

Series BM100 Signal Isolator

Installation and Operation Instruction V1.2

DECLARATION

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of Acrel. All rights reserved.

This company reserve power of revision of product specification described in this manual, without notice. Before ordering, please consult local agent for the latest specification of product.

CONTENTS

1 General.....	1
2 Executive standard.....	1
3 Type of products.....	1
4 Technical parameter.....	1
5List of model selection.....	2
6 Install and wiring.....	5
6.1 Outline dimension.....	5
6.2 Wiring.....	6
7 Precautions.....	11
8 Application examples.....	12

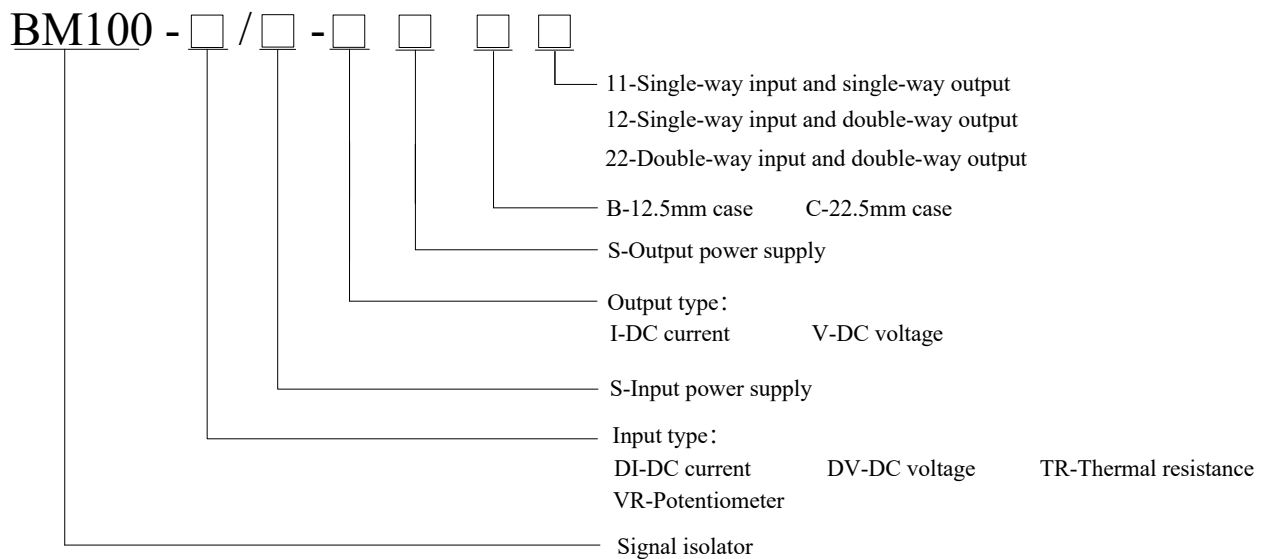
1 General

BM100 series signal isolators can measure the electrical parameters such as current and voltage or non-electrical parameters such as temperature and resistance at high speed and accurately, and can be converted into standard analog signal output after the isolation device. It can be directly connected with pointer meter and digital display meter, and can also be connected with automatic control instrument (such as PLC), various A/D converters and computer systems. It is widely used in electric power, railway, petrochemical, metallurgy, chemical industry, food, warehousing and other industries. It is a cost-effective product.

2 Executive standard

GB/T13850-1998 “Electric measuring transmitter for converting AC electric quantity into analog quantity or digital quantity”

3 Type of products



4 Technical parameter

Channel type	Single-way input and single-way output, single-way input and double-way output, double-way input and double-way output
Input type	Current/Voltage/Thermal resistance Pt100/Resistance
Input signal	DC 0~20mA /4~20mA DC 0~5V /1~5V /0~10V PT100 /0~10K
Output signal	0~20mA /4~20mA (Safe side input); Load resistance: ≤550Ω 0~5V /1~5V (Safe side input); Load resistance: ≥330K 0~10V /2~10V(Safe side input); Load resistance: ≥500K
Transmission accuracy	0.2%
Temperature modulus	50ppm/°C (Voltage output: 100ppm/°C)
Response time	5ms to reach 90% of final value (RTD Pt100/resistance input: 1s to reach 90% of final value)
Power supply	20~35V DC or 85~265V AC/DC

Work temperature	-20°C~+60°C
Fix mode	Rail installation
Dielectric strength	≥2000V AC/1 min (Among input//output//power supply)

5List of model selection

BM100 series signal isolator				
Product model	Input signal	Output signal	Power supply	Way
BM100-DI/I-B11	DC 4-20mA	DC 4-20mA	DC 20~35V	One in and one out
BM100-DI/I-C11			AC/DC 85~265V	
BM100-DIS/I-B11			Passive	
BM100-DI/IS-B11			DC 20~35V Loop power supply	
BM100-DI/I-C12			DC 20~35V	One in and two out
BM100-DI/I-C12			AC/DC 85~265V	
BM100-DI/I-C22			DC 20~35V	Two in and two out
BM100-DI/I-C22			AC/DC 85~265V	
BM100-DIS/I-C22			Passive	
BM100-DI/IS-C22			DC 20~35V Loop power supply	
BM100-DI/I-B11	DC 0-20mA	DC 4-20mA	DC 20~35V	One in and one out
BM100-DI/I-C11			AC/DC 85~265V	
BM100-DI/I-C12			DC 20~35V	One in and two out
BM100-DI/I-C22			DC 20~35V	
BM100-DI/V-B11	DC 0-20mA	DC 0-5V	DC 20~35V	One in and one out
BM100-DI/V-C11			AC/DC 85~265V	
BM100-DI/V-C12			DC 20~35V	One in and two out
BM100-DI/V-C12			AC/DC 85~265V	
BM100-DI/V-C22			DC 20~35V	Two in and two out
BM100-DI/V-C22			AC/DC 85~265V	
BM100-DI/V-B11	DC 0-20mA	DC 1-5V	DC 20~35V	One in and one out
BM100-DI/V-C11			AC/DC 85~265V	
BM100-DI/V-C12			DC 20~35V	One in and two out
BM100-DI/V-C22			DC 20~35V	
BM100-DI/V-B11	DC 0-20mA	DC 0-10V	DC 20~35V	One in and one out
BM100-DI/V-C11			AC/DC 85~265V	
BM100-DI/V-C12			DC 20~35V	One in and two out
BM100-DI/V-C12			AC/DC 85~265V	
BM100-DI/V-C22			DC 20~35V	Two in and two out
BM100-DI/V-C22			AC/DC 85~265V	

BM100-DV/I-B11	DC 0-5V、0-10V	DC 0-20mA	DC 20~35V	One in and one out
BM100-DV/I-C11			AC/DC 85~265V	
BM100-DV/I-C12			DC 20~35V	One in and two out
BM100-DV/I-C22			DC 20~35V	Two in and two out
BM100-DV/I-B11	DC 0-5V、0-10V	DC 4-20mA	DC 20~35V	One in and one out
BM100-DV/I-C11			AC/DC 85~265V	
BM100-DV/I-C12			DC 20~35V	One in and two out
BM100-DV/I-C22			DC 20~35V	Two in and two out
BM100-DV/V-B11	DC 0-5V、0-10V	DC 0-5V	DC 20~35V	One in and one out
BM100-DV/V-C11			AC/DC 85~265V	
BM100-DV/V-C12			DC 20~35V	One in and two out
BM100-DV/V-C22			DC 20~35V	Two in and two out
BM100-DV/V-B11	DC 0-5V、0-10V	DC 1-5V	DC 20~35V	One in and one out
BM100-DV/V-C11			AC/DC 85~265V	
BM100-DV/V-C12			DC 20~35V	One in and two out
BM100-DV/V-C22			DC 20~35V	Two in and two out
BM100-DV/V-B11	DC 0-5V、0-10V	DC 0-10V	DC 20~35V	One in and one out
BM100-DV/V-C11			AC/DC 85~265V	
BM100-DV/V-C12			DC 20~35V	One in and two out
BM100-DV/V-C22			DC 20~35V	Two in and two out
BM100-TR/I-B11	Pt100:-200°C~850°C	DC 0-20mA	DC 20~35V	One in and one out
BM100-TR/I-C12				One in and two out
BM100-TR/I-C22				Two in and two out
BM100-TR/I-B11	Pt100:-200°C~850°C	DC 4-20mA	DC 20~35V	One in and one out
BM100-TR/I-C12				One in and two out
BM100-TR/I-C22				Two in and two out
BM100-TR/V-B11	Pt100:-200°C~850°C	DC 0-5V	DC 20~35V	One in and one out
BM100-TR/V-C12				One in and

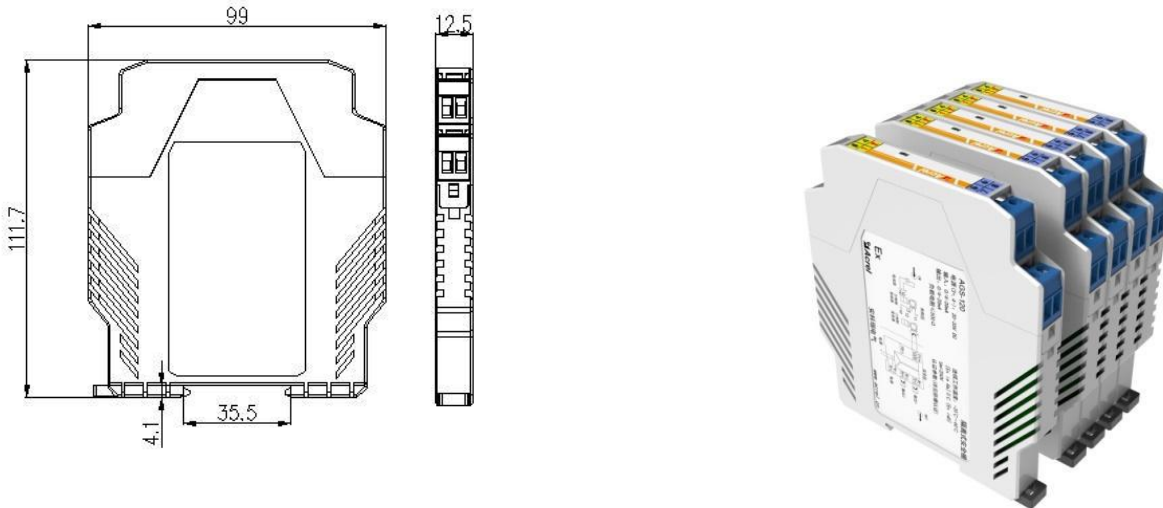
				two out
BM100-TR/V-C22				Two in and two out
BM100-TR/V-B11	Pt100:-200°C~850°C	DC 1-5V	DC 20~35V	One in and one out
BM100-TR/V-C12				One in and two out
BM100-TR/V-C22				Two in and two out
BM100-TR/V-B11	Pt100:-200°C~850°C	DC 0-10V	DC 20~35V	One in and one out
BM100-TR/V-C12				One in and two out
BM100-TR/V-C22				Two in and two out
BM100-VR/I-B11	0-5K、0-10K	DC 0-20mA	DC 20~35V	One in and one out
BM100-VR/I-C12				One in and two out
BM100-VR/I-C22				Two in and two out
BM100-VR/I-B11	0-5K、0-10K	DC 4-20mA	DC 20~35V	One in and one out
BM100-VR/I-C12				One in and two out
BM100-VR/I-C22				Two in and two out
BM100-VR/V-B11	0-5K、0-10K	DC 0-5V	DC 20~35V	One in and one out
BM100-VR/V-C12				One in and two out
BM100-VR/V-C22				Two in and two out
BM100-VR/V-B11	0-5K、0-10K	DC 1-5V	DC 20~35V	One in and one out
BM100-VR/V-C12				One in and two out
BM100-VR/V-C22				Two in and two out
BM100-VR/V-B11	0-5K、0-10K	DC 0-10V	DC 20~35V	One in and one out
BM100-VR/V-C12				One in and two out
BM100-VR/V-C22				Two in and two out

6 Install and wiring

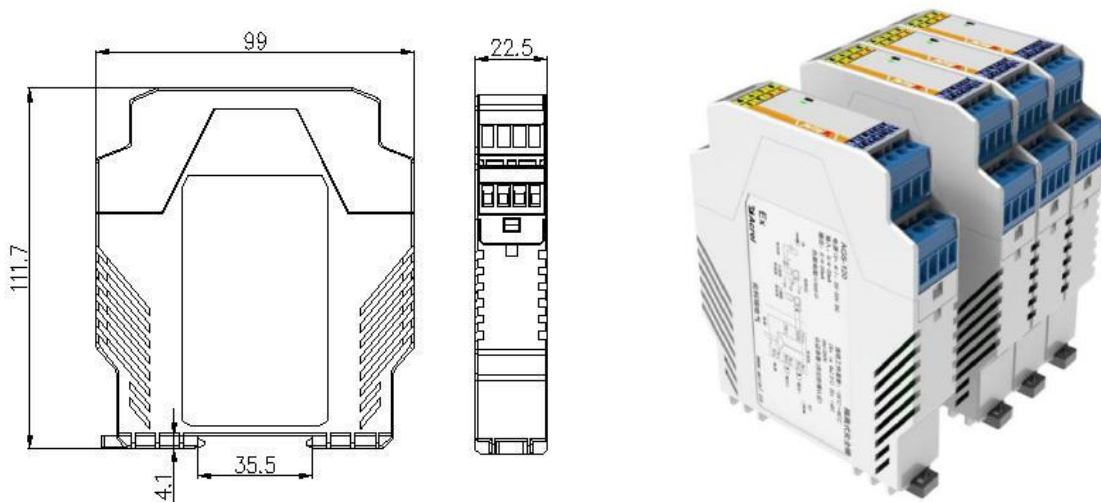
6.1 Outline dimension

Product category	Type of products	Outline dimension
BM100	BM100-□□/□-B11	99mm*114.5mm*12.5mm
	BM100-DI/IS-B□□	
	BM100-DIS/I-B□□	
	BM100-□□/□-C□2	99mm*114.5mm*22.5mm

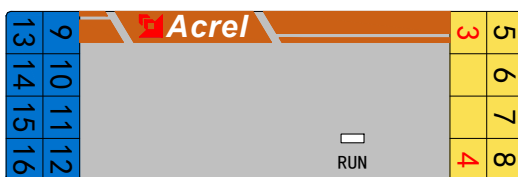
6.1.1 BM100-□□/□-B□□ outline dimension:



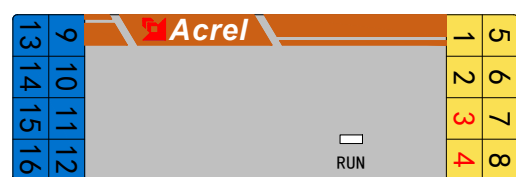
6.1.2 BM100-□□/□-C□2 outline dimension:



6.1.3 Schematic diagram of front panel



Front panel 1: case C, 220V Power supply



Front panel 2: case C, 24V Power supply



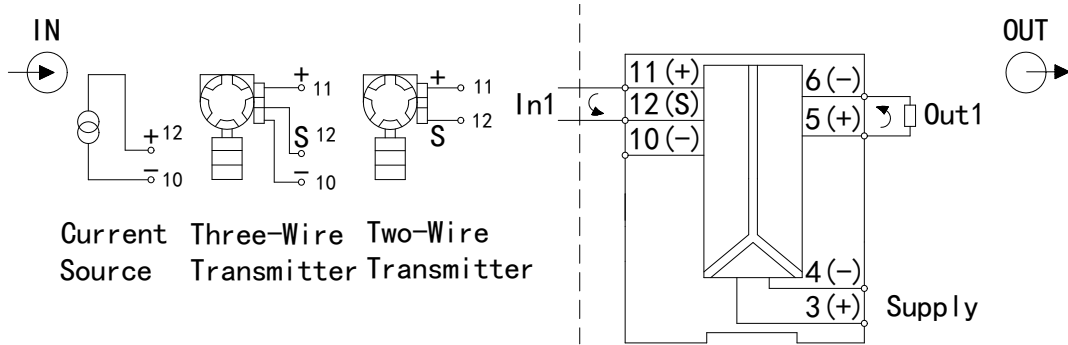
Front panel 3: case B, 24V Power supply



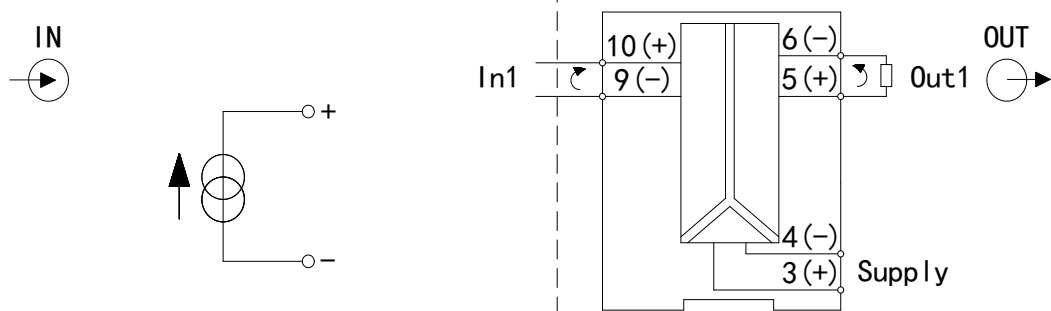
Front panel 4: case B, loop power supply and passive

6.2 Wiring

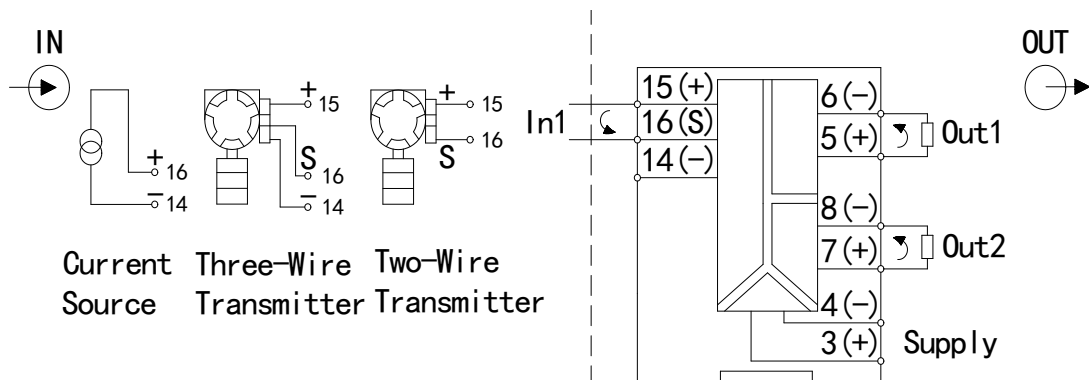
6.2.1 BM100-DI/I-B11 (Power supply: 24V, with power distribution):



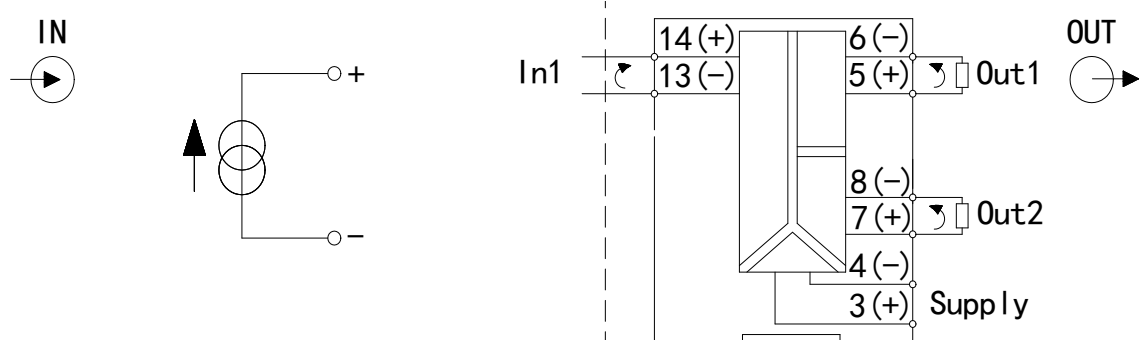
6.2.2 BM100-DI/I-B11 (Power supply: 24V, only current source input):



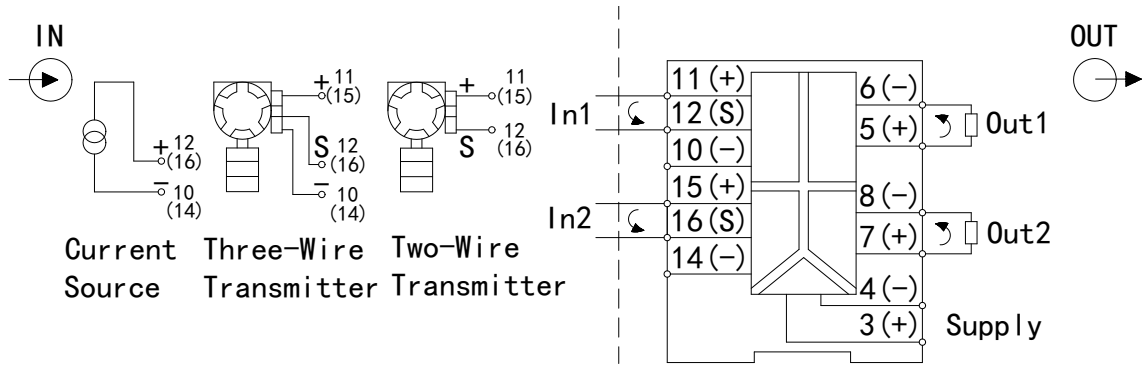
6.2.3 BM100-DI/□-C12 (Power supply: 24V, with power distribution):



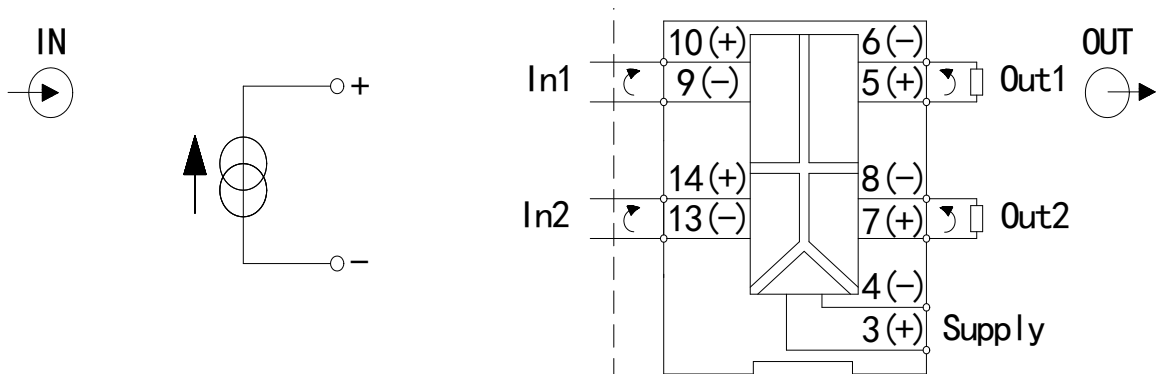
6.2.4 BM100-DI/□-C12 (Power supply: 24V, only current source input):



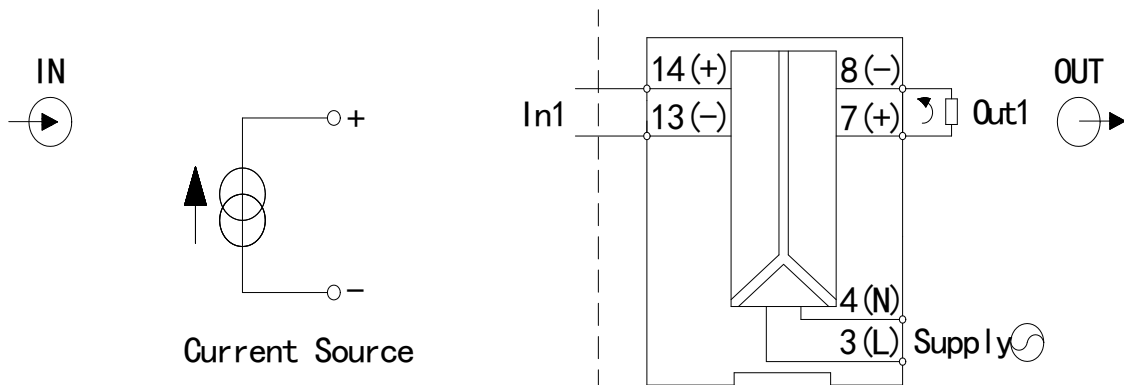
6.2.5 BM100-DI/□-C22 (Power supply: 24V, with power distribution):



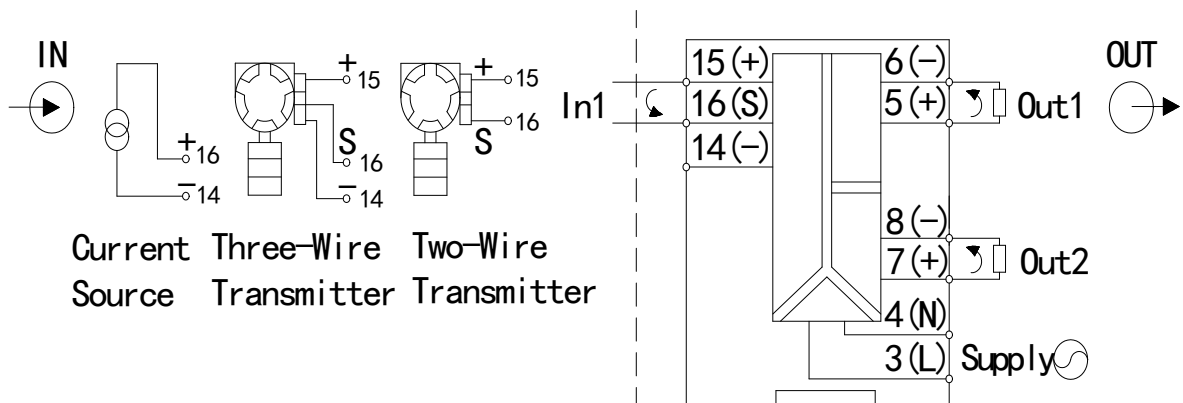
6.2.6 BM100-DI/□-C22 (Power supply: 24V, only current source input):



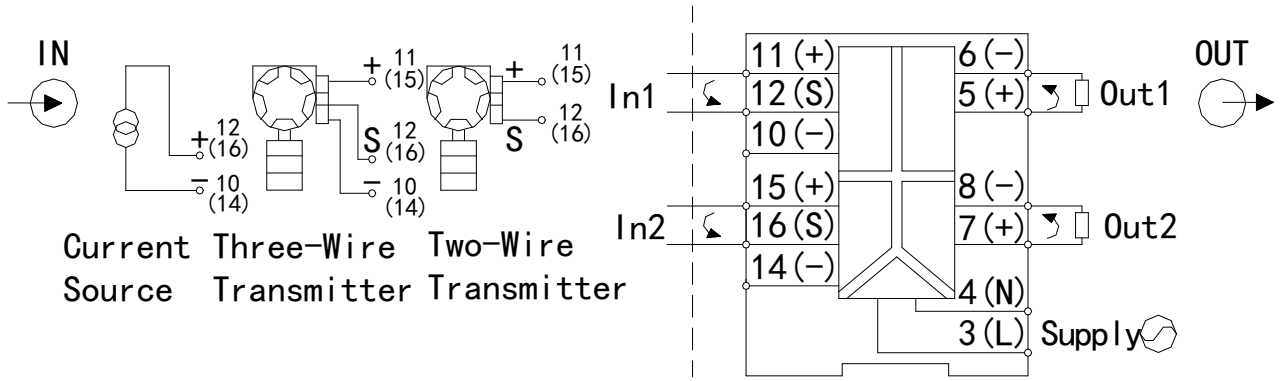
6.2.7 BM100-DI/□-C11 (Power supply : 220V):



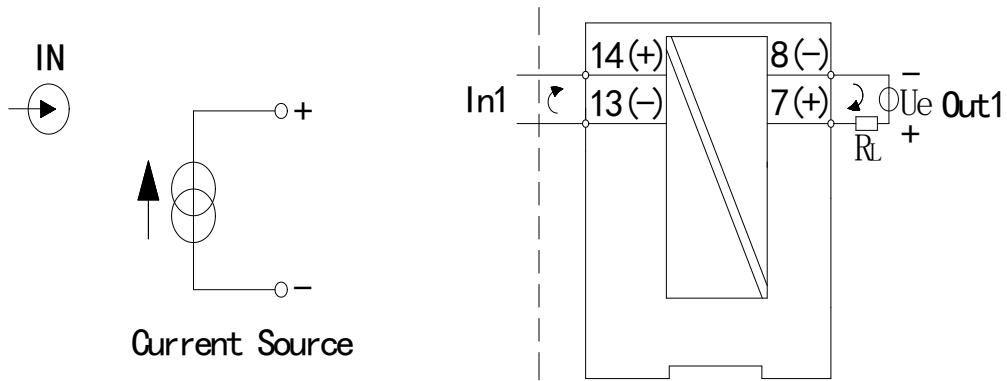
6.2.8 BM100-DI/□-C12 (Power supply : 220V):



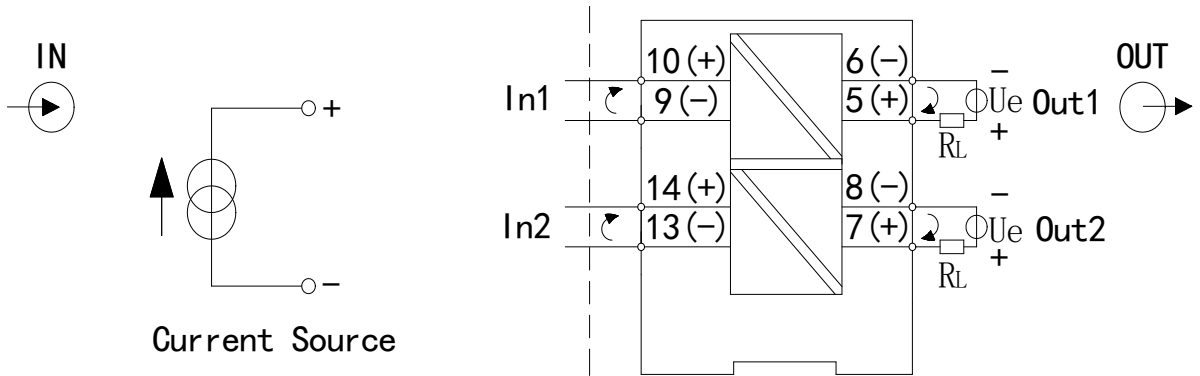
6.2.9 BM100-DI/□-C22(Power supply : 220V):



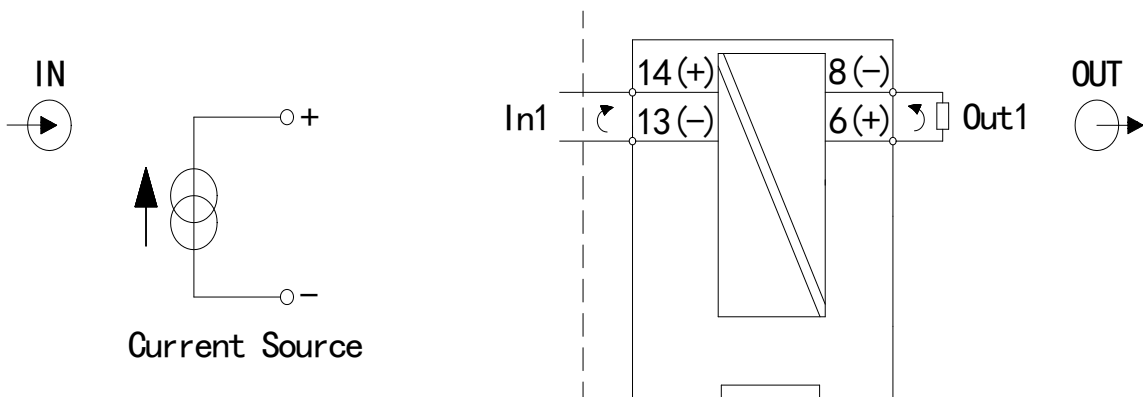
6.2.10 BM100-DI/IS-B11:



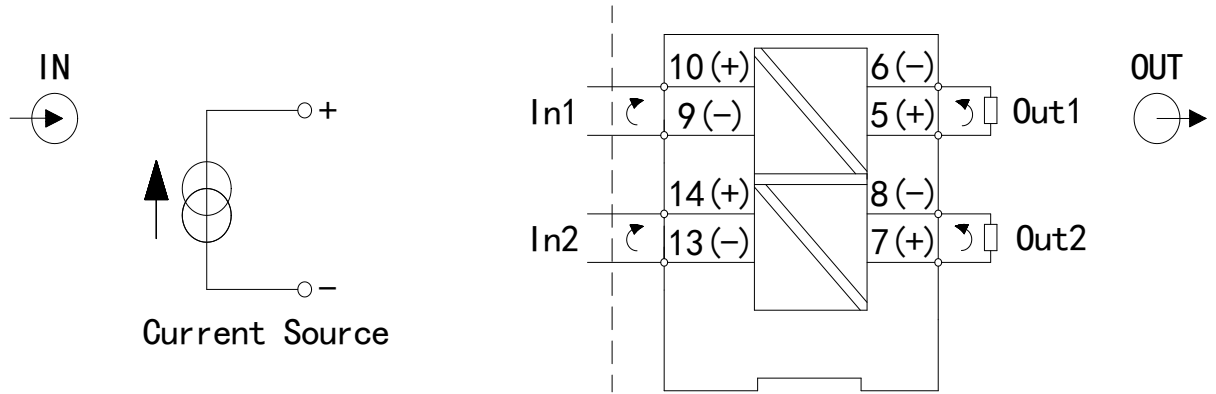
6.2.11 BM100-DI/IS-B22:



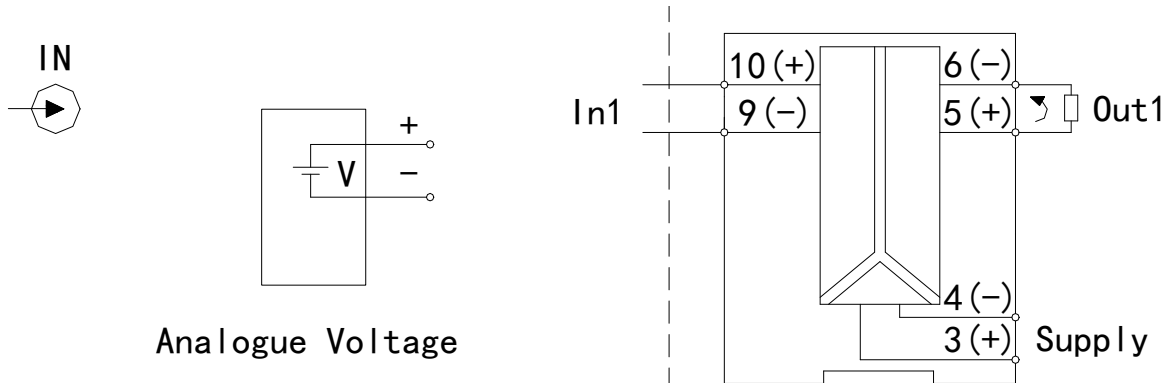
6.2.12 BM100-DIS/I-B11:



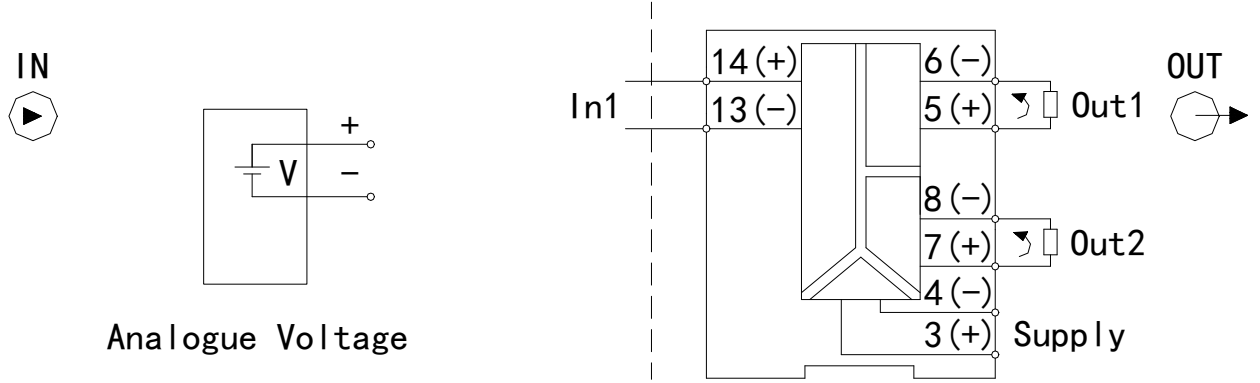
6.2.13 BM100-DIS/I-B22:



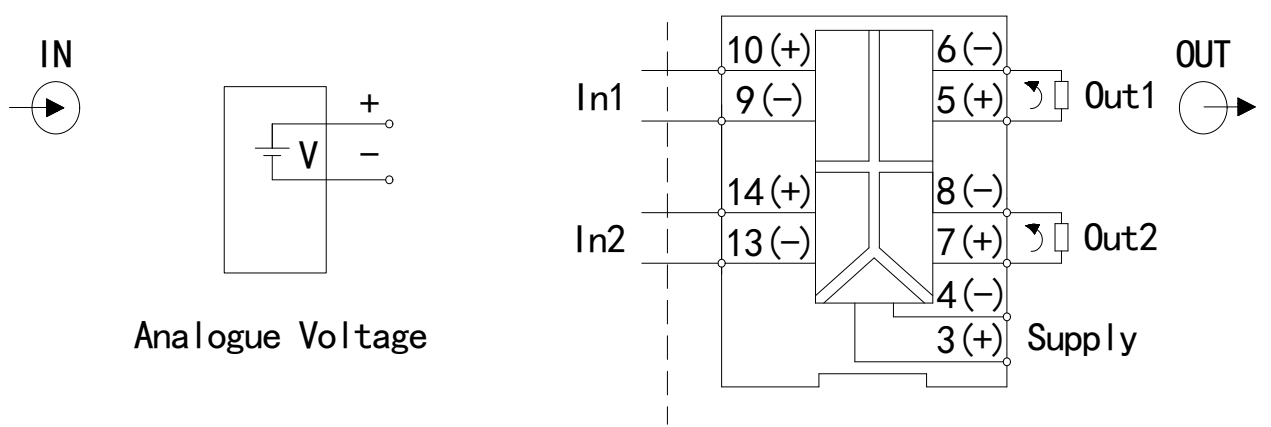
6.2.14 BM100-DV/□-B11:



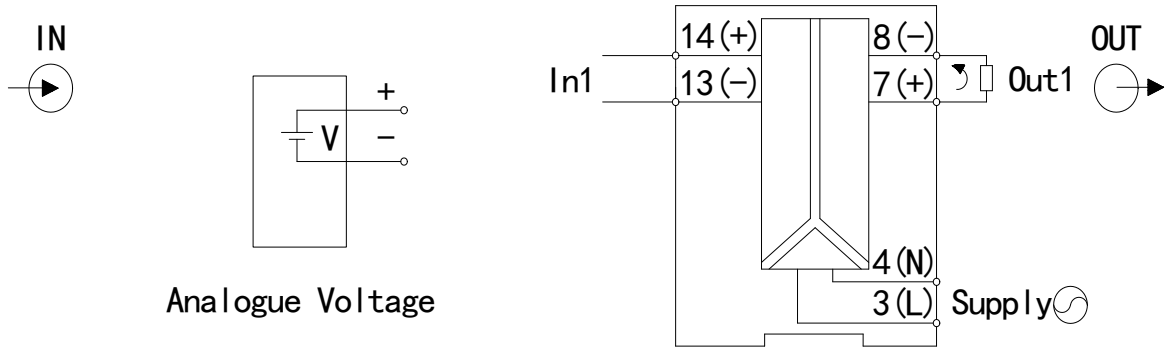
6.2.15 BM100-DV/□-C12:



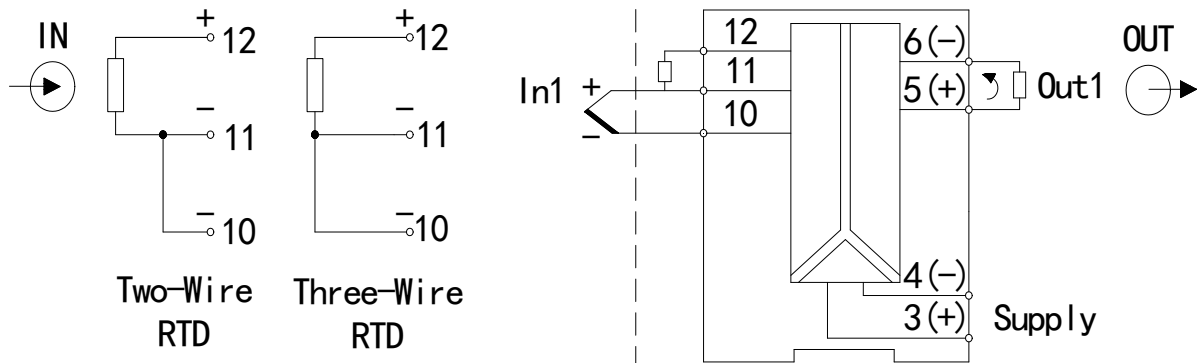
6.2.16 BM100-DV/□-C22:



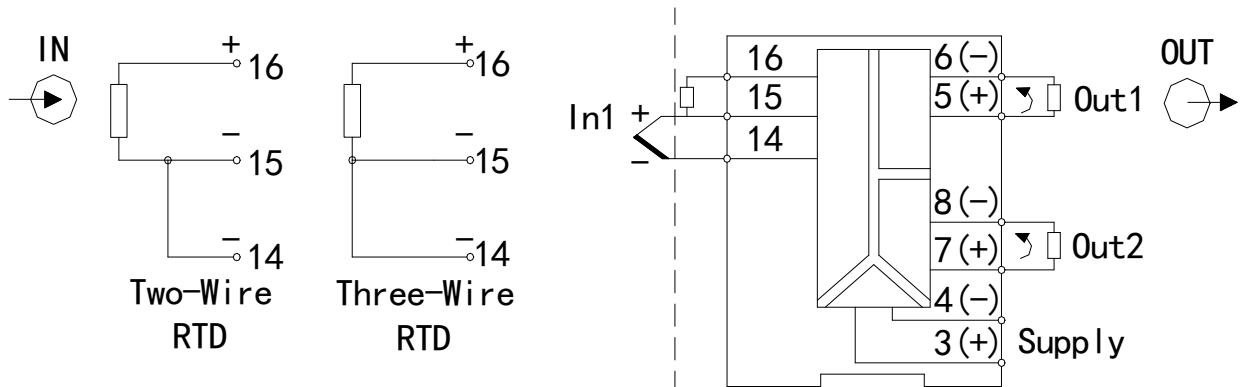
6.2.17 BM100-DV/□-C11(Power supply : 220V):



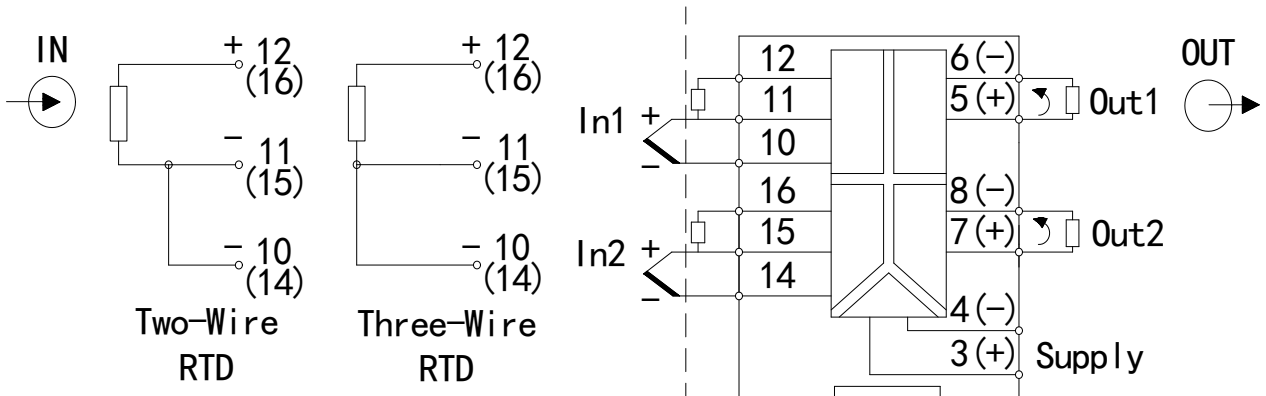
6.2.18 BM100-TR/□-B11:



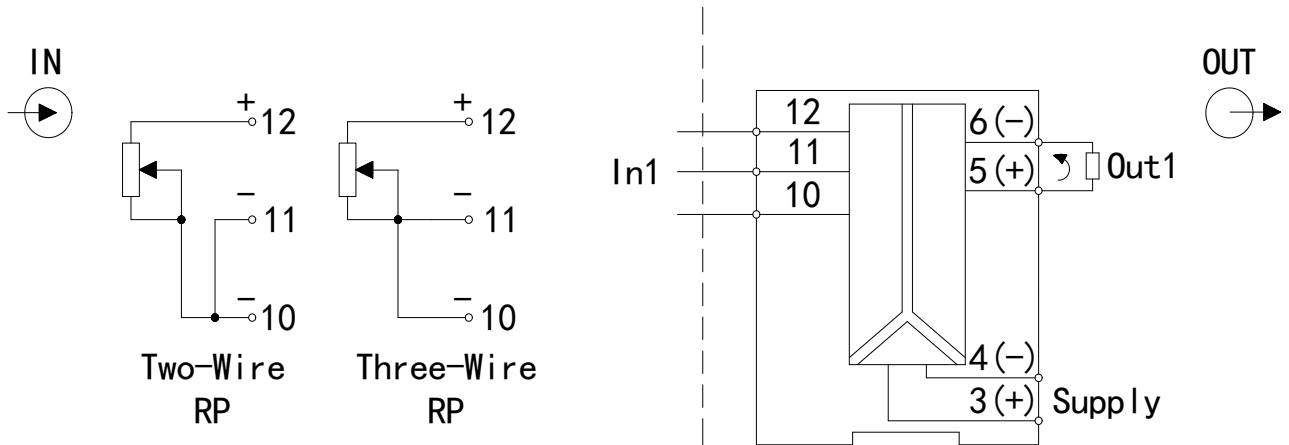
6.2.19 BM100-TR/□-C12:



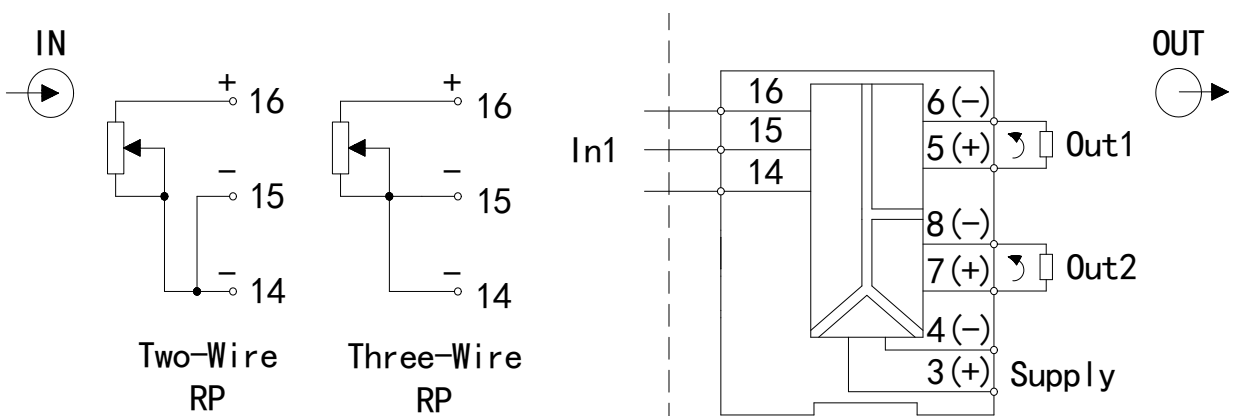
6.2.20 BM100-TR/□-C22:



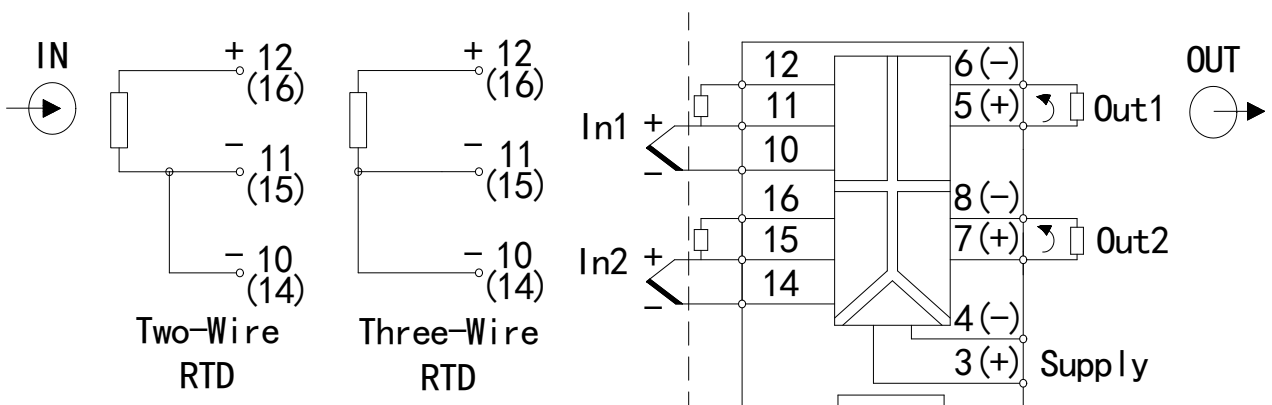
6.2.21 BM100-VR/□-B11:



6.2.22 BM100-VR/□-C12:



6.2.23 BM100-VR/□-C22:



7 Precautions

7.1 This product must be installed in a safe area, and the surrounding air does not contain any medium that is corrosive to chromium, nickel and silver plating.

7.2 The input signal type of the two-in-two-out instrument can only select voltage or current signal at the same time.

7.3 Switching between current output and voltage output is not possible, it needs to be done by changing the hardware, please specify clearly when ordering.

8 Application examples

E.g.1 Input: single-way 4-20mA , output: double-way 4-20mA , power supply: 24V DC
Type: BM100-DI/I-C12

E.g.2 Input: single-way 0-5V, output: double-way 0-20mA , power supply: 220V AC
Type: BM100-DV/I-C12 (Remarks: 220V)

E.g.3 Input: double-way PT100, output: double-way 0-20mA , power supply: 24V DC
Type: BM100-TR/I-C22

E.g.4 Input: single-way 4-20mA, output: single-way 4-20mA , power supply: none
Type: BM100-DIS/I-B11

E.g.5 Input: double-way 4-20mA, output: double-way 4-20mA , loop power supply.
Type: BM100-DI/IS-B22