

# ALH-0.66 系列电流互感器 安装使用说明书

APT0.463.004

苏州西门子电器有限公司  
天台分公司

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## 1 范围

本文件说明了ALH-0.66 系列电流互感器的安全使用和注意事项、技术特性以及安装要求，主要适用于本公司设计生产的ALH-0.66 系列电流互感器。该电流互感器符合 IEC61869-2，GB20840.2 要求。

## 2 规范性引用文件

下列文件中的条款通过本标准的引用而成为本标准的条款，本文件出版时所示版本均有效。凡是注日期的引用文件，其随后所有的修改单（不包括勘误的内容）或修订版均不适用于本文件，然而，鼓励根据本文件达成协议的各方研究是否可使用这些文件的最新版本。凡是不注日期的引用文件，其最新版本适用于本文件。

APT0.463.004 ALH-0.66 系列电流互感器使用说明书

					资 料 来 源	编 制		
					自 编	校 对		
						审 核		
	重绘	技更字2016-362	洪昌斌	20161223		会 签		
	2	技更字2015-110			提出部门	技术科	标 准 化	
标 记	处 数	更 改 文 件 号	签 字	日 期			批 准	

## 使用说明书

图号: APT0.463.004

安装, 调整, 维修设备前, 请阅读并理解说明书。

### 1 概述

#### 1.1 主要用途

ALH-0.66 系列电流互感器采用高强度外壳全封闭结构。当一次侧穿芯匝数为 1 时, 中心孔以穿母线为主, 也可以穿电缆; 中心孔穿软质电缆时, 需根据型号标明的一次侧匝数穿芯。本产品为测量用互感器, 一般配合测量仪表使用, 用来显示被测电路的工作电流。也可用于控制、保护电路等场所。P1、P2 表示一次极性端, S1、S2 表示二次极性端。P1、S1 及 P2、S2 为同名端 (减极性)。

#### 1.2 型号的组成及其代表意义

ALH -0.66 30 I 100/5 0.5R 2.5VA 5T

① ② ③④ ⑤ ⑥ ⑦ ⑧

- ① 互感器型号: 沈阳变压器研究所注册批准的型号
- ② 额定电压等级: 0.66kV, 即660V
- ③ 穿孔规格: 见规格尺寸表
- ④ 互感器型号: I型, II型, III型, M型,  $\phi$ 型
- ⑤ 额定电流比: “/” 前后分别为一次侧二次测电流, 单位为A
- ⑥ 准确度等级: 数字表示准确度级, R为级
- ⑦ 额定载荷: 输出载荷值, 单位为VA
- ⑧ 穿芯匝数: 一次电流的穿芯匝数, 单位为T

### 2 安全使用和注意事项

- 1) 严格按照铭牌上额定功率、额定变比、准确度等级使用本产品;
- 2) 二次接线端子 S1、S2 不得开路, 且负载接线保证接触良好, 以免互感器产生高电压危及设备和人身安全; S1、S2 应有一端可靠接地, 以防止一二次间绝缘击穿;
- 3) 二次回路连接导线应采用足够容量且中间无接头的铜芯绝缘线;
- 4) 二次绕组回路中所串入仪表的阻抗不应超过相关技术标准的规定;
- 5) 应避免继电保护用互感器和电能计量用电流互感器并用。

### 3 技术特性

#### 3.1 技术参数

- 1) 额定一次电流 ( $I_{pn}$ ): 5A~5000A
- 2) 额定一次二次电流 ( $I_{sn}$ ): 5A/1A
- 3) 额定工作电压 ( $U_n$ ): AC660V (50/60Hz)
- 4) 额定连续热电流 ( $I_{cth}$ ):  $1.2 \times I_{pn}$
- 5) 额定短时热电流 ( $I_{th}$ ):  $\geq 60 \times I_{pn}$  (1sec.)
- 6) 工频耐压: 3kV,  
(1min, 50Hz; 外壳与二次端子间)
- 7) 绝缘等级: E
- 8) 接线端子的型式: 螺钉 (M4) 压片紧固式
- 8) 操作力矩: 拧紧力矩 0.8~1.2N.m,  
最大承受力矩 2.4N.m;
- 9) 安装及穿孔尺寸见图 1:
- 10) 防护等级: 端子 IP00, 外壳 IP40
- 11) 准确等级及对应误差值: (见表 1&表 2)

准确度级	在下列额定电流 (%) 下的电流误差 $\pm\%$					在下列额定电流 (%) 下的相位差							
						$\pm (^{\circ})$				$\pm \text{crad}$			
	5	20	100	120		5	20	100	120	5	20	100	120
0.2	0.75	0.35	0.2	0.2		30	15	10	10	0.9	0.45	0.3	0.3
0.5	1.5	0.75	0.5	0.5		90	45	30	30	2.7	1.35	0.9	0.9
1.0	3	1.5	1	1		180	90	60	60	5.4	2.7	1.8	1.8

表2: 特殊用途的测量用电流互感器电流误差和相位差限值 (0.2S级/0.5S级)

准确度级	在下列额定电流 (%) 下的电流误差 $\pm\%$					在下列额定电流 (%) 下的相位差									
						$\pm (^{\circ})$				$\pm \text{crad}$					
	1	5	20	100	120	1	5	20	100	120	1	5	20	100	120
0.2S	0.75	0.35	0.2	0.2	0.2	30	15	10	10	10	0.9	0.45	0.3	0.3	0.3
0.5S	1.5	0.75	0.5	0.5	0.5	90	45	30	30	30	2.7	1.35	0.9	0.9	0.9

### 3.2 工作环境

- 1) 使用环境温度：-5℃~+40℃；24小时平均环境温度不超过+35℃；
- 2) 空气相对湿度：24小时内平均不超过95%，1个月内平均不超过90%；
- 3) 安装地点的海拔：海拔不超过1000m；
- 4) 振动或轻微地震：由外部原因引起的电流互感器振动或轻微地震可以忽略；
- 5) 污染等级：II类

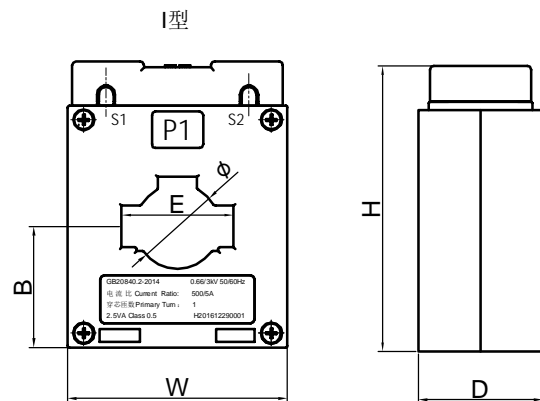
### 4 安装步骤与安装尺寸

#### 4.1 安装步骤及安装方式

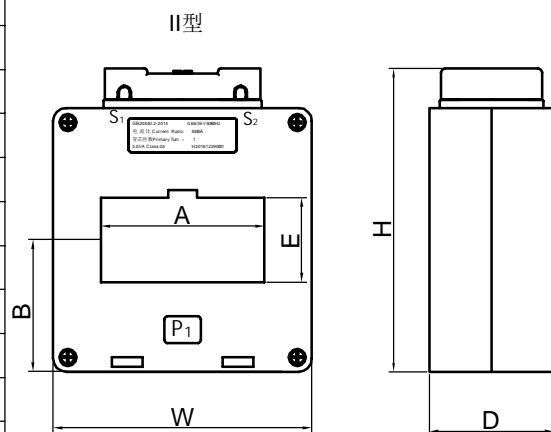
安装时一次侧和被测线路串联，二次侧与电测仪表串联，且接线时保证极性相对应（P1对应S1；P2对应S2）。

#### 4.2 外形尺寸（未注公差按GB/T 1804-2000 IT18级）

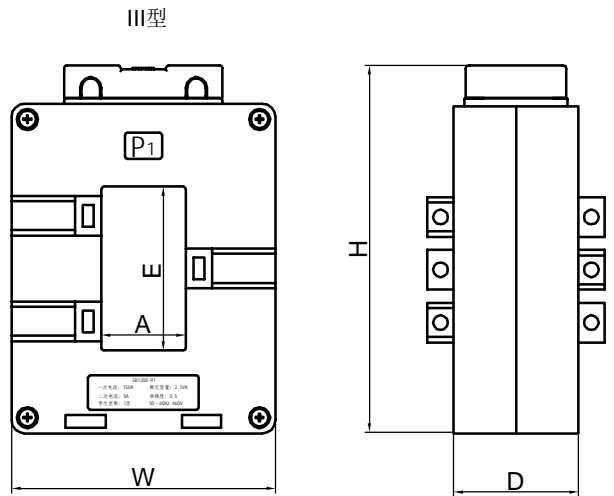
尺寸 规格	外形尺寸(mm)				穿孔尺寸(mm)		安装方式 Φ
	W	H	D	B	E	Φ	
30I	60	79	34	33.5	30.5	23	A、B、D
30I-I	60	79	45	33.5	31	22	A、B、D
40I	75	97	44	41	42	30	A、B、C
60I	101.5	124.5	44.5	55	61	46	C
80I	118	137.5	45	62.5	81.5	52	B、C
100I	146	161.5	45	73	102	62	B、C



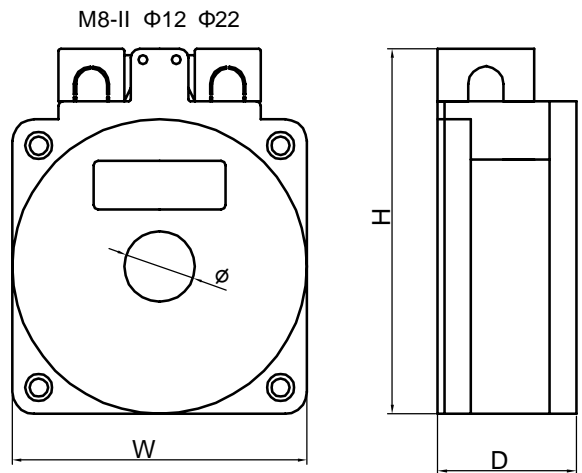
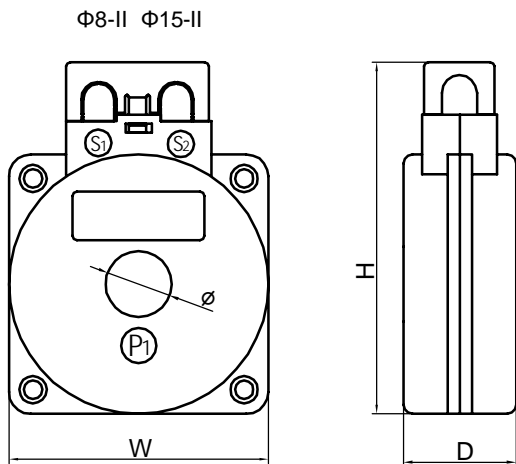
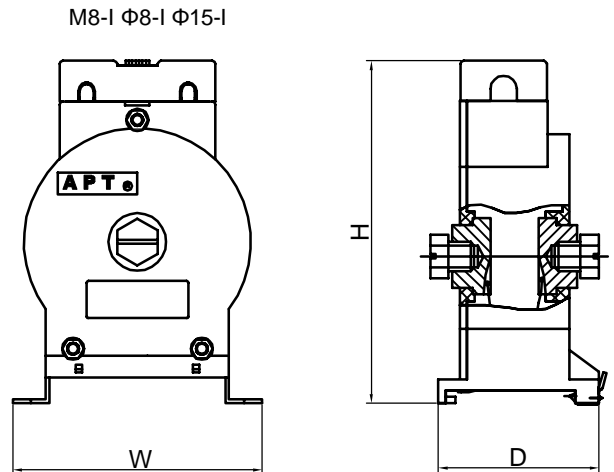
尺寸 规格	外形尺寸(mm)				穿孔尺寸(mm)		安装方式
	W	H	D	B	A	E	
30II	60	101	44	43	34	26	B、D
40II	75	105	44	45	42	32	B、D
50II	86.5	112.5	45	49	52	32	B、D
60II	98	115	46	50	62	32	C
80II	117.8	120.5	45	53	82	32	C
100II	140	129	49	57	102	32	C
130II	175	133	46	59	136	36	E
180II	224	132.5	48	59	182	36.5	E
200II	244	132.5	50	59	204	35	E
60X50II	100	141	46	63	62.5	52	C
80X50II	120	141.5	47	63	82	52	C
100X50II	142	149.5	49	67	102	54	C
120X50II	167	152.5	49	69	122	53	C
220X50II	280	189	60	87	225	55	E
170X100II	255	219	60	102	170	106.5	E



尺寸 规格	外形尺寸 (mm)			穿孔尺寸 (mm)			安装方式
	W	H	D	A	E	Φ	
20III	72	75.5	36	11	21	21	A、J
30III	72	98.5	50	12	32	26	A、J
50III	75	114	56	16	52	/	J
60III	100	139	55	32	62	/	J
80III	100	164	55	32	82	/	J
100III	100	189	55	32	102	/	J
120III	125	214	55	52	122	/	J
130III	125	214	55	56	132	/	J



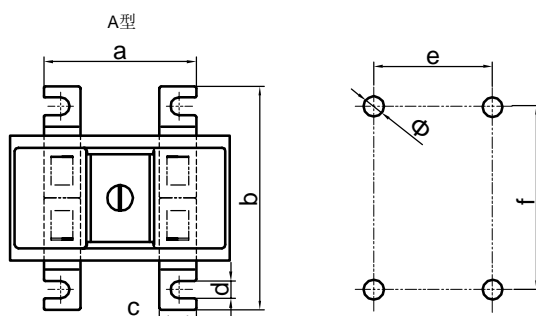
尺寸 规格	外形尺寸 (mm)			穿孔尺寸 (mm)	安装方式
	W	H	D	Φ	
M8-I	74	101	44	/	F、G、I
Φ8-I	74	101	44	8	F、G
Φ15-I	74	101	44	15	F、G
M8-II	67	86	24	/	H、I
Φ12	67	86	24	12	H
Φ22	67	86	24	22	H
Φ8-II	59	80	26	8	/
Φ15-II	59	80	26	15	/



### 4.3 安装尺寸（未注公差按 GB/T 1804-2000 IT18级）

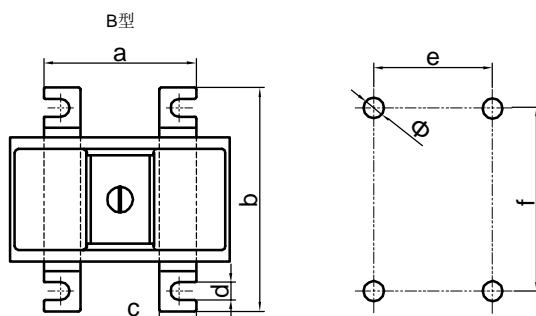
A 型安装尺寸

规格	安装尺寸(mm)						
	a	b	c	d	e	f	Φ
30I	41.4	61	10	5	32.4	50	5
30I-I	42	70	10	5	33	59	5
40I	54	70	10	5	45	59	5
20III	51	61	10	5	42	50	5
30III	51	75	10	5	42	64	5



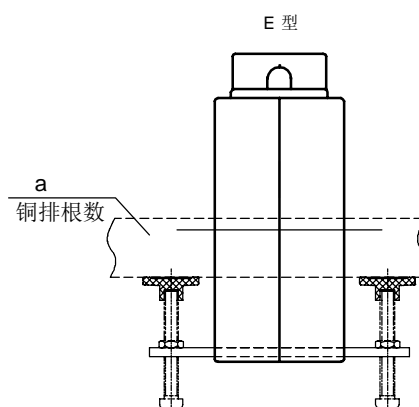
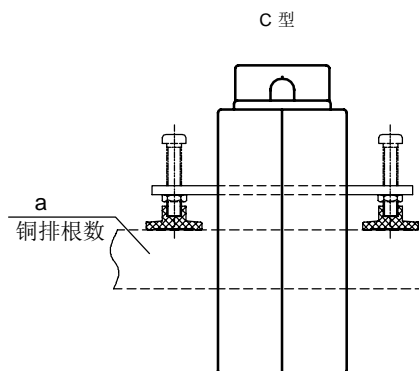
B 型安装尺寸

规格	安装尺寸(mm)						
	a	b	c	d	e	f	Φ
30I	41.6	60	10	5	32.6	48	5
30I-I	42	70	10	5	33	58	5
40I	54	70	10	5	45	58	5
60I	72	71	10	5	63	59	5
80I	70	71	10	5	61	59	5
100I	90	71	10	5	81	59	5
30II	38.6	70	10	5	29.6	58	5
40II	54	70	10	5	45	58	5
50II	40	71	10	5	31	59	5



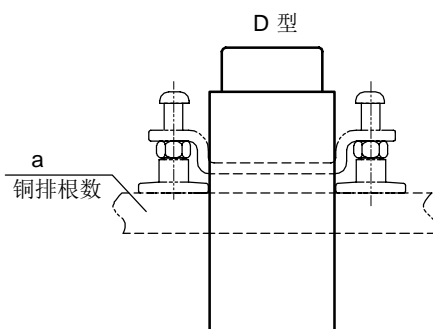
C、E 型安装尺寸

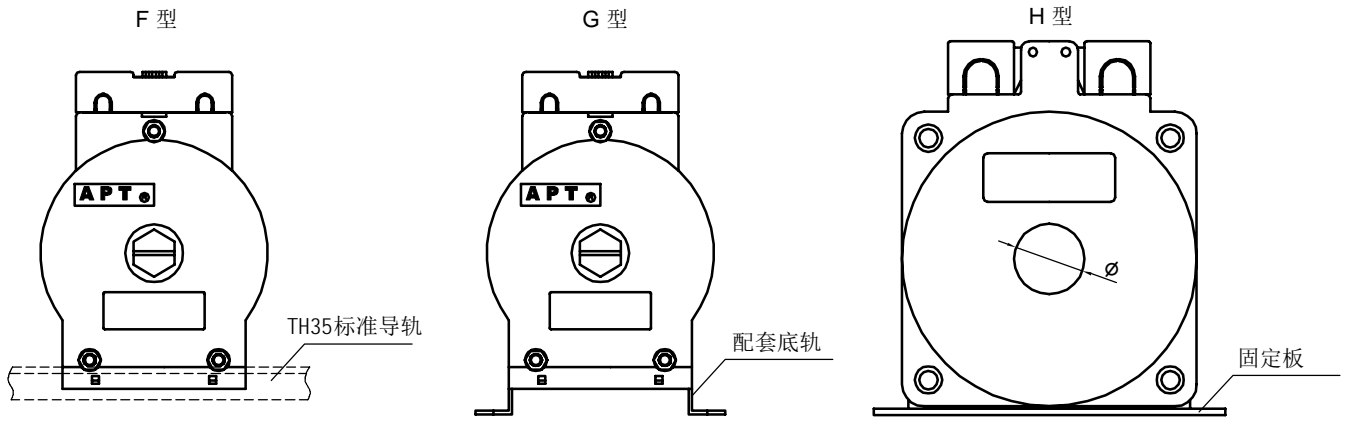
规格	尺寸 铜排 (mm)	a		规格	尺寸 铜排 (mm)	a	
		C型	E型			C型	E型
40I	40X10	1	/	180II	180X10	/	1-2
60I	60X10 60X6	1 2	/	200II	200X10	/	1-2
80I	80X10 60X6	1	/	60X50II	60X10	2-3	2-3
100I	100X10 80X10	1 2	/	80X50II	80X10	2-3	2-3
60II	60X10	1-2	1-2	100X50II	100X10	2-3	2-3
80II	80X10	1-2	1-2	120X50II	120X10	1-3	1-3
100II	100X10	2	2	220X50II	220X10	/	2-3
130II	130X10	/	1-2	170X100II	120X10 100X10	/	1-3 3-6



D 型安装尺寸

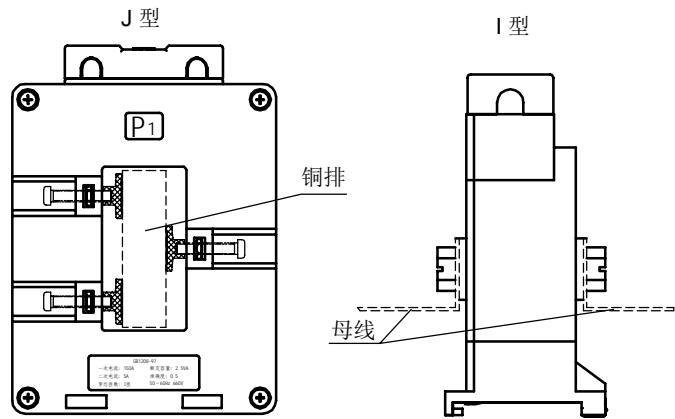
规格	尺寸 铜排 (mm)	a
		D型
30I	30X10	1
30I-I	30X10	1
30II	30X10	1-2
40II	40X10	1-2
50II	50X10	1-2





J 型安装尺寸

尺寸 规格	铜排 (mm)	a		尺寸 规格	铜排 (mm)	a	
		J型				J型	
20III	20X10	1		80III	80X10	1-2	
30III	30X10	1		100III	100X10	1-2	
50III	50X10	1		120III	120X10	1-3	
60III	60X10	1-2		130III	130X10	1-3	





Instructions

Drawing No. : APT0.463.048

Before installing the device, please read the instructions.

1.Summary

1.1 Main application

Current transformers with ALH-0.66 type adopt high strength enclosure and totally-enclosed structure .When it has cross shape perforation with one coil of core-though,center-hole is perforated mainly bus( also available for cable). Flexible cable is operated according to turns on the primary side which is marked on type.This product is measuring current transformer which is normally used with measuring meter,and display operational current of circuit-under-test. It's applied to control, protection circuit and other places. P1 and P2 refer to the primary polarity end, S1 and S2 refer to s secondary polarity end . P1,S1 and P2,S2 are dotted terminals (subtractive polarity).

1.2 General product information:Model specification

ALH -0.66 30 I 100/5 0.5R 2.5VA 5T

① ② ③④ ⑤ ⑥ ⑦ ⑧

- ① Model: Registration approval model
- ② Rated voltage class: 0.66kV, 660V
- ③ Specification code: the width of center-hole(mm)
- ④ Auxiliary specification code: The shape of cross-hole
- ⑤ Rated transformation ratio: 100/5 primary current is 100A and secondary current is 5A
- ⑥ Accuracy class: 0.5R said accuracy class is 0.5
- ⑦ Rated output: 2.5VA said rated output is 2.5VA
- ⑧ Turns: 5T said through turns is 5

2.Installation caution

- 1) The product is used strictly with nameplate information, such as rated power ,rated transformation ratio,accuracy class ,etc.
- 2) secondary terminal S1,S2 can't open and load wiring keep well connection . Otherwise, the high voltage may endanger equipment and personal safety .one of S1,S2 must ground reliably to prevent insulation breakdown between the primary and the secondary .
- 3) Connecting wire in secondary loop is an unbroken cooper insulated wire. It should have enough capacity.
- 4) Instrument impedance in secondary winding loop must conform to related technical standard provisions.
- 5) Avoid to use relay protective current transformer and measuring current transformer together. .

3.Technical feature

3.1 Parameters

- 1) Rated primary current (I<sub>pn</sub>): 5A~3000A
- 2) Rated secondary current(I<sub>sn</sub>): 5A/1A
- 3) Rated operational voltage(Un): AC660V (50/60Hz)
- 4) Rated continuous thermal current(I<sub>cth</sub>): 1.2 x I<sub>pn</sub>
- 5) Rated short-time thermal current (I<sub>th</sub>) :  
≥60x I<sub>pn</sub> (1sec.)
- 6) Power frequency withstand voltage:3kV (1min  
50Hz;Between enclosure and secondary terminal)
- 7) Insulation class:E
- 8) Terminal type: screw-type terminal(M4)
- 9) Operational moment: tightening torque 0.8~1.2N.m ,  
Maximum torque 2.4N.m;
- 10) The dimension of center-hole and installation  
(Picture1):
- 11) Degree of protection: terminal IP00, enclosure IP40
- 12) Accuracy class and relevant error( sheet 1 & sheet 1)

Accuracy class	Current error in rated current (%) case ±%				Phase displacement rated current (%) case							
					± (°)				±crad			
	5	20	100	120	5	20	100	120	5	20	100	120
0.2	0.75	0.35	0.2	0.2	30	15	10	10	0.9	0.45	0.3	0.3
0.5	1.5	0.75	0.5	0.5	90	45	30	30	2.7	1.35	0.9	0.9
1.0	3	1.5	1	1	180	90	60	60	5.4	2.7	1.8	1.8

Accuracy	Current error in rated current(%) case ±%					Phase displacement rated current(%) case									
						± (°)					±crad				
	1	5	20	100	120	1	5	20	100	120	1	5	20	100	120
0.2S	0.75	0.35	0.2	0.2	0.2	30	15	10	10	10	0.9	0.45	0.3	0.3	0.3
0.5S	1.5	0.75	0.5	0.5	0.5	90	45	30	30	30	2.7	1.35	0.9	0.9	0.9



### 3.2 Operation condition

- 1) Environment temperature:  $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ ; Average temperature can't exceed  $+35^{\circ}\text{C}$  in 24 hours.
- 2) Relative air humidity: Average air humidity can't exceed 95% in 24 hour .The monthly average humidity is less than 90%.
- 3) Install location altitude: no more than 1000m;
- 4) Vibration or slight earthquake: current transformer vibration or slight earthquake caused by external reason can be ignored.
- 5) Pollution class: II

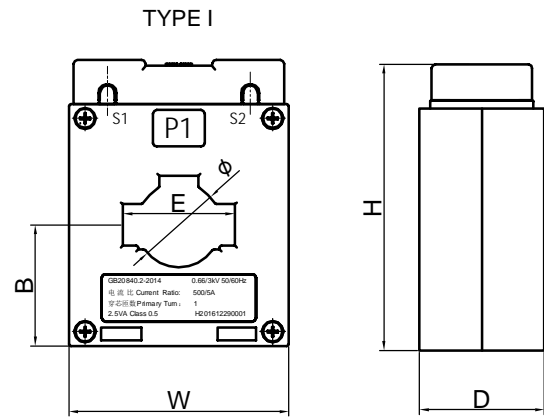
### 4 Installation instructions

#### 4.1 installation steps

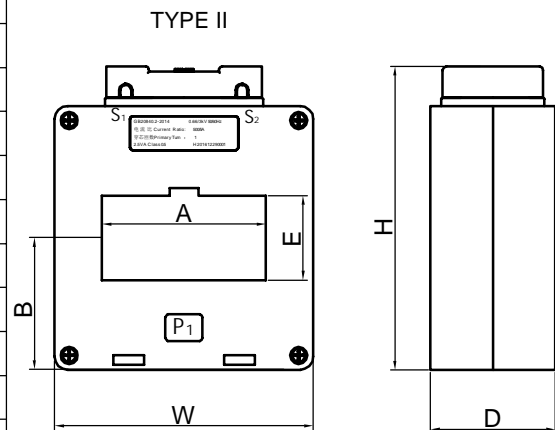
The primary side connect measured circuit in series .The secondary side connect electric measuring instrument in series .Ensure polarity end one-to-one correspondence. (P1(in) corresponding to S1; P2(out) corresponding S2).

#### 4.2 Appearance dimension(Unmarked tolerance reference GB/T 1804-2000 IT18)

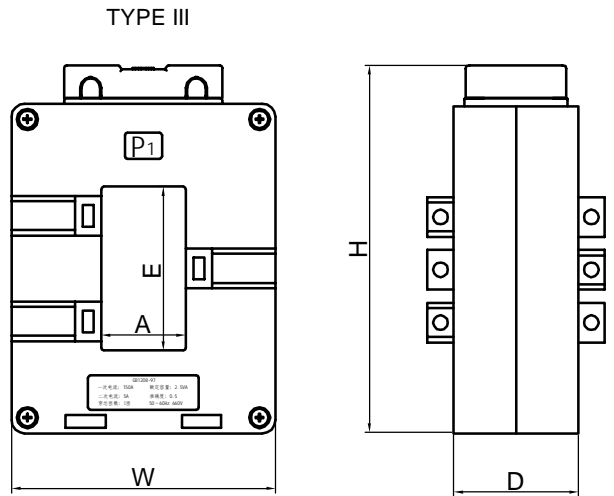
dimension TYPE	Appearance dimension(mm)				Hole size(mm)		Mounting $\Phi$
	W	H	D	B	E	$\Phi$	
30I	60	79	34	33.5	30.5	23	A、B、D
30I-I	60	79	45	33.5	31	22	A、B、D
40I	75	97	44	41	42	30	A、B、C
60I	101.5	124.5	44.5	55	61	46	C
80I	118	137.5	45	62.5	81.5	52	B、C
100I	146	161.5	45	73	102	62	B、C



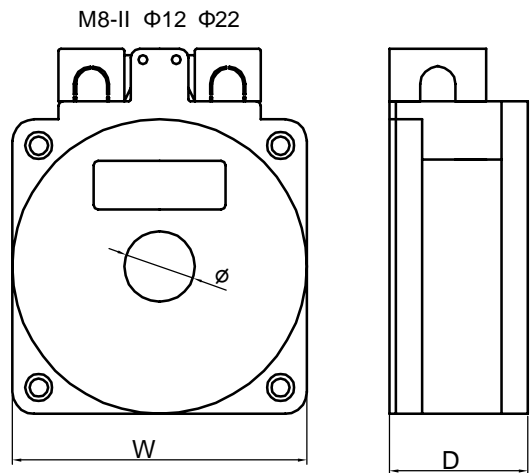
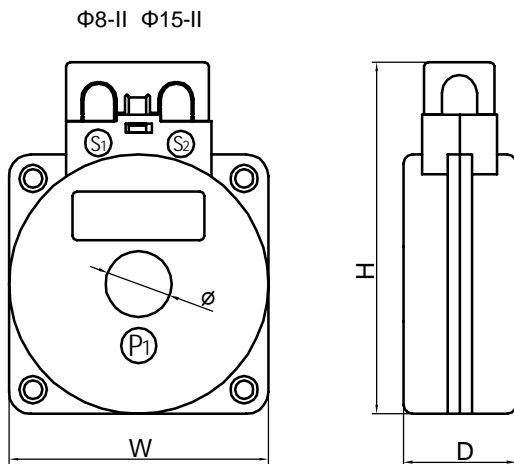
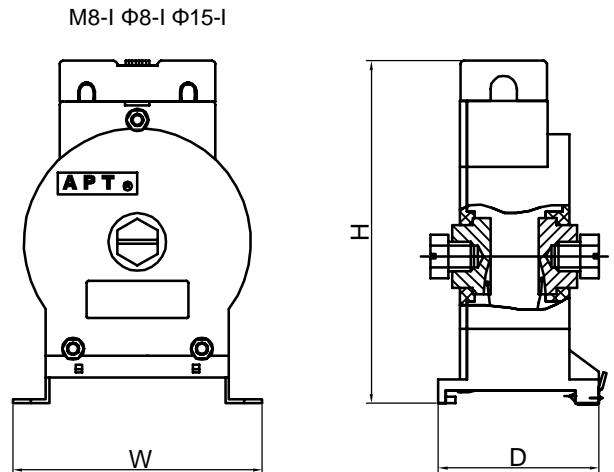
dimension TYPE	Appearance dimension(mm)				Hole size		Mounting
	W	H	D	B	A	E	
30II	60	101	44	43	34	26	B、D
40II	75	105	44	45	42	32	B、D
50II	86.5	112.5	45	49	52	32	B、D
60II	98	115	46	50	62	32	C
80II	117.8	120.5	45	53	82	32	C
100II	140	129	49	57	102	32	C
130II	175	133	46	59	136	36	E
180II	224	132.5	48	59	182	36.5	E
200II	244	132.5	50	59	204	35	E
60X50II	100	141	46	63	62.5	52	C
80X50II	120	141.5	47	63	82	52	C
100X50II	142	149.5	49	67	102	54	C
120X50II	167	152.5	49	69	122	53	C
220X50II	280	189	60	87	225	55	E
170X100II	255	219	60	102	170	106.5	E



TYPE	Appearance dimension(mm)			Hole size(mm)			Mounting
	W	H	D	A	E	Φ	
20III	72	75.5	36	11	21	21	A、J
30III	72	98.5	50	12	32	26	A、J
50III	75	114	56	16	52	/	J
60III	100	139	55	32	62	/	J
80III	100	164	55	32	82	/	J
100III	100	189	55	32	102	/	J
120III	125	214	55	52	122	/	J
130III	125	214	55	56	132	/	J



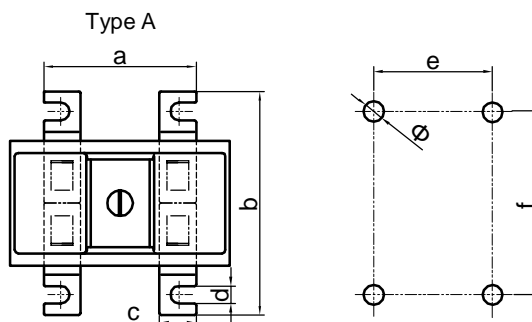
TYPE	Appearance dimension(mm)			Hole size(mm)	Mounting
	W	H	D	Φ	
M8-I	74	101	44	/	F、G、I
Φ8-I	74	101	44	8	F、G
Φ15-I	74	101	44	15	F、G
M8-II	67	86	24	/	H、I
Φ12	67	86	24	12	H
Φ22	67	86	24	22	H
Φ8-II	59	80	26	8	/
Φ15-II	59	80	26	15	/



4.3 Mounting dimension(Unmarked tolerance reference GB/T 1804-2000 IT18)

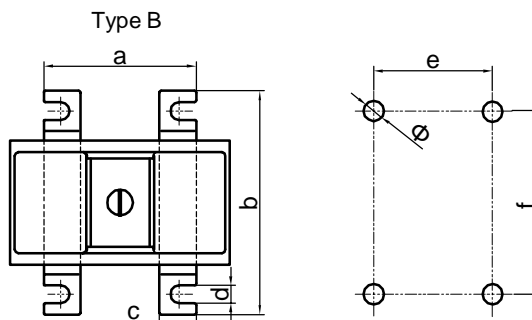
Type A

dimension TYPE	Mounting dimension(mm)						
	a	b	c	d	e	f	Φ
30I	41.4	61	10	5	32.4	50	5
30I-I	42	70	10	5	33	59	5
40I	54	70	10	5	45	59	5
20III	51	61	10	5	42	50	5
30III	51	75	10	5	42	64	5



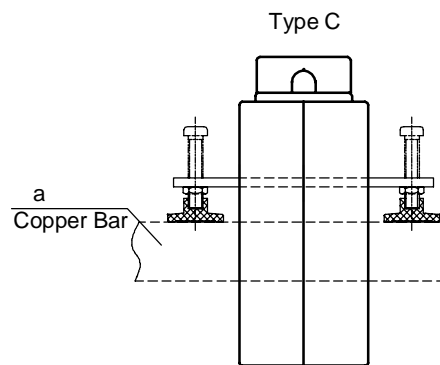
Type B

dimension TYPE	Mounting dimension(mm)						
	a	b	c	d	e	f	Φ
30I	41.6	60	10	5	32.6	48	5
30I-I	42	70	10	5	33	58	5
40I	54	70	10	5	45	58	5
60I	72	71	10	5	63	59	5
80I	70	71	10	5	61	59	5
100I	90	71	10	5	81	59	5
30II	38.6	70	10	5	29.6	58	5
40II	54	70	10	5	45	58	5
50II	40	71	10	5	31	59	5



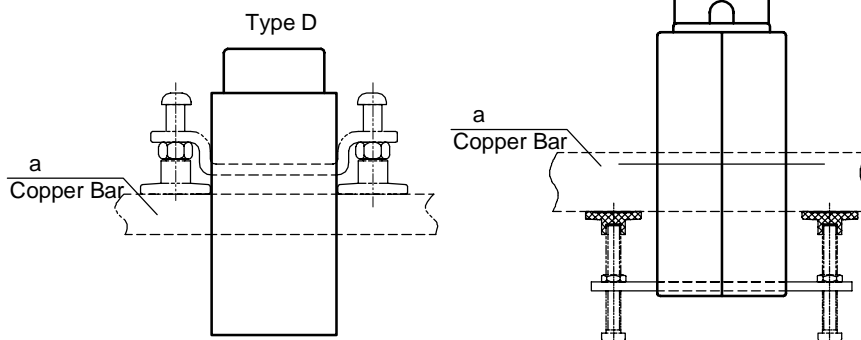
Type C ,Type E

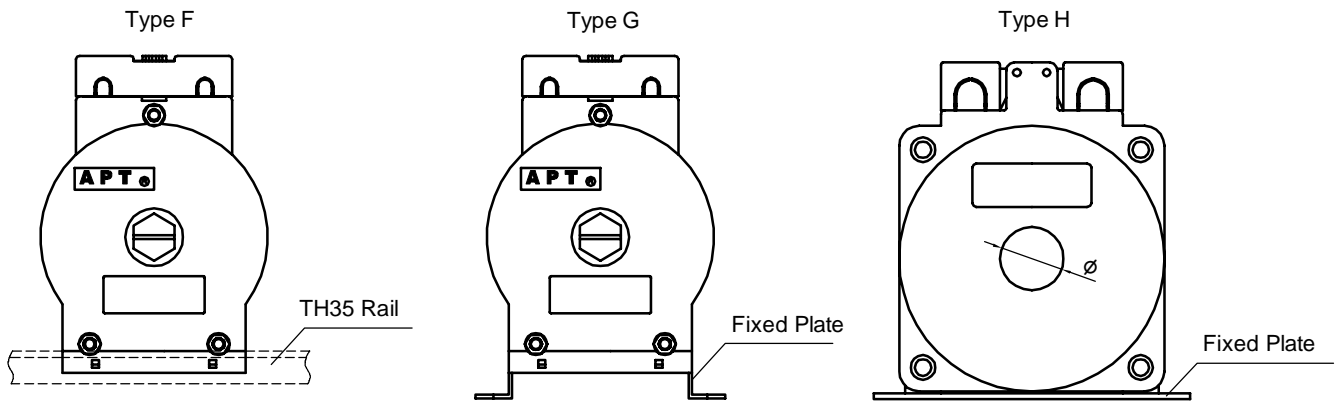
dimension TYPE	Copper Bar (mm)	a		dimension TYPE	Copper Bar (mm)	a	
		C	E			C	E
40I	40X10	1	/	180II	180X10	/	1-2
60I	60X10 60X6	1 2	/	200II	200X10	/	1-2
80I	80X10 60X6	1	/	60X50II	60X10	2-3	2-3
100I	100X10 80X10	1 2	/	80X50II	80X10	2-3	2-3
60II	60X10	1-2	1-2	100X50II	100X10	2-3	2-3
80II	80X10	1-2	1-2	120X50II	120X10	1-3	1-3
100II	100X10	2	2	220X50II	220X10	/	2-3
130II	130X10	/	1-2	170X100II	120X10 100X10	/	1-3 3-6



Type D

dimension TYPE	Copper Bar (mm)	a
		D
30I	30X10	1
30I-I	30X10	1
30II	30X10	1-2
40II	40X10	1-2
50II	50X10	1-2





Type J

dimension TYPE	Copper Bar (mm)	a		dimension TYPE	Copper Bar (mm)	a	
		J				J	
20III	20X10	1		80III	80X10	1-2	
30III	30X10	1		100III	100X10	1-2	
50III	50X10	1		120III	120X10	1-3	
60III	60X10	1-2		130III	130X10	1-3	

