suitable for various size conductors. The VT primary terminals are M12 stud with a compression type lug for #8 - #2 AWG conductors.
  - The secondary terminals are pre-wired through protective conduit to a 10 position test switch in standard red/black colors mounted to the rack.
- › Total weight varies depending on the selection of the instrument transformers.



- › Secondary terminals junction box and pole mounting details for standard ME structure

# INSTRUMENT TRANSFORMERS

The transformers utilized in the ME/MK metering units are dry type outdoor service current transformers, voltage transformers or combination CT-VT. In all cases the core is encapsulated with Type B epoxy resin which provides excellent internal dielectric properties and mechanical strength.

The external layer of Cycloaliphatic Epoxy Resin (CEP) provides resistance to ultraviolet rays and the effects of tracking and erosion on the exterior of the transformer ensuring a long mechanical and electrical life. The transformer is maintenance free.

The external layer can be manufactured with Hydrophobic Cycloaliphatic Epoxy Resin (HCEP) which improves service life expectancy due to its improved tracking and erosion resistance. HCEP additionally increases the transformer's weatherability and offers better performance in heavily polluted environments.

The core is built with high permeability grain oriented silicon steel laminations for low losses. The windings are copper wire with copper plate double isolation. The concentric distribution of the coils prevents magnetic flux leakage, achieving greater accuracy and higher capacity

to withstand mechanical stresses in adverse operating conditions.

Partial discharge measurements exceed the IEEE, CAN/CSA and IEC requirements.

High Accuracy Extended Range available for current transformers and combined instrument transformers

- › The ME current transformers (CR series) have ratios available from 5:5 to 1200:5 for 60 Hertz (Hz) with a Rating Factor up to 4.0 (1200 A max).
- › The ME voltage transformers are provided with one bushing (UR series) or two bushings (VR series). The ME-015 VT ratios are available from 20:1 to 120:1 for use on 15,000 volt systems. The ME-025 VT ratios are available from 100:1 to 120:1 for use on 25,000 volt systems and the ME-036 VT ratios are available from 175:1 to 300:1 for use on 34,500 volt systems.
- › The MK combined instrument transformers (KM series) have current ratios available from 5:5 to 1200:5 for 60 Hertz (Hz) with a Rating factor up to 3.0 (1200 A max), and a standard voltage ratio of 60:1 for MK-15, 120:1 for MK-25 and 175:1 for MK-34.



› KM-25



› CRE-17

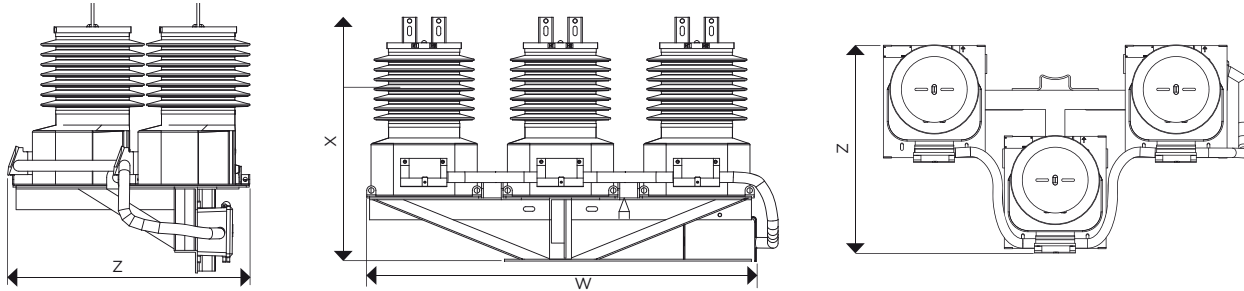


› VRN-24



› URS-36

# MK Series



## ORDERING INFORMATION

### Mechanical characteristics

	Dimensions (in)					Weight with Aluminium rack (lb)
	W	X	Z	Creepage Distance	Strike Distance	
MK-15	53.15	33.5	32.1	23.7	13	692
MK-25	53.15	36.17	32.1	32.6	16	755
MK-34	53.15	40.4	33.0	46	21	857

### Electrical characteristics

Weights are for reference. They could have a ±5% variation depending on the configuration requested.

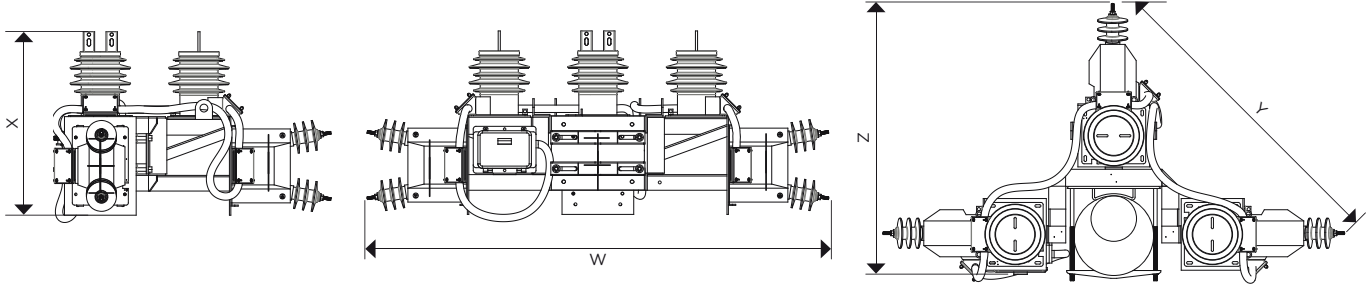
Code * (CEP)			Current Ratio (Primary Secondary)	Continuous Thermal Current Rating Factor @ 30°C			Short time Thermal Current (kA/1s)	Short time Mechanical Current (kA <sub>peak</sub> )	IEEE Metering Accuracy (Current Transformer)		IEEE Metering Accuracy (Voltage Transformer)
MK-15	MK-25	MK-34		MK-15	MK-25	MK-34			MK-15 & MK-25	MK-34	
770663011	770681016	770693017	5:5	3.0	1.5	3.0	0.5	1.4	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663021	770681026	770693027	10:5	3.0	1.5	3.0	1	2.7	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663031	770681036	770693037	15:5	3.0	1.5	3.0	1.5	4.1	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663041	770681046	770693047	20:5	3.0	1.5	3.0	2	5.4	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663051	770681056	770693057	25:5	3.0	1.5	3.0	2.5	6.8	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663061	770681066	770693067	30:5	3.0	1.5	3.0	3	8.1	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663071	770681076	770693077	40:5	3.0	1.5	3.0	4	10.8	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663081	770681086	770693087	50:5	3.0	1.5	3.0	5	13.5	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663091	770681096	770693097	75:5	3.0	1.5	3.0	7.5	20.3	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663101	770681106	770693107	100:5	3.0	1.5	3.0	10	27	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663111	770681116	770693117	150:5	3.0	1.5	3.0	15	40.5	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663121	770681126	770693127	200:5	3.0	1.5	3.0	20	54	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663131	770681136	770693137	300:5	3.0	1.5	3.0	30	81	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663141	770681146	770693147	400:5	3.0	1.5	3.0	40	108	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663151	770681156	770693157	600:5	2.0	1.0	2.0	60	162	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663161	770681166	770693167	800:5	1.5	1.0	1.5	60	162	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663171	770681176	770693177	1000:5	1.2	1.0	1.2	60	162	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
770663181	770681186	770693187	1200:5	1.0	1.0	1.0	60	162	0.3 B-0.5	0.3 B-1.8	0.3 W.X.M.Y/0.6Z
High Accuracy Extended Range											
770667121	770687126	770697127	200:5	3.0	3.0	3.0	20	50	0.15 B-0.5	0.15 B-0.5	0.3 W,X,M,Y/0.6Z
770668121	770688126	770698127	200:5	1.5	1.5	1.5	20	50	0.15 B-1.8	0.15 B-1.8	0.3 W,X,M,Y/0.6Z
770668171	770688176	770698177	1000:5	1.5	1.5	1.5	75	127.5	0.15 B-1.8	0.15 B-1.8	0.3 W,X,M,Y/0.6Z

\* For HCEP Option add (-H) to the end of the code number.

Metering Unit type	Combined Transformer type	Nominal Voltage System (kV)	BIL (kV)	Power Frequency Withstand Voltage (1 min)		VT Ratio	Primary (V)	Secondary (V)	Thermal Burden (VA)	Continuous Rated Voltage Factor (Un)	Rated Voltage Factor 30s (Un)
				Primary & Secondary (kV <sub>rms</sub> )	Secondary Winding (kV <sub>rms</sub> )						
MK-15	KM-15	15	110	34	2.5	60:1	7200/12470GY	120	750	1.25	1.5
MK-25	KM-25	25	125	50	2.5	120:1	14400/24940GY	120	750	1.25	1.5
MK-34	KM-34	34.5	200	70	2.5	175:1	20125/34500GY	115	750	1.25	1.5

Additional VT ratios are available. Please contact Artech for details.

# ME Series



## ORDERING INFORMATION

### Characteristics

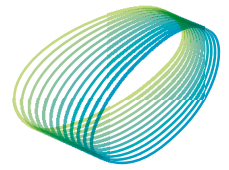
Metering Unit Type	Transformers		Code * (CEP)		Dimensions (in)				Weight with Aluminium rack (lb)
	Current	Potential	With FUSE in the secondary box	Without FUSE in the secondary box	W	X	Y	Z	
ME-015	CRB-17	URL-17	771000009	771000017	82	32.25	58	48.75	520
ME-015	CRB-17	VRL-17	771000010	771000018	81.19	32.25	57.43	48.31	531
ME-015	CRB-17	URJ-17	771000011	771000019	80.5	23.25	56.87	47.94	564
ME-015	CRB-17	VRJ-17	771000012	771000020	81	23.25	57.31	48.25	564
ME-015	CRE-17	URL-17	771000013	771000021	82	32.68	58	48.75	579
ME-015	CRE-17	VRL-17	771000014	771000022	81.19	32.68	57.43	48.31	590
ME-015	CRE-17	URJ-17	771000015	771000023	80.5	32.68	56.87	47.94	623
ME-015	CRE-17	VRJ-17	771000016	771000024	81	32.68	57.31	48.25	623
ME-025	CRE-24	URJ-24	771020005	771020009	91	35.31	64.43	53.25	648
ME-025	CRE-24	VRJ-24	771020006	771020010	90.5	35.31	64.43	53	666
ME-025	CRF-24	URN-24	771020007	771020011	87.5	34.25	61.81	51.5	881
ME-025	CRF-24	VRN-24	771020008	771020012	87.34	34.25	61.81	51.5	881
ME-036	CRF-36	URS-36	771010003	771010005	102.5	37	72.5	59	1060
ME-036	CRF-36	VRS-36	771010004	771010006	100.75	37	66.75	58.12	1087

\* For HCEP Option add (-H) to the end of the code number.

Weights are for reference. They could have a  $\pm 5\%$  variation depending on the configuration requested.

For detailed electrical characteristics see individual transformer data sheet at [www.arteche.com/en/unitusa/MVODatasheets](http://www.arteche.com/en/unitusa/MVODatasheets)





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