AOB18 series digital display ammeter manual

Chapter 1.General Introduction

Usage

AOB184I, AOB185I series digital display ammeters are a sort of economic digital instruments, which are mainly used in the real –time measurement and indication on AC or DC of electric wiring. It can assort with all kinds of electrical quantity and non–electrical quantity transmitter with linearity analog signal output and indicate the electrical quantity or non–electrical quantity value in the primary circuit. With features of high precision, good stability, direct reading, strong anti–interference ability, it can be used extensively in all voltage classes of substation of city and countryside, power station, transformation and distribution room of public institution/enterprise units, and many fields of intelligent building/subdistrict, metallurgy, petrochemical, airport, railway, port, hospital, school, municipal, etc. It is an idea upgraded product of original dial instrument.

Technical feature

The greatest feature is as following: It is added several specific pins for switching measuring range to the common digital display ammeter wiring. Though adjusting the quantity and position of shorting jumper on the pin, the full range indicated value of the instrument changes with a special rule when inputting the rating signal. So it achieves the goal that the odd instrument can adapt the instrument transformer (or electrical shunt) many different specifications and raises the cost performance and flexibility of instrument usage.

Chapter 2. Type and Designation

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- Instrument shape selection: 1: 16 rectanglar shape , 2: 42 square shape, 3: 6 square shape, 4: 46 rectanglar shape,5: 96x48 rectanglar shape,7: 72x72 square shape, 8:48x48 square shape,9: 96x96 square shape
- Instrument type selection: I : ammeter
- Signal input mode selection: 4: single–phase AC signal input 5: DC signal input
- Product code of economic mounted digital ammeter series

Chapter 3. Variety and Specification

This series instrument is divided into the direct current ammeter and alternating current ammeter according to the different input signal type, direct input and accessory device input according to the different input ways of measurement wiring. When direct input, the instrument specification is AC0~5A or DC0~5A and measurable any current value within the range of 0~5A. When accessory device input, the instrument specification is respectively AC0~1999A, 0~1500A (accessory transformer) or DC0~1999A, DC0~1500A (accessory electrical shunt). Through setting the interior measuring range switching device of the instrument, it can expand more specifications on these four kinds of specification foundation. The measuring range switching device is on the display function panel of the instrument. It is made up of altogether 18 pins and divided into 9 groups. Each group is assigned the corresponding serial number and then arranged according to a certain order (The arrangement ways of instrument with different shape are possibly different, but their serial number is corresponding.) When shorting on every group of pins according to a specific rule, it can realize the switching on instrument display measuring range. Below is the instrument specification tabulation which the jumper position corresponds (The instrument is altogether divided to five kinds of specifications respectively, user may choose any one among them and others not included need custom–made according to special specification)

Specification1	Quantity and position of jumper	Resolution	Signal input mode
DC 5A	1 2 3 4 5 6 7 8 9	0.01A	Direct input

Specification 2	Quantity and position of jumper	Resolution	Signal input mode
AC2000/5A	1 2 3 4 5 6 7 8 9	1A	Input through current transformer
AC1600/5A	1 2 3 4 5 6 7 8 9	1A	Input through current transformer
AC1500/5A	1 2 3 4 5 6 7 8 9	1A	Input through current transformer
AC1200/5A	1 2 3 4 5 6 7 8 9	1A	Input through current transformer
AC1000/5A	1 2 3 4 5 6 7 8 9	1A	Input through current transformer
AC800/5A	1 2 3 4 5 6 7 8 9	1A	Input through current transformer
AC500/5A	1 2 3 4 5 6 7 8 9	1A	Input through current transformer
AC400/5A	1 2 3 4 5 6 7 8 9	1A	Input through current transformer
AC200/5A	1 2 3 4 5 6 7 8 9	0.1A	Input through current transformer
AC160/5A	1 2 3 4 5 6 7 8 9	0.1A	Input through current transformer
AC150/5A	1 2 3 4 5 6 7 8 9	0.1A	Input through current transformer
AC120/5A	1 2 3 4 5 6 7 8 9	0.1A	Input through current transformer
AC100/5A	1 2 3 4 5 6 7 8 9	0.1A	Input through current transformer
AC80/5A	1 2 3 4 5 6 7 8 9	0.1A	Input through current transformer
AC50/5A	1 2 3 4 5 6 7 8 9	0.1A	Input through current transformer
AC40/5A	1 2 3 4 5 6 7 8 9	0.1A	Input through current transformer
AC20/5A	1 2 3 4 5 6 7 8 9	0.01A	Input through current transformer
AC15/5A	1 2 3 4 5 6 7 8 9	0.01A	Input through current transformer
AC10/5A	1 2 3 4 5 6 7 8 9	0.01A	Input through current transformer
AC5A	1 2 3 4 5 6 7 8 9	0.01A	Input directly

Specification 3	Quantity and position of jumper	Resolution	Signal input mode
DC2000A/75mV	1 2 3 4 5 6 7 8 9	1A	Input through electrical shunt
DC1600A/75mV	1 2 3 4 5 6 7 8 9	1A	Input through electrical shunt
DC1500A/75mV	1 2 3 4 5 6 7 8 9	1A	Input through electrical shunt
DC1200A/75mV	1 2 3 4 5 6 7 8 9	1A	Input through electrical shunt
DC1000A/75mV	1 2 3 4 5 6 7 8 9	1A	Input through electrical shunt
DC800A/75mV	1 2 3 4 5 6 7 8 9	1A	Input through electrical shunt
DC500A/75mV	1 2 3 4 5 6 7 8 9	1A	Input through electrical shunt
DC400A/75mV	1 2 3 4 5 6 7 8 9	1A	Input through electrical shunt
DC200A/75mV	1 2 3 4 5 6 7 8 9	0.1A	Input through electrical shunt
DC160A/75mV	1 2 3 4 5 6 7 8 9	0.1A	Input through electrical shunt
DC150A/75mV	1 2 3 4 5 6 7 8 9	0.1A	Input through electrical shunt
DC120A/75mV	1 2 3 4 5 6 7 8 9	0.1A	Input through electrical shunt
DC100A/75mV	1 2 3 4 5 6 7 8 9	0.1A	Input through electrical shunt
DC80A/75mV	1 2 3 4 5 6 7 8 9	0.1A	Input through electrical shunt
DC50A/75mV	1 2 3 4 5 6 7 8 9	0.1A	Input through electrical shunt
DC40A/75mV	1 2 3 4 5 6 7 8 9	0.1A	Input through electrical shunt
DC20A/75mV	1 2 3 4 5 6 7 8 9	0.01A	Input through electrical shunt
DC15A/75mV	1 2 3 4 5 6 7 8 9	0.01A	Input through electrical shunt
DC10A/75mV	1 2 3 4 5 6 7 8 9	0.01A	Input through electrical shunt
DC5A/75mV	1 2 3 4 5 6 7 8 9	0.01A	Input through electrical shunt

Chapter 4. Technical Parameters

4.1 Accuracy rating: .5%FS ± 2digit
4.2 Display Mode: display 3 1/2 bits LED nixietube
4.3 Sampling rate: about 3 times/sec.
4.4 Overloading: 1.2 times lasting
4.5 Inputcircuit power consumption: < 0.5VA
4.6 Auxiliary power supply: AC 110V ± 10%, AC 220V ± 10%, AC 380V ± 10%
4.7 Auxiliary supply consumption: < 3VA
4.8 Overflow indication: The top digit displays 1 or –1 and other digits hiding
4.9 DC Ammeter polar indication: Negative signal displays –automatically and Positive signal doesn't display
4.10 Operational environment: places free of gas corruption with temperature of –10~50℃, and relative humidity ≤ 85%RH

Specification 4	Quantity and position of jumper	Resolution	Signal input mode
AC1500/5A		1A	Input through current transformer
AC1200/5A		1A	Input through current transformer
AC900/5A		1A	Input through current transformer
AC750/5A		1A	Input through current transformer
AC600/5A		1A	Input through current transformer
AC500/5A		1A	Input through current transformer
AC300/5A		1A	Input through current transformer
AC150/5A		0.1A	Input through current transformer
AC120/5A		0.1A	Input through current transformer
AC90/5A		0.1A	Input through current transformer
AC75/5A		0.1A	Input through current transformer
AC60/5A		0.1A	Input through current transformer
AC50/5A		0.1A	Input through current transformer
AC30/5A		0.1A	Input through current transformer
AC15/5A		0.01A	Input through current transformer
AC5A		0.01A	Input directly

Specification 5	Quantity and position of jumper	Resolution	Signal input mode
DC1500A/75mV		1A	Input through electrical shunt
DC1200A/75mV		1A	Input through electrical shunt
DC900A/75mV		1A	Input through electrical shunt
DC750A/75mV		1A	Input through electrical shunt
DC600A/75mV		1A	Input through electrical shunt
DC500A/75mV		1A	Input through electrical shunt
DC300A/75mV		1A	Input through electrical shunt
DC150A/75mV		0.1A	Input through electrical shunt
DC120A/75mV		0.1A	Input through electrical shunt
DC90A/75mV		0.1A	Input through electrical shunt
DC75A/75mV		0.1A	Input through electrical shunt
DC60A/75mV		0.1A	Input through electrical shunt
DC50A/75mV		0.1A	Input through electrical shunt
DC30A/75mV		0.1A	Input through electrical shunt
DC15A/75mV		0.01A	Input through electrical shunt
DC5A/75mV		0.01A	Input through electrical shunt

Chapter 5. Setting and Wiring

5.1Hole Cutout Dimension

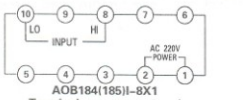
Unit: mm

Instrument shape	Panel dimension		Case dimension			Hole cutout dimension	
	W	H	W	H	D	W	H
16 rectanglar shape	160	80	150	75	100	152	76
42 square shape	120	120	110	110	80	112	112
6 square shape	80	80	75	75	80	76	76
46 rectanglar shape	120	60	115	55	80	116	56
96x48 rectanglar shape	96	48	90	44	100	92	45
72x72 square shape	72	72	67	67	80	68	68
48x48 square shape	48	48	44	44	100	45	45
96x96 square shape	96	96	91	91	80	92	92

5.2 Method of installation

Choose the corresponding hole cutout dimension according to the instrument dimension from the table above, open a hole in the setting screen, embed instruments into the hole, put the two clamping pieces into the clamping rectanglar and push and tighten it by hand.

5.3 Description of Wiring and terminal



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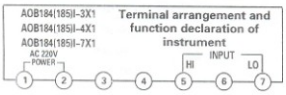
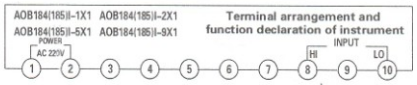
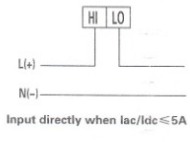
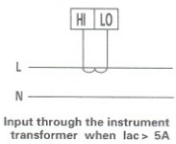
Terminal arrangement and function declaration of instrument



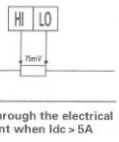




Input directly when Iac/Idc≤5A



Input through the instrument transformer when Iac > 5A



Input through the electrical shunt when Idc > 5A

Chapter 6 Usage and Attention

6.1 Instrument measuring range has been set as the information provided by users correctly before leaving the factory. When it is discovered that the instrument specifications doesn't adapt to the user's specification of instrument transformer or electrical shunt or needs to change, Instruments range should be reset. Take down the instrument surface frame first, remove the panel components and it can be found the measuring range switching device on the display function panel of the instrument, which is described in the third statement of this manual. Then set the instrument as the setting method according to the specification list.
6.2 Please confirm if the auxiliary power supply, input signal and wiring is correct before applying the power.
6.3 The instrument must be preheated for 15 minutes to guarantee the precision of the instrument.
6.4 The instrument should not be rapped, knocked and vibrated excessively and its using environment should meet the technical requirements.

Chapter 7 Packing and Storage

The instrument and accessories with packing should keep storage conditions cool and dry and free of wet and gas corruption with temperature not more than 70℃ and not less than –40℃ , and relative humidity≤85%