

arteche



INSTRUMENT  
TRANSFORMERS.  
MEDIUM VOLTAGE  
INDOOR.

This document may be subject to changes.  
Contact ARTECHE to confirm the characteristics and  
availability of the products described here.

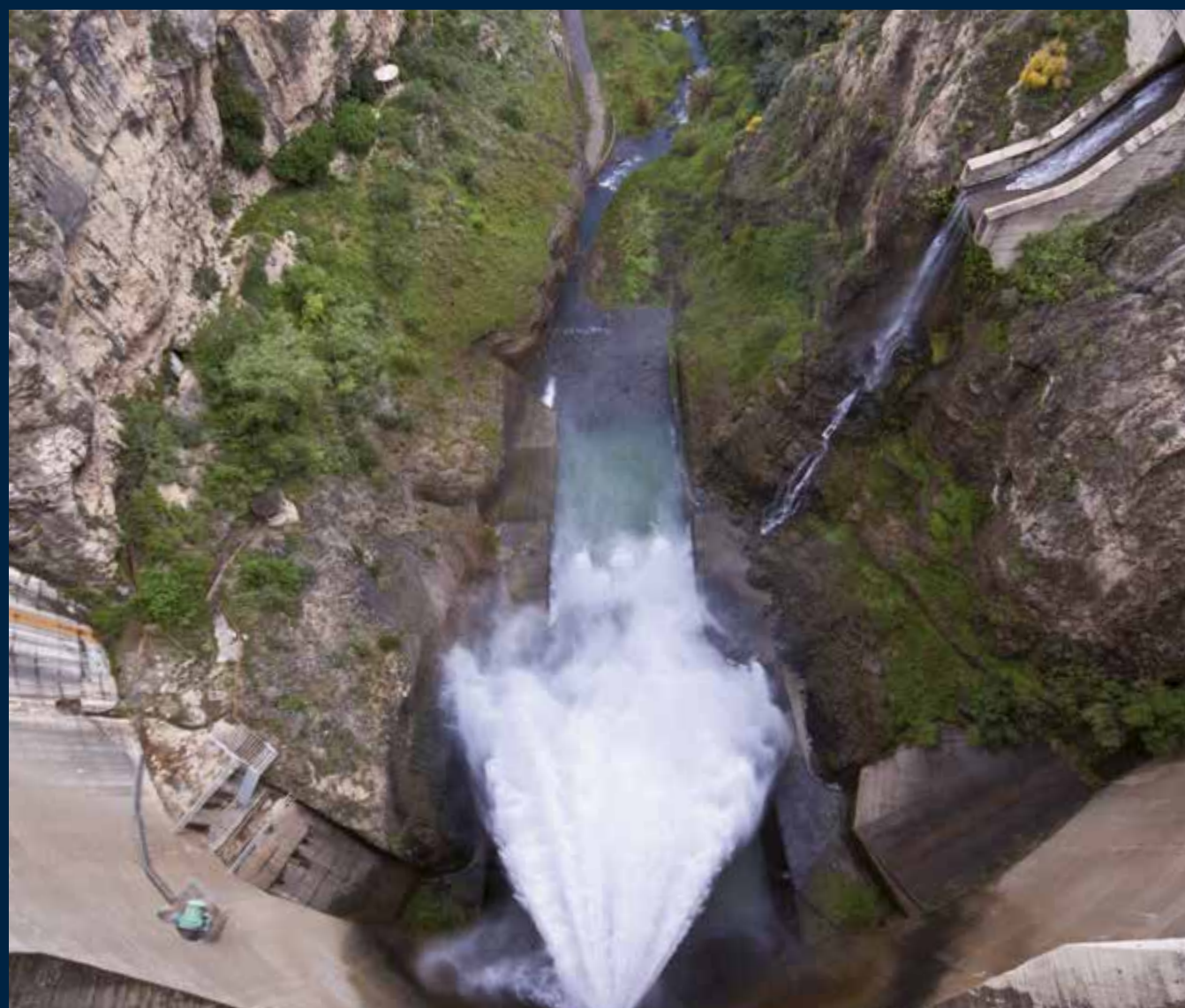
# Moving together

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# 1. CURRENT TRANSFORMERS

Support type  
Support window type  
Generator / Wall-bushing type  
Touch-proof type  
Wall-bushing with primary bar type



## 1. CURRENT TRANSFORMERS

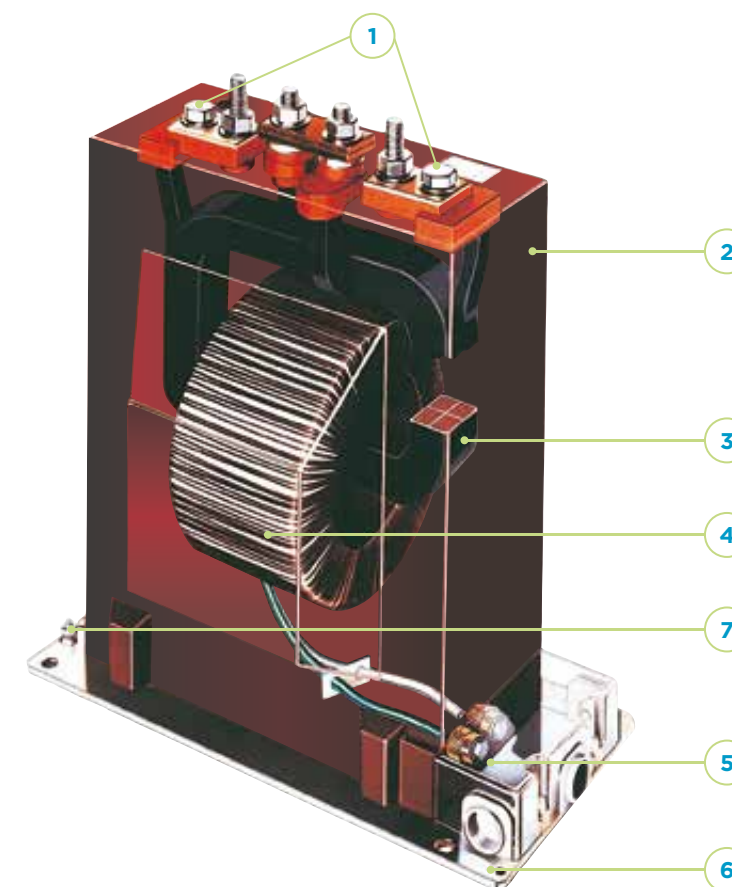
### INTRODUCTION

Current transformers reduce the current in the Medium Voltage line to proportional and manageable values, and separate the measuring instruments, meters, relays, etc. from the power circuit.

Possibility of solutions associated with ferroresonance phenomena, reducing operational and personal risks, and improving network performance (see Service catalog).

### SECTION

1. Primary terminals
2. Insulation (resin)
3. Primary winding
4. Core and secondary winding
5. Secondary terminal box
6. Base
7. Earth terminal



Model ACF



Support type



Support window type



Generator / Wall-bushing type



Touch-proof type



Wall-bushing with primary bar type

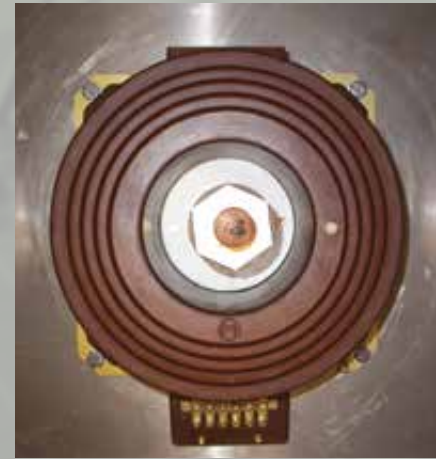




› ACM-12  
Support type  
transformer for primary  
distribution switchgears.



› ABG-24  
Current transformer for generator  
designed to work with very high  
primary currents.



› ABD-36  
Wall-bushing type  
transformer with short-  
circuitable secondaries.

## 1. CURRENT TRANSFORMERS > Support type

### SUPPORT TYPE

Current transformers for indoor service, encapsulated in resin which in addition to their primary function also act as busbar supports.

#### RANGE

- › Insulation voltage from 3.6 kV to 72.5 kV.
- › Rated primary currents from 1 A to 3,000 A.
- › Secondary currents: 1 and 5 A.
- › Frequencies: 50 Hz, 60 Hz.

#### APPLICATIONS

- › Medium voltage air insulated primary distribution switchgears.
- › Medium voltage air insulated secondary distribution switchgears.
- › Capacitor banks.

#### ADVANTAGES

- › Possibility of secondary currents different from the standardized ones (1 and 5 A).
- › Possibility of frequencies different from the standardized ones (50 and 60 Hz).
- › Secondary terminals on the P1 or P2 side.
- › Designed to withstand vibrations.
- › Excellent response under extreme weather conditions.
- › Short-circuit system for secondary terminals and dimensions as per with DIN 42600 available.
- › Possibility of insulation ribs in the primary.
- › Possibility of capacitive tap.
- › Ratio change by primary or secondary tapping.
- › Stainless steel screws, bolts and nuts available.
- › It can be assembled in any position (vertical, horizontal, etc.).
- › Designs approved by Underwriters Laboratories (UL-USA) available.



› Model ACF



› Model ACD



› Model ACH

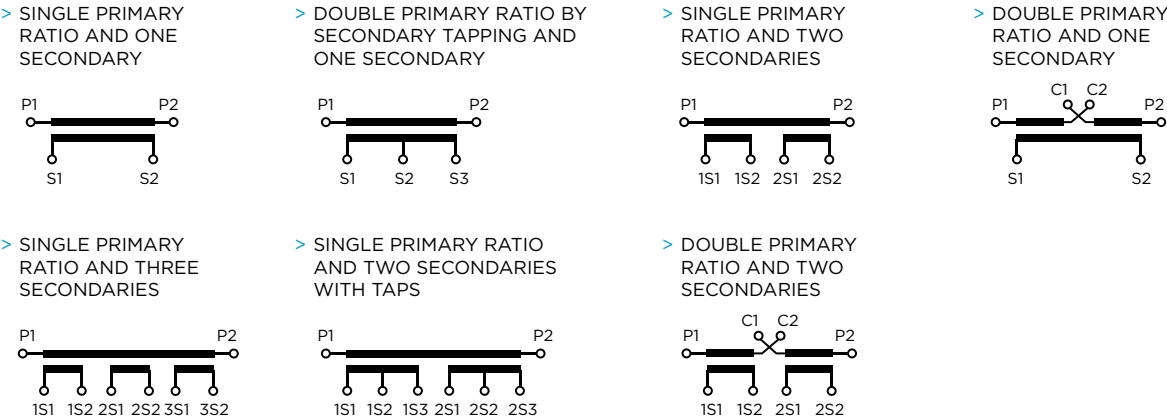


› Model ACK



› Model ACJ

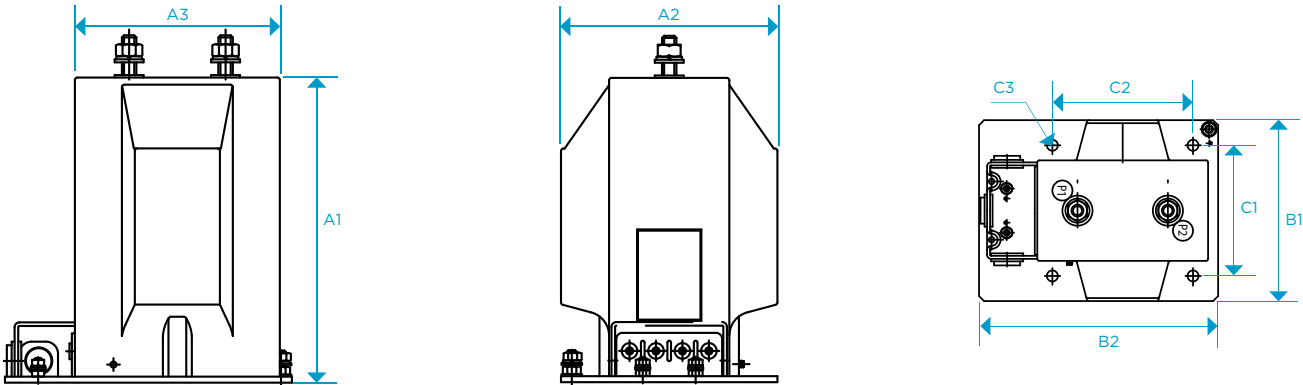
MARKING



Electrical characteristics									
Model	Highest voltage (kV)	Rated insulation level		Maximum primary current (A)		Short-circuit current I <sub>th</sub>			Maximum number of cores
		Power frequency (kV)	Lightning impulse (BIL) (kVp)			Short-circuit current I <sub>th</sub>		I <sub>din</sub> (A)	
				S.R.	D.R.	S.R.	D.R.		
ACD-7	7.2	20	60	1,200	2x600	96	50	2.5xI <sub>th</sub>	2
ACD-12	12	28	75	1,200	2x600	96	50	2.5xI <sub>th</sub>	2
ACF-12	12	28	75	2,000	2x600	100	50	2.5xI <sub>th</sub>	3
ACI-12	12	28	75	2,000	2x600	100	50	2.5xI <sub>th</sub>	3
ACIL-12	12	28	75	2,000	2x600	100	50	2.5xI <sub>th</sub>	3
ACM-12	12	28	75	2,500	2x1,000	100	50	2.5xI <sub>th</sub>	3
ACD-17	17.5	38	95	1,200	2x600	96	50	2.5xI <sub>th</sub>	2
CID-17	17.5	38	95	600	-	48	-	2.5xI <sub>th</sub>	1
ACF-17	17.5	38	95	2,000	2x600	100	50	2.5xI <sub>th</sub>	3
ACH-17	17.5	38	95	2,000	2x600	100	50	2.5xI <sub>th</sub>	3
ACI-17	17.5	38	95	2,000	2x600	100	50	2.5xI <sub>th</sub>	3
ACIL-17	17.5	38	95	2,000	2x600	100	50	2.5xI <sub>th</sub>	3
ACD-24	24	50	125	1,200	2x600	96	50	2.5xI <sub>th</sub>	2
ACF-24	24	50	125	2,000	2x600	100	50	2.5xI <sub>th</sub>	3
ACH-24	24	50	125	2,500	2x600	100	50	2.5xI <sub>th</sub>	3
ACJ-24	24	50	125	2,500	2x600	100	50	2.5xI <sub>th</sub>	3
ACJL-24	24	50	125	2,500	2x600	100	50	2.5xI <sub>th</sub>	3
ACM-24	24	50	125	2,500	2x1,000	100	50	2.5xI <sub>th</sub>	3
ACA-36	36	70	170	1,200	2x600	96	50	2.5xI <sub>th</sub>	1
ACF-36	36	70	170	2,500	2x600	100	50	2.5xI <sub>th</sub>	3
ACH-36	36	70	170	2,500	2x800	100	50	2.5xI <sub>th</sub>	3
ACM-36	36	70	170	2,500	2x1,000	100	50	2.5xI <sub>th</sub>	3
ACK-52	52	95	250	2,000	2x600	100	50	2.5xI <sub>th</sub>	3
ACK-72	72.5	140	325	2,500	2x1,000	100	50	2.5xI <sub>th</sub>	3
ACP-72	72.5	140	325	2,500	2x1,000	100	50	2.5xI <sub>th</sub>	3

Triple primary ratio available. Please consult for details.  
Subject to technical change.

DIMENSIONS



Dimensions and weights									
Model	Dimensions (mm)			Base (mm)		Mounting (mm)			Weight (kg)
	Height (A1)	Width (A2)	Length (A3)	Width (B1)	Length (B2)	Width (C1)	Length (C2)	Hole diameter (C3)	
ACD-7	255	180	170	180	238	130	140	11	16
ACD-12	255	180	170	180	238	130	140	11	16
ACF-12	245	178	270	178	353	150/155	280/295	11	27
ACI-12	220	148	270	148	337.5	125	270	11	23
ACIL-12	220	148	395	148	472	120	420	12	34
ACM-12	395	260	446	178	408	175	350	11	80
ACD-17	255	180	170	180	238	130	140	11	16
CID-17	140	120	178	120.6	212	95.2	141/151	10	15
ACF-17	245	178	270	178	295	150/155	280/295	11	27
ACH-17	220	178	307	178	380	150	283.5/310.5	11	25
ACI-17	220	148	270	148	337.5	125	270	11	23
ACIL-17	220	148	395	148	472	125	420	12	34
ACD-24	255	180	170	180	238	130	140	11	16
ACF-24	245	178	270	178	295	150/155	280/295	11	27
ACH-24	245	178	325	175	405	155	350	11	33
ACJ-24	280	178	270	178	345	150	280	14	35
ACJL-24	280	178	395	178	472	150	420	12	34
ACM-24	395	260	446	178	408	175	350	11	80
ACA-36	340	170	170	178	178	130	140	11	16
ACF-36	355	210	270	178	353	150/155	280/295	11	36
ACH-36	354	210	375	178	405	155	350	11	51
ACM-36	395	260	446	178	408	175	350	11	80
ACK-52	475	280	330	230	407	200	250/260	14	70
ACK-72	650	310	355	310	417.5	225	300	14	105
ACP-72	872	355	355	340	429.5	255	300	14	110

Brass primary terminals (silver-plated on request) with M12 zinc-plated, bichromated steel screw.  
Brass M5/M6 secondary terminals. Zinc-plated, bichromated steel M8/M12 earth terminals.  
Polycarbonate secondary terminal cover. Zinc-plated, bichromated steel covers available on request.  
Approximate dimensions and weights.

SUPPORT WINDOW TYPE

Current transformers for indoor service, encapsulated in resin. Toroidal support type without primary conductor to be installed in medium voltage busbars without insulation.

RANGE

- > Insulation voltage from 3.6 kV to 24 kV.
- > Rated primary currents up to 4,000 A.
- > Secondary currents: 1 and 5 A
- > Frequencies: 50 Hz, 60 Hz.

APPLICATIONS

- > Medium voltage air insulated primary distribution switchgears.
- > Capacitor banks.

ADVANTAGES

- > Possibility of secondary currents different from the standardized ones (1 and 5 A).
- > Rated primary currents over 4,000 A available.
- > Secondary terminals on the P1 or P2 side.
- > Designs for outdoor service available.
- > Stainless steel screws, bolts and nuts available.



> AGN-24  
Transformer for generator switchgear.



> Model AGNE



> Model AGN

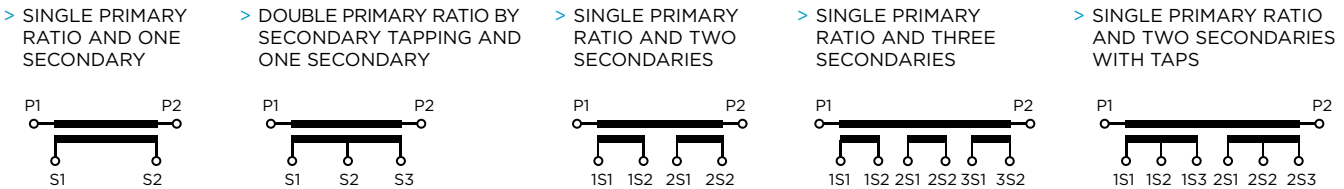


> Model AGPE



> Model AGD

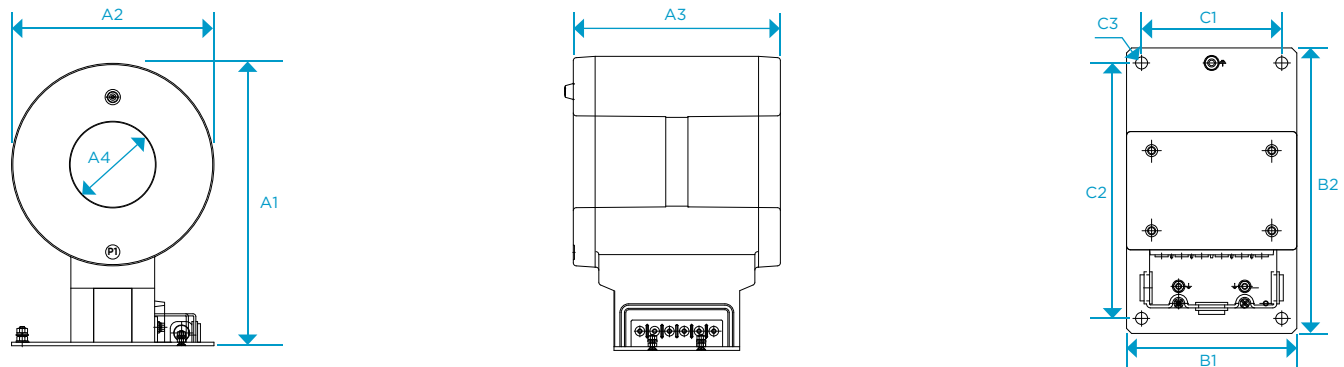
MARKING



Electrical characteristics							
Model	Highest voltage (kV)	Rated insulation level		Maximum primary current (A)	Short-circuit current I <sub>th</sub>		Maximum number of cores
		Power frequency (kV)	Lightning impulse (BIL) (kVp)		I <sub>th</sub> (kA/1s)	I <sub>din</sub> (kA)	
AGNE-3.6	3.6	10	40	4,000	100	2.5xI <sub>th</sub>	3
AGPE-12	12	28	75	4,000	100	2.5xI <sub>th</sub>	3
AGD-17	17.5	38	95	1,200	48	2.5xI <sub>th</sub>	1
AGN-17	17.5	38	95	4,000	100	2.5xI <sub>th</sub>	3
AGD-24	24	50	125	1,500	100	2.5xI <sub>th</sub>	1
AGN-24	24	50	125	4,000	100	2.5xI <sub>th</sub>	3

Subject to technical change.

DIMENSIONS



Dimensions and weights										
Model	Dimensions (mm)				Base (mm)		Mounting (mm)			Weight (kg)
	Height (A1)	Width (A2)	Length (A3)	Inner diameter (A4)	Width (B1)	Length (B2)	Width (C1)	Length (C2)	Hole diameter (C3)	
AGNE-3.6	397.5	285	230/280	120/150	307	170	255	140	12	42
AGPE-12	516	370	290	204	290	370	130	270	11	55
AGD-17	360	145	175	-	-	-	63	-	M8	11
AGN-17	397.5	285	230/280	120/150	285	170	255	140	12	42
AGD-24	360	160	156	-	-	-	63	-	M8	11
AGN-24	397.5	285	230/280	120/150	285	170	255	140	12	42

Option to supply with silver-plated copper primary bar on request.  
Brass M5/M6 secondary terminals. Zinc-plated, bichromated steel M8/M12 earth terminals.  
Polycarbonate secondary terminal cover. Zinc-plated, bichromated steel covers available on request.  
Approximate dimensions and weights.



GENERATOR TYPE

Current transformers for indoor service, encapsulated in resin. Toroidal type without primary conductor to be installed in generator outputs.

RANGE

- › Insulation voltage up to 24 kV.
- › Rated primary currents up to 12,000 A.
- › Higher currents available.
- › Secondary currents: 1 and 5 A.
- › Frequencies: 50 Hz, 60 Hz.

APPLICATIONS

- › Power generation.

ADVANTAGES

- › Measurement and protection applications.
- › Excellent performance in ambient temperatures up to 80°C.
- › Stainless steel screws, bolts and nuts available.



› Model ABG



› Model ABF

WALL-BUSHING TYPE

Current transformers for indoor service, encapsulated in resin. Toroidal model without primary conductor for installation as a wall bushing.

RANGE

- › Insulation voltage up to 36 kV.
- › Rated primary currents up to 8,000 A.
- › Secondary currents: 1 and 5 A.
- › Frequencies: 50 Hz, 60 Hz.

APPLICATIONS

- › Medium voltage air insulated primary distribution switchgears.
- › Power generation.

ADVANTAGES

- › Several inner window diameters.
- › Stainless steel screws, bolts and nuts available.



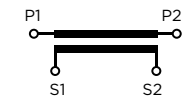
› Model ABE



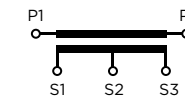
› Model ABD

MARKING

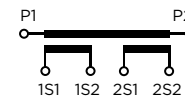
> SINGLE PRIMARY RATIO AND ONE SECONDARY



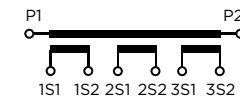
> DOUBLE PRIMARY RATIO BY SECONDARY TAPPING AND ONE SECONDARY



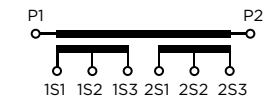
> SINGLE PRIMARY RATIO AND TWO SECONDARIES



> SINGLE PRIMARY RATIO AND THREE SECONDARIES



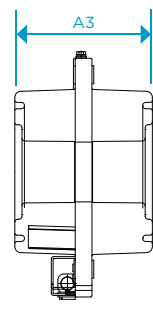
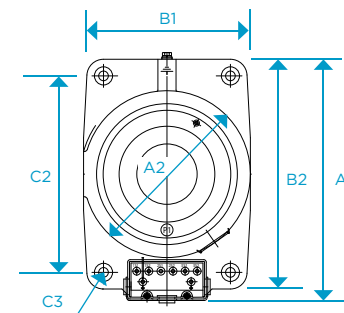
> SINGLE PRIMARY RATIO AND TWO SECONDARIES WITH TAPS



Electrical characteristics							
Model	Highest voltage (kV)	Rated insulation level		Maximum primary current (A)	Short-circuit current I <sub>th</sub>		Maximum number of cores
		Power frequency (kV)	Lightning impulse (BIL) (kVp)		I <sub>th</sub> (kA/1s)	I <sub>din</sub> (kA)	
ABD-7	7.2	20	60	4,000	100	2.5xI <sub>th</sub>	3
ABD-12	12	28	75	4,000	100	2.5xI <sub>th</sub>	3
ABD-17	17.5	38	95	4,000	100	2.5xI <sub>th</sub>	3
ABD-24	24	50	125	5,000	100	2.5xI <sub>th</sub>	3
ABD-36	36	70	170	5,000	100	2.5xI <sub>th</sub>	3
ABE-12	12	28	75	6,000	100	2.5xI <sub>th</sub>	4
ABE-24	24	50	125	8,000	100	2.5xI <sub>th</sub>	4
ABF-24	24	50	125	6,500	100	2.5xI <sub>th</sub>	3
ABG-24	24	50	125	10,000	100	2.5xI <sub>th</sub>	3

Subject to technical change.

DIMENSIONS



Dimensions and weights										
Model	Dimensions (mm)				Base (mm)		Mounting (mm)			Weight (kg)
	Height (A1)	Width (A2)	Length (A3)	Inner diameter (A4)	Width (B1)	Height (B2)	Width (C1)	Height (C2)	Hole diameter (C3)	
ABD-7	400	275	230	100/130	-	-	210	325	16	25
ABD-12	400	275	230	100/130	-	-	210	325	16	25
ABD-17	400	275	230	100/130	-	-	210	325	16	25
ABD-24	425	350	360	150	350	350	305	305	14	55
ABD-36	425	350	540	150	350	350	305	305	14	100
ABE-12	501.5	422	550	275	405	405	360	360	14	100
ABE-24	501.5	422	500	200	405	405	360	360	14	110
ABF-24	613.5	525	180/240	250	-	-	-	-	M16	55
ABG-24	718	625	180/240	350	-	-	-	-	M16	55

Brass M5/M6 secondary terminals. Zinc-plated, bichromated steel M8/M12 earth terminals. Polycarbonate secondary terminal cover. Zinc-plated, bichromated steel covers available on request. Approximate dimensions and weights.

# TOUCH-PROOF TYPE

Resin-cast transformers with metallic coating for installation in medium voltage switchgears insulated in gas.

## RANGE

- › Insulation voltage up to 52 kV.
- › Rated primary currents up to 2,000 A.
- › Secondary currents: 1 and 5 A.
- › Frequencies: 50 Hz, 60 Hz.

## APPLICATIONS

- › Medium voltage primary distribution gas insulated switchgears (GIS).

## ADVANTAGES

- › Possibility of secondary currents different from the standardized ones (1 and 5 A).
- › Possibility of frequencies different from the standardized ones (50 and 60 Hz).
- › Stainless steel screws, bolts and nuts available.

ARTECHE instrument transformers are installed in over 150 countries.

# WALL BUSHING WITH PRIMARY BAR TYPE

Current transformers for indoor service, encapsulated in resin. Toroidal type with primary conductor to be installed as wall bushings.

## RANGE

- › Insulation voltage up to 72.5 kV. Higher voltages also available.
- › Rated primary currents up to 3,000 A.
- › Secondary currents: 1 and 5 A.
- › Frequencies: 50 Hz, 60 Hz.

## APPLICATIONS

- › Distribution substations.

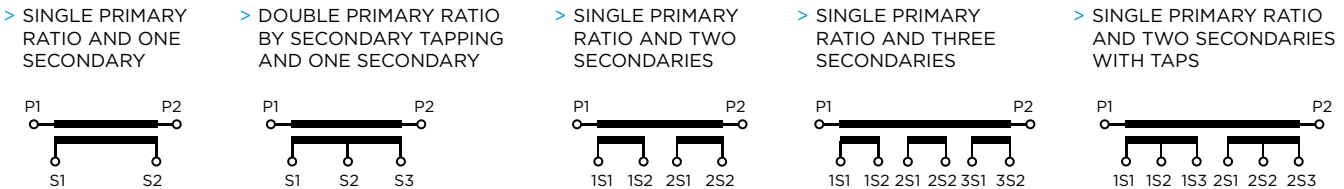
## ADVANTAGES

- › Wall bushings for indoor-indoor or indoor-outdoor installations.
- › Stainless steel screws, bolts and nuts available.



› Model APL

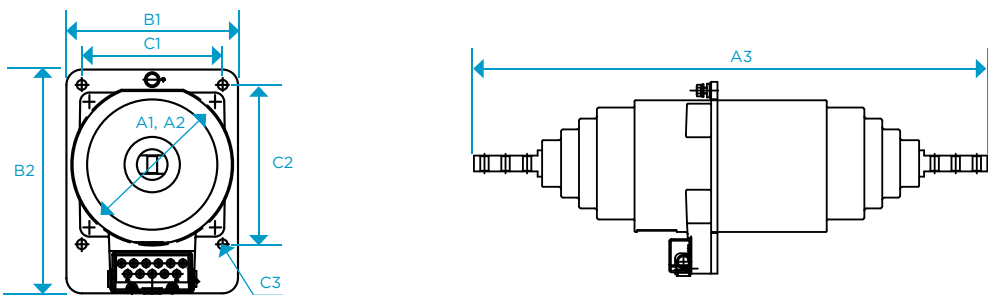
## MARKING



Electrical characteristics							
Model	Highest voltage (kV)	Rated insulation level		Maximum primary current (A)	Short-circuit current I <sub>th</sub>		Maximum number of cores
		Power frequency (kV)	Lightning impulse (BIL) (kVp)		I <sub>th</sub> (kA/1s)	I <sub>din</sub> (kA)	
APL-12	12	28	75	3,000	100	2.5xI <sub>th</sub>	3
APL-36	36	70	170	3,000	100	2.5xI <sub>th</sub>	3
APL-72	72.5	140	325	3,000	100	2.5xI <sub>th</sub>	3

Subject to technical change.

## DIMENSIONS



Dimensions and weights										
Model	Dimensions (mm)				Base (mm)		Mounting (mm)			Weight (kg)
	Height (A1)	Width (A2)	Length (A3)	Inner diameter (A4)	Width (B1)	Height (B2)	Width (C1)	Height (C2)	Hole diameter (C3)	
APL-12	245	245	675	-	290	290/400	240/175	240/360	16	44
APL-36	260	260	975	-	280	365	230	260	16	85
APL-72	260	260	1,530	-	280	365	230	260	16	95

Brass M5/M6 secondary terminals. Zinc-plated, bichromated steel M8/M12 earth terminals. Polycarbonate secondary terminal cover. Zinc-plated, bichromated steel covers available on request. Approximate dimensions and weights.



› Indoor/outdoor wall-bushing in a distribution substation.



## 2. VOLTAGE TRANSFORMERS

Support type

Support type with fuse

Touch-proof type



## 2. VOLTAGE TRANSFORMERS

### INTRODUCTION

Voltage transformers reduce the voltage in the medium voltage line to proportional and manageable values, and separate the measuring instruments, meters, relays, etc. from the power circuit.



Support type



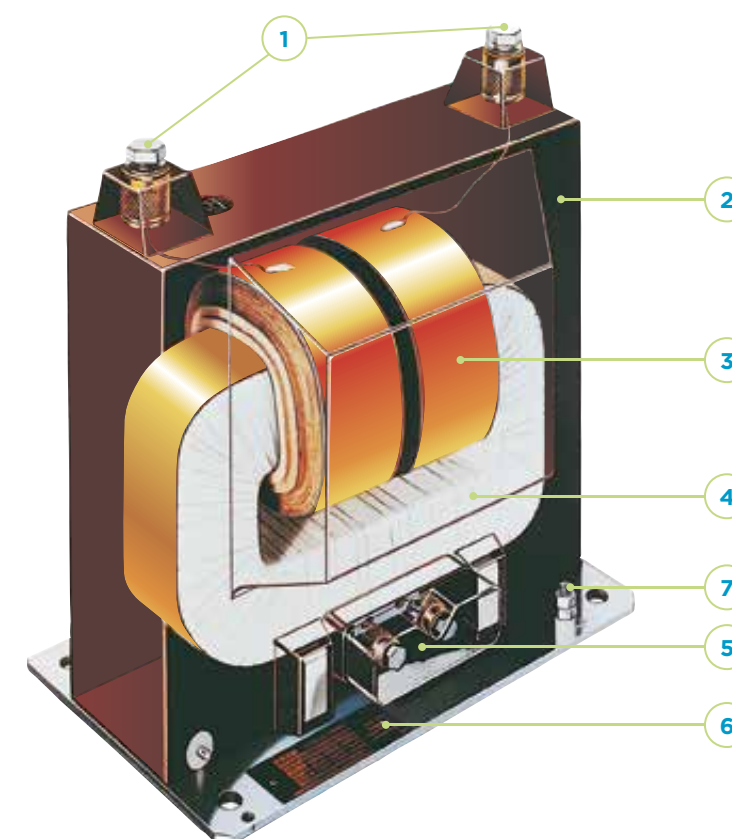
Support type with fuse



Touch-proof type

### SECTION

1. Primary terminals
2. Insulator (resin)
3. Primary winding
4. Magnetic core
5. Secondary terminal box
6. Base
7. Earth terminal

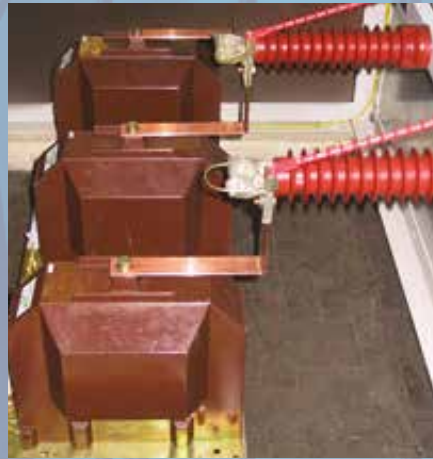


Model VCL





› UCL-7  
Voltage transformer  
compartment in  
medium voltage  
switchgear.



› UCL-24  
Support type  
voltage transformer  
for medium voltage  
switchgears.



› UCJF-24  
Voltage transformer with  
integrated fuse; reduces  
the space needed in the  
switchgear.

## 2. VOLTAGE TRANSFORMERS > Support type

### SUPPORT TYPE

Voltage transformers for indoor service encapsulated in resin for installation phase-earth (1 pole) or phase-phase (2 poles).

#### RANGE

- › Transformers for phase-earth connections with insulation levels up to 72.5 kV.
- › Transformers for phase-phase connections with insulation levels up to 36 kV.
- › Frequencies: 50 Hz, 60 Hz.
- › Secondary voltages:  
Measuring - 100: $\sqrt{3}$ , 110: $\sqrt{3}$ , 120: $\sqrt{3}$ ; 110, 115, 120V.  
Residual - 100:3, 110:3, 120:3.

#### APPLICATIONS

- › Medium voltage air insulated primary distribution switchgears.
- › Medium voltage air insulated secondary distribution switchgears.
- › Power generation.
- › Capacitor banks.
- › Power supply for auxiliary services or distribution automation up to 3 kVA.

#### ADVANTAGES

- › Possibility of frequencies different from the standardized ones (50 and 60 Hz).
- › Sealable cover for secondary terminal box.
- › Designed to withstand vibrations.
- › Stainless steel screws, bolts and nuts available.
- › Transformer assembly in any position (horizontal, vertical, etc.)
- › Excellent response under extreme weather conditions.
- › Wide product range, designed to comply with DIN 42600 standard.
- › Designs approved by Underwriters Laboratories (UL-USA) available.
- › Medium voltage fuses and fuse holders on demand.
- › Safety valve for relieving internal overpressure available (model UX/VX).
- › Secondary outputs with cables for the required length.



› Model UCI



› Model VCJ



› Model VCT



› Model UCN

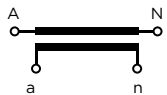


› Model VCN

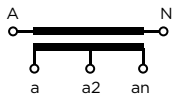
Single phase

MARKING

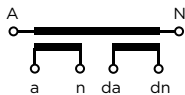
> SINGLE PRIMARY RATIO AND ONE SECONDARY



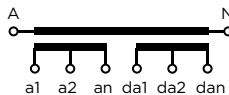
> DOUBLE PRIMARY RATIO BY SECONDARY TAPPING AND ONE SECONDARY



> SINGLE PRIMARY RATIO AND TWO SECONDARIES



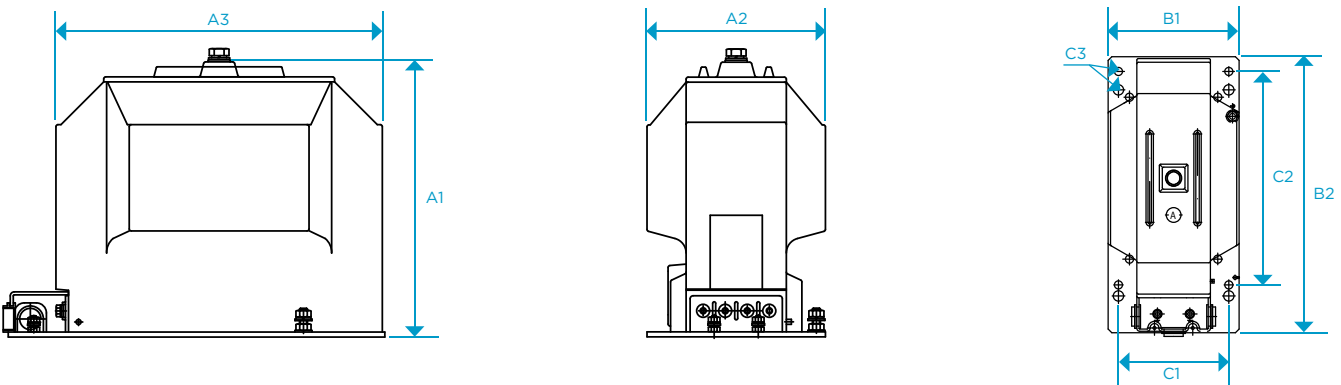
> SINGLE PRIMARY RATIO AND TWO SECONDARIES WITH TAPS



Electrical characteristics					
Model		Highest voltage (kV)	Rated insulation level		Thermal burden (VA)
			Power frequency (kV)	Lightning impulse (BIL) (kVp)	
UCD-7	-	7.2	20	60	300
UCE-7	-	7.2	20	60	750
UCL-7	UXL-7	7.2	20	60	450
UCI-12	UXI-12	12	28	75	350
UCL-12	UXL-12	12	28	75	450
UCN-12	UXN-12	12	28	75	600
UCD-17	-	17.5	38	95	1,000
UCE-17	-	17.5	38	95	1,500
UCI-17	UXI-17	17.5	38	95	350
UCL-17	UXL-17	17.5	38	95	450
UCG-24	UXG-24	24	50	125	650
UCI-24	-	24	50	125	350
UCJ-24	UXJ-24	24	50	125	600
UCL-24	UXL-24	24	50	125	450
UCN-24	UXN-24	24	50	125	600
UCS-24	UXS-24	24	50	125	1,500
UCG-36	UXG-36	36	70	170	650
UCN-36	UXN-36	36	70	170	600
UCS-36	UXS-36	36	70	170	1,500
UCS-52	UXS-52	52	95	250	1,500
UCS-72	UXS-72	72.5	140	325	1,500
UCT-72	-	72.5	140	325	1,500

Rated Voltage factor: 1.2 Un continuous, up to 1.9 Un / 8 h.  
Subject to technical change.

DIMENSIONS



Dimensions and weights										
Model		Dimensions (mm)			Base (mm)		Mounting (mm)			Weight (kg)
		Height (A1)	Width (A2)	Length (A3)	Width (B1)	Length (B2)	Width (C1)	Length (C2)	Hole diameter (C3)	
UCD-7	-	187.5	162	185	152	258	131	184/234	11	15
UCE-7	-	168	160	184	162	236.5	139.8	189/216	11	15
UCL-7	UXL-7	285	185	300	150	362	120/150	220/290	11	27
UCI-12	UXI-12	225	148	275	148	340	125	270	11	27
UCL-12	UXL-12	285	185	300	150	362	120/150	220/290	11	27
UCN-12	UXN-12	350	222	375	225	432	150/200	290/350	11	44
UCD-17	-	233.5	228	278	235	334	203	260/330	11	39
UCE-17	-	250	230	283	234	333.5	203	260.3/312	11	36
UCI-17	UXI-17	225	148	275	148	340	125	270	11	27
UCL-17	UXL-17	285	185	300	150	362	120/150	220/290	11	27
UCG-24	UXG-24	300	186	375	186	432.5	150/165	290/300	11	45
UCI-24	-	225	148	275	148	340	125	270	11	27
UCJ-24	UXJ-24	275	178	325	178	375	120/150/150	220/280/290	11/14/11	30
UCL-24	UXL-24	285	185	300	150	362	120/150	220/290	11	27
UCN-24	UXN-24	350	222	375	225	432	150/200	290/350	11	44
UCS-24	UXS-24	367	240	410	240	502	200	300	14	76
UCG-36	UXG-36	300	186	375	186	432.5	150/165	290/300	11	45
UCN-36	UXN-36	350	222	375	225	432	150/200	290/350	11	44
UCS-36	UXS-36	367	240	410	240	502	200	300	14	76
UCS-52	UXS-52	482	255	410	240	502	200	300	14	82
UCS-72	UXS-72	770	285	410	285	475	200	300	14	102
UCT-72	-	750	350	410	285	250/475	250	250	14	150

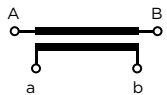
Brass primary terminals (silver-plated on request) with M12 zinc-plated, bichromated steel screw.  
Brass M5/M6 secondary terminals. Zinc-plated, bichromated steel M8/M12 earth terminals.  
Polycarbonate secondary terminal cover. Zinc-plated, bichromated steel covers available on request.  
Approximate dimensions and weights.



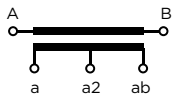
Phase-phase

MARKING

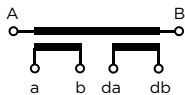
> SINGLE PRIMARY RATIO AND ONE SECONDARY



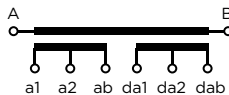
> DOUBLE PRIMARY RATIO BY SECONDARY TAPPING AND ONE SECONDARY



> SINGLE PRIMARY RATIO AND TWO SECONDARIES



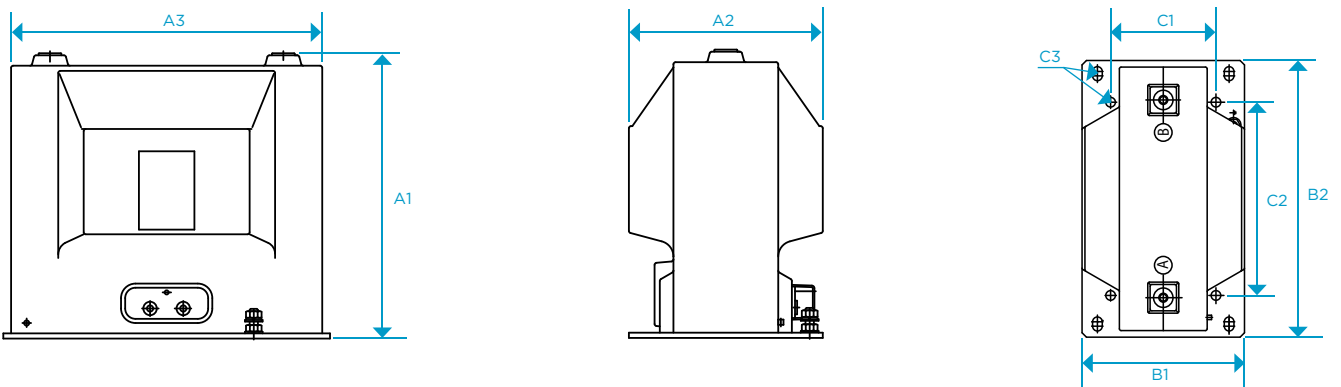
> SINGLE PRIMARY RATIO AND TWO SECONDARIES WITH TAPS



Electrical characteristics					
Model		Highest voltage (kV)	Rated insulation level		Thermal burden (VA)
			Power frequency (kV)	Lightning impulse (BIL) (kVp)	
VCD-7	-	7.2	20	60	750
VCE-7	-	7.2	20	60	750
VCL-7	VXL-7	7.2	20	60	600
VCI-12	VXI-12	12	28	75	400
VCL-12	VXL-12	12	28	75	600
VCN-12	VXN-12	12	28	75	750
VCO-12	-	12	28	75	600
VCD-17	-	17.5	38	95	1,500
VCE-17	-	17.5	38	95	1,500
VCL-17	VXL-17	17.5	38	95	600
VCCLR-17	-	17.5	38	95	600
VCJ-24	VXJ-24	24	50	125	600
VCL-24	VXL-24	24	50	125	750
VCN-24	VXN-24	24	50	125	750
VCO-24	-	24	50	125	500
VCS-24	VXS-24	24	50	125	1,500
VCT-24	-	24	50	125	4,000
VCN-36	VXN-36	36	70	170	750
VCS-36	VXS-36	36	70	170	1,500

Rated Voltage factor: 1.2 Un continuous, up to 1.9 Un / 8 h.  
Subject to technical change.

DIMENSIONS



Dimensions and weights										
Model		Dimensions (mm)			Base (mm)		Mounting (mm)			Weight (kg)
		Height (A1)	Width (A2)	Length (A3)	Width (B1)	Length (B2)	Width (C1)	Length (C2)	Hole diameter (C3)	
VCD-7	-	187	162	195	152	258	131	177.4/237.7	11	15
VCE-7	-	168	160	184	162	236.5	139.8	189/216	11	15
VCL-7	VXL-7	275	185	300	185	315	120/150	220/290	11	28
VCI-12	VXI-12	225	148	275	148	337.5	125	270	11	28
VCL-12	VXL-12	275	185	300	185	315	120/150	220/290	11	28
VCN-12	VXN-12	415	222	375	225	380	150/200	290/350	11	45
VCO-12	-	310	175	328	140	260	78	240	M6	35
VCD-17	-	295.7	228	278	235	334	203.2	260.2/311.2	11	39
VCE-17	-	250	230	283	234	333.5	203	260.3/312	11	36
VCL-17	VXL-17	275	185	300	185	315	120/150	220/290	11	28
VCCLR-17	-	245	172.6	289	170	285	142.5	252.5	14	24
VCJ-24	VXJ-24	275	178	325	178	375	120/150/150	220/280/290	11/14/11	32
VCL-24	VXL-24	275	185	300	185	315	120/150	220/290	11	28
VCN-24	VXN-24	415	222	375	225	380	150/200	290/350	11	45
VCO-24	-	310	175	328	140	260	78	240	M6	35
VCS-24	VXS-24	367	275	410	240	502	200	300	14	75
VCT-24	-	371	240	450	240	366	210	366	16	45
VCN-36	VXN-36	415	222	375	225	380	150/200	290/350	11	45
VCS-36	VXS-36	367	405	410	240	502	200	300	14	76

Brass primary terminals (silver-plated on request) with M12 zinc-plated, bichromated steel screw.  
Brass M5/M6 secondary terminals. Zinc-plated, bichromated steel M8/M12 earth terminals.  
Polycarbonate secondary terminal cover. Zinc-plated, bichromated steel covers available on request.  
Approximate dimensions and weights.

SUPPORT TYPE WITH FUSE

Voltage transformers for indoor service, encapsulated in resin for phase-earth (1 pole) or phase-phase (2 pole) installations and with a built-in fuse with resin housing on the primary side.

RANGE

- Transformers for phase-earth connections with insulation levels up to 36 kV.
- Transformers for phase-phase connections with insulation levels up to 12 kV.
- Frequencies: 50 Hz, 60 Hz.
- Secondary voltages:  
Measurement - 100:√3, 110:√3, 120:√3; 110, 115, 120 V.  
Residual - 100:3, 110:3, 120:3 V.

APPLICATIONS

- Medium voltage air insulated primary distribution switchgears.
- Medium voltage air insulated secondary distribution switchgears.

ADVANTAGES

- Possibility of frequencies different from the standardized ones (50 Hz and 60 Hz).
- Stainless steel screws, bolts and nuts available.
- Double primary ratio by secondary tapping.
- Safety valve for relieving internal overpressure available.
- 2 A rated current fuse. Other currents also available.
- Easy fuse assembly.
- Quick connection of the primary terminal.



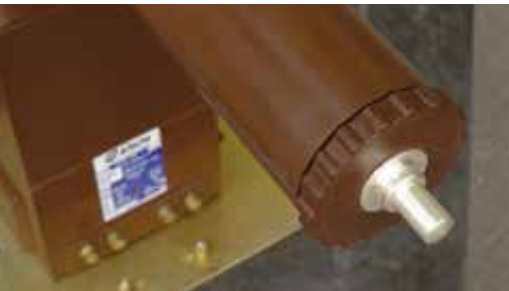
Model VCIF



Model UCIF

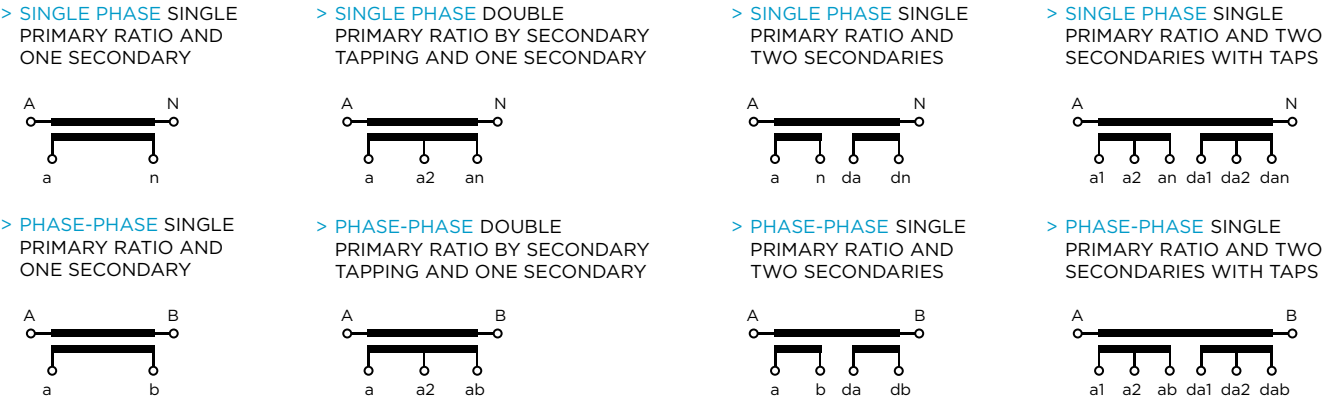


Model UCLF



Primary terminal with spring or fix connection for different applications.

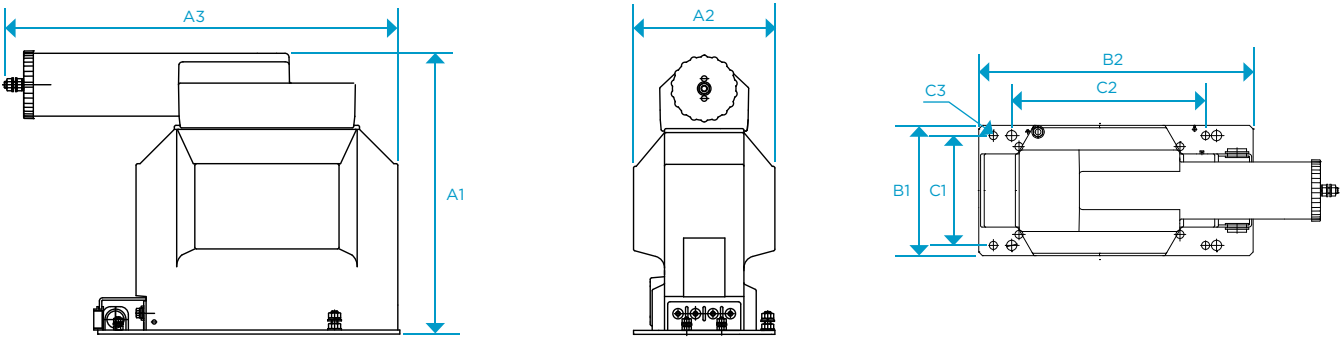
MARKING



Electrical characteristics						
Model		Highest voltage (kV)	Rated insulation level		Thermal burden (VA)	Use
			Power frequency (kV)	Lightning impulse (BIL) (kVp)		
VCIF-12	-	12	28	75	400	PHASE-PHASE
UCIF-17	UXIF-17	17.5	38	95	350	SINGLE PHASE
UCJF-24	UXJF-24	24	50	125	600	SINGLE PHASE
UCLF-24	UXLF-24	24	50	125	450	SINGLE PHASE
-	UXJF-36	36	70	170	600	SINGLE PHASE
UCSF-36	UXSF-36	36	70	170	1,500	SINGLE PHASE

Rated Voltage factor: 1.2 Un continuous, up to 1.9 Un / 8 h. Subject to technical change.

DIMENSIONS



Dimensions and weights										
Model		Dimensions (mm)			Base (mm)		Mounting (mm)			Weight (kg)
		Height (A1)	Width (A2)	Length (A3)	Width (B1)	Length (B2)	Width (C1)	Length (C2)	Hole diameter (C3)	
VCIF-12	-	295	373	275	152	280	130	200	11	29
UCIF-17	UXIF-17	302.5	148	449.5/494.5	148	340	125	270	11	29
UCJF-24	UXJF-24	352	178	467/567/512/612	178	375	150	280	14	32
UCLF-24	UXLF-24	362	185	459.5/559.5/507/607	185	362.5	120/150	220/290	11	29
-	UXJF-36	352	178	467/567/512/612	178	375	150	280	14	32
UCSF-36	UXSF-36	435	240	721/748	240	502	200	300	14	80

Brass primary terminals (silver-plated on request) with M12 zinc-plated, bichromated steel screw.  
Brass M5/M6 secondary terminals. Zinc-plated, bichromated steel M8/M12 earth terminals.  
Polycarbonate secondary terminal cover. Zinc-plated, bichromated steel covers available on request. Approximate dimensions and weights.

TOUCH-PROOF TYPE

Transformers for indoor service, encapsulated in resin with a metallic coating for installation in medium voltage switchgears insulated in gas.

RANGE

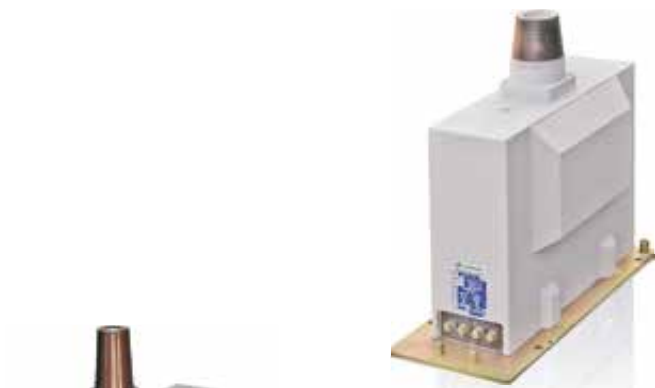
- Transformers for phase-earth connections with insulation levels up to 52 kV.
- Transformers for phase-phase connections with insulation levels up to 36 kV.
- Frequencies: 50 Hz, 60 Hz.
- Secondary voltages:  
Measurement - 100:√3, 110:√3, 120:√3; 110, 115, 120 V.  
Residual - 100:3, 110:3, 120:3 V.

APPLICATIONS

- Medium voltage primary distribution switchgears insulated with SF<sub>6</sub> gas.
- Medium voltage secondary distribution switchgears insulated with SF<sub>6</sub> gas.

ADVANTAGES

- Connection in the primary through a plug-in cable bushing as per EN 50181.
- Possibility of frequencies different from the standardized currents (50 and 60 Hz).
- Possibility of built-in primary fuse.
- Possibility of Metalclad type metallic coating.
- Possibility of silicone primary terminal type 1, 2, 3 as per EN 50181.
- Sealable metal secondary box cover.
- Safety valve for releasing internal overpressure.
- Stainless steel screws, bolts and nuts available.
- Transformer assembly in any position (horizontal, vertical, etc).



Model UEG



Model UEN



Model UMI



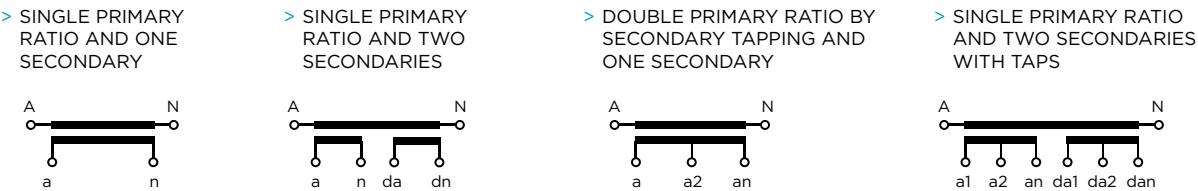
Model UEGF



Model VEG

UEI-24  
Touch-proof transformer for MV switchgears insulated with gas.

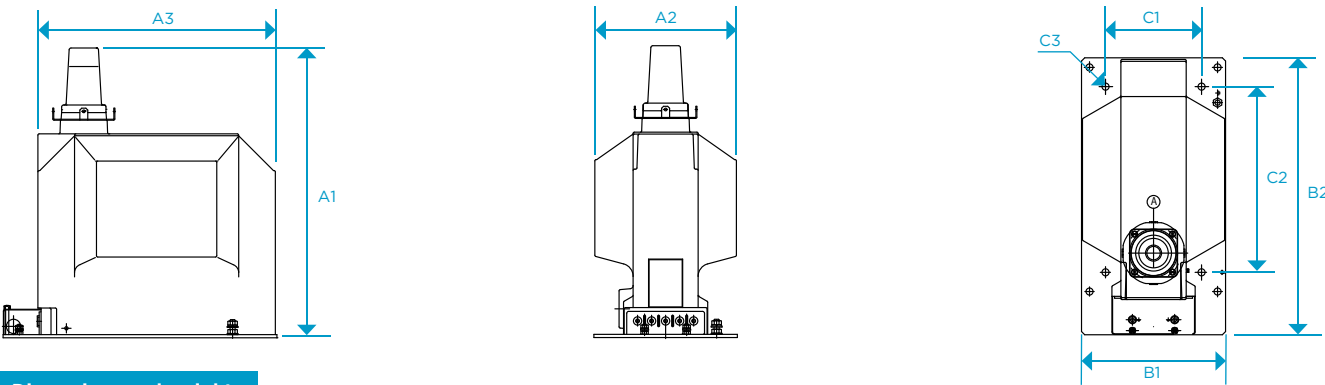
MARKING



Electrical characteristics					
Model	Highest voltage (kV)	Rated insulation level		Thermal Burden (VA)	Use
		Power frequency (kV)	Lightning impulse (BIL) (kVp)		
UEN-12	12	28	75	600	SINGLE PHASE
VEI-12	12	28	75	450	PHASE-PHASE
UEG-24	24	50	125	650	SINGLE PHASE
VEG-24	24	50	125	600	PHASE-PHASE
UEI-24	24	50	125	350	SINGLE PHASE
UEJ-24	24	50	125	600	SINGLE PHASE
UEN-24	24	50	125	600	SINGLE PHASE
UMI-24	24	50	125	350	SINGLE PHASE (METALCLAD)
UEG-36	36	70	170	650	SINGLE PHASE
UEGF-36	36	70	170	650	SINGLE PHASE WITH FUSE
UEN-36	36	70	170	600	SINGLE PHASE

Rated Voltage factor: 1.2 Un continuous, up to 1.9 Un / 8 h. Subject to technical change.

DIMENSIONS



Dimensions and weights									
Model	Dimensions (mm)			Base (mm)		Mounting (mm)			Weight (kg)
	Height (A1)	Width (A2)	Length (A3)	Width (B1)	Length (B2)	Width (C1)	Length (C2)	Hole diameter (C3)	
UEN-12	467	222	375	225	432	150/200	290/350	11	45
VEI-12	313,5	148	275	148	340	125	205/270	11	32
UEG-24	389	186	375	186	432.5	165	300	11	27
VEG-24	429	186	375	186	432.5	150	240/300	11	48
UEI-24	304.5	148	275	148	337.5	125	205/270	11	27
UEJ-24	349.5	178	325	178	375	120/150/150	220/280/290	11/14/11	30
UEN-24	467	222	375	225	432	150/200	290/350	11	45
UMI-24	306	148	280	148	338	128	270	11	30
UEG-36	429	186	375	186	432.5	150/165	300	11	48
UEGF-36	400	186	602	186	439.5	150/165	290/300	11	65
UEN-36	467	222	375	225	432	150/200	290/350	11	45

Brass primary terminals (silver-plated on request) with zinc plated and bichromated steel bolts, with primary lead to insulated cable in accordance with standard DIN 47636. Brass M5/M6 secondary terminals. Zinc-plated, bichromated steel M8/M12 earth terminals. Polycarbonate secondary terminal cover. Zinc-plated, bichromated steel covers available on request. Approximate dimensions and weights.



# 3. COMBINED TRANSFORMERS

## Support type



### 3. COMBINED TRANSFORMERS > Support type

## SUPPORT TYPE

Combine instrument transformers contain a current transformer and a voltage transformer within a single resin body with an external metallic coating.

### RANGE

- › Insulation level up to 24 kV.
- › Rated primary currents up to 200 A.
- › Secondary currents: 1 and 5 A.
- › Secondary voltages:  
Measurement -  $100:\sqrt{3}$ ,  $110:\sqrt{3}$ ,  $120:\sqrt{3}$ ; 110, 115, 120 V.  
Residual -  $100:3$ ,  $110:3$ ,  $120:3$  V.
- › Frequencies: 50 Hz, 60 Hz.

### APPLICATIONS

- › Metering points in underground distribution systems.

### ADVANTAGES

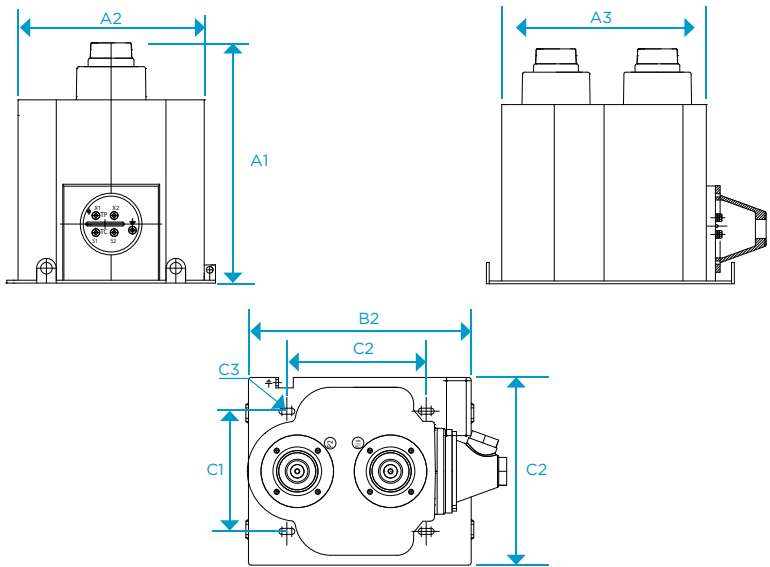
- › Primary connection with cable bushing as per IEEE standards. Can be designed based on customer specifications.
- › Waterproof metallic secondary terminal cover.
- › Stainless steel screws, bolts and nuts available.
- › Less space needed in the installation.
- › Savings in structures, supports, connectors, etc.
- › Reduced installation time.



› Model KCB

› KCB-17, 17.5 kV Combined transformers installed in a metering unit.

### DIMENSIONS



Electrical characteristics							
Model	Highest voltage (kV)	Rated insulation level		Maximum primary current (A)	Short-circuit current $I_{th}$		Maximum number of cores
		Power frequency (kV)	Lightning impulse (BIL) (kVp)		$I_{th}$ (kA/1s)	$I_{din}$ (kA)	
KCB-17	17.5	38	95	200	20	$2.5 \times I_{th}$	1
KCB-24	24	50	125	200	20	$2.5 \times I_{th}$	1

Subject to technical change.

Dimensions and weights										
Model	Dimensions (mm)				Base (mm)		Mounting (mm)			Weight (kg)
	Height (A1)	Width (A2)	Length (A3)	Inner diameter (A4)	Width (B1)	Length (B2)	Width (C1)	Length (C2)	Hole diameter (C3)	
KCB-17	360	305	340	-	320	370	219	254	11	53
KCB-24	360	305	340	-	320	370	219	254	11	53

Standard 3/8" threaded terminals for receiving female connection.  
1/4" standard threaded secondary terminals housed in water tight metal cases. Steel earthing terminal 7 mm in diameter.  
Approximate dimensions and weights.



# 4. OTHER TECHNOLOGIES

## Customized designs

### Low Voltage



#### 4. OTHER TECHNOLOGIES > Customized designs

### CUSTOMIZED DESIGNS

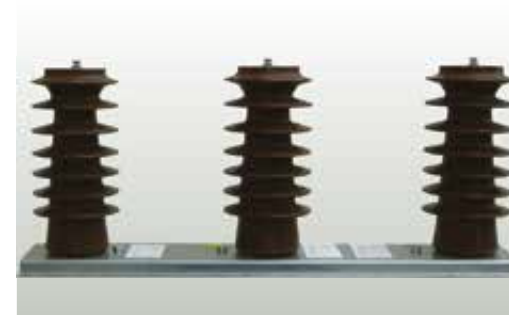
ARTECHE's experience and technical capability, training and production capacity facilitates design and manufacturing of multiple solutions adapted to the specific needs of each customer or situation.



> Touch-proof voltage transformer for gas-insulated switchgear with special primary terminal design.

> Touch-proof current transformer for gas-insulated switchgear.

> SCA-24  
Indoor resistive divider.



The innovation undertaken by ARTECHE in instrument transformers during the late years have made them more efficient, with compact designs for an easier transport, store, and installation and to minimize their visual impact.

> VCS-36  
Support type voltage transformer with overhead medium voltage circuit breaker.



> AGD-24  
Current transformer for medium voltage modular circuit breaker outputs.



> Support type voltage transformers with fuse VCT type.





#### 4. OTHER TECHNOLOGIES > Low Voltage

## LOW VOLTAGE

ARTECHE has a wide range of instrument transformers for metering and protection up to 1.2 kV.

- > Current transformers for metering and/or protection (Toroidal, with primary busbar, window type).
- > Homopolar Current Transformers.
- > Split-core Current Transformers.
- > Interposing Current Transformers (low currents).
- > Adder/suminator Current Transformers.
- > Voltage transformers for metering and/or protection.
- > Support insulators.
- > Signal transmission insulators.
- > Wall bushing Insulators.
- > Three phase insulation plates.

For more information, refer to catalog: LOW VOLTAGE INSTRUMENT TRANSFORMERS.



ARTECHE has a multinational work team, committed to the goals of the company and ready to find effective answers to any challenge.



## 5. MANUFACTURING AND TECHNOLOGY

With 70 years of experience, ARTECHE guarantees the performance of its transformers regardless of altitude, weather, seismic or environmental conditions.



## MANUFACTURING AND TECHNOLOGY

- › Equipment undergoing a continuous innovation process including: computerized systems for transformer calculation, analysis of the distribution of the electric field by FEM, automatic winding machines, casting in epoxy resin or polyurethane by gravity in vacuum tanks or pressurized gelification, controlled polymerization in large ovens.
- › Own laboratories with modern equipment, approved for any routine or type test, either for new developments or for specific requirements from our customers in power generation, transmission, distribution or industry.
- › Approved in laboratories belonging to the International Metrology Committee: PTB (Germany), L.C.O.E (Spain), GOST (Russia), BEV (Austria), GUM (Poland) etc.
- › Large production capacity of more than 130,000 units per year in medium voltage and an almost unlimited number of devices in low voltage, insulators and wall bushings. This capacity allows us to give a quick answer to any requirement.
- › Flexible designs, adapted to any specification, as a result of our strong engineering team located in all our production facilities.
- › Maximum safety with resin-cast transformers in which the core and the winding form a compact block. The resin acts as a dielectric support, protective casing and thermal conductor for the transformer.
- › Equipment compliant to any international or domestic standard: IEC, IEEE, UNE, BS, VDE, SS, CAN, AS, UL, NBR, JIS, GOST, NF, etc.

Maximum safety and reliability within a custom-made design.



- › Physical and chemical laboratories conduct over 130 tests to certify the quality of raw materials.



## 6. QUALITY & ENVIRONMENT

Exceeding **environmental regulations**, ARTECHE has been able to minimize the use off hazardous materials, energy consumption and waste generation.



## QUALITY & ENVIRONMENT

Everyone in the ARTECHE Group works under the criteria set out in our environmental and quality policy.

A sum of regulated procedures based on communication, teamwork, prevention analysis and continuous improvement, common to the whole organization.

- › Advanced sustainability criteria in production and in the creation and development of new products.
- › Compact designs, manufactured with minimal energy consumption and enviromental-friendly materials.
- › Internal and external skill motivation programs.
- › Advanced development of knowledge management.
- › Quality agreements with utilities.
- › Physico-chemical and electrical laboratories for testing under any International Standard.
- › Type test reports issued by KEMA, CESI, LAPEM, RENARDIÈRES, etc.
- › Final testing according to specific customer requirements.
- › Approvals in more than 100 electricity companies.
- › ISO 14001:2004.
- › ISO 9001:2008.
- › OHSAS 18001:2007.

ARTECHE's financial and technological independence gives a privileged position ahead of the challenges in the sector.



- › Officially homologated in-house medium voltage laboratories with modern technology to perform any routine test or type test.



## 7. SERVICE

Over 70 technical/sales service centers with real knowledge about each customer provide fast and close service.



## SERVICE

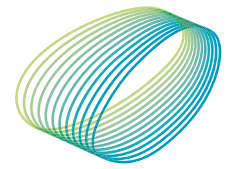
- › ARTECHE's service is based on a close relationship with the customers, reflected in the integrated post-sale assistance plan and structured client opinion system.
- › In addition to ensuring rapid response, ARTECHE developed a continuous service improvement plan, which sustains an extensive training program with courses, publications, conferences, etc.
- › ARTECHE's focus on service, with a broad experience leading us to be an active participant in the electrical organizations such as: IEC, IEEE, CIGRE, CIRED, ASINEL, etc.
- › ARTECHE has production facilities on four continents (North America, South America, Europe, Asia and Australia) and more than 70 technical/commercial offices. Thus ARTECHE provides effective responses to the requirements of any customer and situation, based on the global knowledge acquired.

ARTECHE has the technology and capabilities of instrument transformers. Thus we provide the best solution available in the market.



- › The solutions ARTECHE has developed and expanded upon have made it a major player participating in the most significant events and workgroups in the electricity sector.





arteche  
Moving together