

Type PS-981/PH-982

Indoor/outdoor current transformers

Application

The ABB Kuhlman PS-981/PH-982 outdoor "slip-over" ACCUSlip™ current transformers (CTs) are 600 volt, 10 kV BIL rated units designed to fit over a variety of specified bushing sizes on power transformers, circuit breakers, or cable terminators (potheads). These units can be applied over higher rated system voltages, provided sufficient insulation is available on the point of application. Primary current ratios are available from 50:5 to 5000:5 at 60 hertz with a rating factor of up to 4.0. These units are ideal for use in older electrical substation equipment with no internal space for bushing current transformers (BCTs). These dry-type, solid-cast CTs operate with high accuracy for metering or relay applications.

Mechanical description

The core and coil assembly is wound and encapsulated in a molded cast resin with various window sizes ranging from 6" to 46". The secondary terminals are 1/4-20 studs with associated hardware located inside a removable terminal box with two 1" NPT conduit hubs.

Accuracy performance

The PS-981 provides up to a 0.3 class accuracy for metering with burdens of B-0.1 to B-1.8 and up to C800 for some relay applications. The transformer is accurate through its rating factor and can be used continuously to this level. The PH-982 operates with 0.15 class accuracy for metering with burdens of B-0.1 to B-1.8.

Testing

These units are individually tested per the IEEE C57.13 standard, including dielectric tests, accuracy, and polarity.

Options

Both units can be offered in single, dual, or multiple core designs. Through careful calculation, steel selection, and testing, existing current transformer characteristics can be matched. Existing characteristic curves are required. Contact the factory for other requirements.



Mounting

These units can be mounted in any of the following ways:

- Mounting resin pads:
Resin pads can be adhered to the CT bottom to prevent water welling when it is placed directly onto the unit surface. This is the suggested method for CT application to flat surfaces with no obstructions. If a ground shield is used, it can be fastened to the CT top with silicone RTV adhesive.
- Universal mounting brackets:
Top and bottom clamps hold the CT while the threaded support bolts provide vertical adjustment. The threaded bolts can be tack welded to the electrical equipment cover. This is the most commonly used mounting method because it provides obstruction clearance and can be used on flat or radial surfaces and vertical or angled bushings. If a ground shield is used, it can be secured by the top brackets.
- Custom "Z" brackets:
"Z" brackets can be used on vertical or angled bushings. Top brackets or an RTV adhesive is required when installing a ground shield. A ground shield should be used on the unit as it is normally mounted in an area of high lightning incidence, the strike-over zone of the bushing, or close to the bottom of the porcelain. The ground shield lead should be routed on the same side of the CT where the mounting hardware is located. To ensure correct electrical and mechanical clearances, bushing and apparatus drawings, pictures, and/or measurements should be provided for sizing slip-over CTs at the time of quotation.

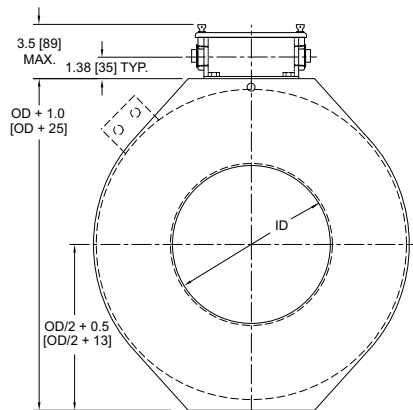
ACCUSlip™ (PH-982) current transformer selection guide

	Nominal current ratio										
ID x OD	100:5	150:5	200:5	300:5	400:5	500:5	600:5	800:5	1000:5	1200:5 & up	
RF	2.0	2.0	2.0	3.0-4.0	4.0	4.0	4.0	4.0	3.0	see note	
HT	8.75"	8.75"	8"	6"-8"	6"-8"	6"-8"	6"	6"	6"	3"-6"	
6 x 16	0.3B-0.1 class only	0.3B-0.2 class only	0.15B-0.2 - 5% 0.3B-0.9	0.15B-0.5 0.3B-0.9 - 10%	0.15B-0.5 - 5% 0.3B-0.9 - 10%	0.15B-0.5 - 5% 0.15B-0.9 0.3B-1.8	0.15B-1.8 - 5%		0.15B-0.9 - 5% 0.3B1.8 - 5%	0.15B-0.9 - 5% 0.15B-1.8 - 10% May be lower as ratio increases - will possibly hold accuracy down to 1%	
8 x 18											
10 x 20			0.15B-0.9 - 5% 0.15B-1.8 - 10%								
12 x 22											
14 x 24			0.15B-0.2 - 10% 0.3B-0.9	0.15B-0.2 0.3B-0.9	0.15B-0.5 - 5% 0.15B-0.9 0.3B-1.8	0.15B-0.9 - 5% 0.3B1.8 - 5%					
16 x 26											
18 x 28			0.15B-0.2 0.3B-0.9	0.15B-0.2 0.3B-0.9	0.15B-0.5 - 5% 0.15B-0.9 0.3B-1.8	0.15B-0.9 - 5% 0.15B-1.8 - 10%					
20 x 30											
22 x 32			0.15B-0.2 - 5% 0.3B-0.2/B-0.4 0.6B-0.5	0.15B-0.2 0.3B-0.9	0.15B-0.2 - 5% 0.15B-0.5 0.3B-0.9	0.15B-0.5 - 5% 0.3B-0.9 - 10% 0.3B-1.8	0.15B-0.9 - 10% 0.3B-1.8				
24 x 34											
26 x 36					0.15B-0.2 - 5% 0.3B-0.2/B-0.4 0.6B-0.5	0.15B-0.2 0.3B-0.9	0.15B-0.2 - 5% 0.3B-0.5 0.6B-0.9	0.15B-0.5 - 5% 0.3B-0.9 - 10% 0.3B-1.8	0.15B-0.9 - 10% 0.3B-1.8		
28 x 38											
30 x 40					0.15B-0.2 - 5% 0.3B-0.5 0.6B-0.9	0.15B-0.2 0.3B-0.9	0.15B-0.2 - 5% 0.3B-0.5 0.6B-0.9	0.15B-0.5 - 5% 0.15B-0.9 0.3B-1.8	0.15B-0.5 - 5% 0.15B-0.9 0.3B-1.8		
32 x 42											
34 x 44											
36 x 46											

Notes:

Rating factor: unless otherwise noted, 1000:5 through 2000:5 - RF 3.0; 2500:5 through 3000:5 - RF 2.0; 4000:5 and above - RF 1.5. This application guide is intended to assist the engineer in selecting the metering range desired by CT size and current ratio. The standard accuracy class as defined by IEEE C57.13 states that the accuracy at 10% rated current can be twice the accuracy class by which it is rated at nominal current, and must be in that same class from 100% rated current through the CT rating factor. This table is based on test results of various designs produced and is subject to change. It is to be used as a guide only; for actual performance, contact the factory. This table provides the lowest measurable range obtainable, based on actual test data, the CT will deliver to the rated burden. If a percentage is missing, it is assumed to respond as defined. For stated percentages, the accuracy will be maintained from that percentage of rated current through its rating factor. For other sizes and special burden requirements, consult the factory. Non-standard burdens or adjustment to fixed burdens are possible. No units will be available with build-ups and/or heights less than 2.25".

Unit dimensions



Notes (dimensions in inches [mm]):

- Insulation level: 0.6 kV class, 10 kV BIL, 130°C.
- Construction: core/coil assembly is encapsulated in a resin suitable for indoor/outdoor use.
- H1 polarity mark is permanently engraved white dot.
- X1 polarity mark is permanently engraved white dot.
- Secondary terminals are 1/4-20 studs with flat, cupped, and lock washers secured with hex nut. Tighten to compress lock washer only - not to exceed 50lbF-in. Each terminal has permanently engraved marking adjacent to it.
- Secondary terminal box is weathertight with two 1"-11.5 NPT hubs and blanking plugs. A removable cover is attached with four sealing-type thumb screws for easy access.
- Finished height can range from 2.25 [57] to 8.75 [222] as required. Tolerance range: ± 0.25 [± 6.4] along entire OD.
- Winding arrangements available: single (SR), dual (DR) or multi ratio (MR).

For more information please contact:

ABB Inc.
Instrument Transformers
 3022 NC 43 North
 Pinetops, NC 27864
 USA
 Phone: +1 252 827 3212
 Fax: +1 252 827 4286

www.abb.com/mediumvoltage

Note:

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document. We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction—in whole or in parts—is forbidden without ABB's prior written consent.

Copyright 2010 ABB.
 All rights reserved.

Power and productivity
 for a better world™

