

# AZHVDC

## HIGH VOLTAGE DC RELAY

### FEATURES

- High voltage direct current relay
- 10A, 20A 40A, 100A, 150A, 200A, 300A switching
- 4kV dielectric strength (between coil and contact)
- Hermetically sealed
- Switching power up to 750kW(300A)



### CONTACTS

<b>Arrangement</b>	1 Form A (SPST - NO)
<b>Ratings</b>	<p>Resistive load:            Max. switched power: 30kW(10A Contact)            60kW(20A Contact)            120kW(40A Contact)            400kW(100A Contact)            450kW(150A Contact)            600kW(200A Contact)            750kW(300A Contact)</p> <p>Max. switched current:            100A at 300 VDC (1 op min.) 10A contact            200A at 300 VDC (1 op min.) 20A contact            400A at 300 VDC (1 op min.) 40A contact            1000A at 300 VDC (1 op min.) 100A contact            1500A at 300 VDC (1 op min.) 150A contact            2000A at 300 VDC (1 op min.) 200A contact            2500A at 300 VDC (1 op min.) 300A contact</p> <p>Max. switched voltage:            1000VDC(10Acontact)            1000VDC (20A contact)            1000VDC (40A contact)            1000VDC(100Acontact)            1000VDC (150A contact)            1000VDC (200A contact)            1000VDC (300Acontact)</p>
<b>Rated Load</b>	Resistive load: 10A 750 VDC 20A 750 VDC 40A 750 VDC 100A 750 VDC 150A 750 VDC 200A 750 VDC 300A 750 VDC
<b>Material</b>	Copper alloy
<b>Resistance</b>	10 milliohms max. (6VDC 10A) 10A contact 10 milliohms max. (6VDC 20A) 20A contact 10 milliohms max. (6VDC 20A) 40A contact 1.5 milliohms max. (6VDC 20A) 100A contact 1.5 milliohms max. (6VDC 20A) 150A contact 0.2 milliohms max. (200A) 200A contact 0.2 milliohms max. (300A) 300A contact

### COIL

<b>Power</b>	
<b>At Nominal Voltage</b>	
10A, 20A	2.6W
40A	3.0W
100A	4.5W
150A	6.0W
200A	Pick-up: 34W, Carrying: 4W
300A	Pick-up: 45W, Carrying: 3.8W
<b>Temperature</b>	-40°C to 85°C(185°F)

### GENERAL DATA

<b>Life Expectancy</b>	2 x 10 <sup>5</sup> OPS
<b>Mechanical</b>	
<b>Electrical</b>	1 X 10 <sup>5</sup> ops (10A 1000VDC) 10A contact 1 X 10 <sup>5</sup> ops (10A 1000VDC) 20A contact 3 X 10 <sup>4</sup> ops (20A 750VDC) 20A contact 1 X 10 <sup>5</sup> ops (10A 1000VDC) 40A contact 3 X 10 <sup>3</sup> ops (40A 750VDC) 40A contact 1 X 10 <sup>4</sup> ops (30A 1000VDC) 100A contact 1 X 10 <sup>4</sup> ops (100A 750VDC) 100A contact 1 X 10 <sup>4</sup> ops (30A 1000VDC) 150A contact 3 X 10 <sup>3</sup> ops (150A 750VDC) 150A contact 1 X 10 <sup>4</sup> ops (50A 1000VDC) 200A contact 3 X 10 <sup>3</sup> ops (200A 750VDC) 200A contact 1 X 10 <sup>4</sup> ops (75A 1000VDC) 300A contact 3 X 10 <sup>3</sup> ops (300A 750VDC) 300A contact
<b>Operate Time (max)</b>	30 ms at nominal coil voltage
<b>Release Time (max)</b>	10 ms at nominal coil voltage (with no coil suppression)
<b>Dielectric Strength (at sea level for 1 min.)</b>	4000 VAC coil to contact 3000 VAC between open contacts
<b>Insulation Resistance</b>	1000 megohms(500 VDC)
<b>Dropout</b>	Greater than 8% of nominal coil voltage

### NOTES

1. All values at 23°C (73.4°F).
2. Relay may pull in with less than "Must Operate" value.
3. Specifications subject to change without notice.

**AMERICAN ZETTLER, INC.**

[www.azettler.com](http://www.azettler.com)

75 COLUMBIA • ALISO VIEJO, CA 92656 • PHONE: (949) 831-5000 • FAX: (949) 831-8642 • E-MAIL: SALES@AZETTLER.COM

## GENERAL DATA (CONTINUED)

<b>Ambient Temperature Operating</b>	-40°C (-40°F) to 85°C (185°F)
<b>Storage</b>	-40°C (-40°F) to 85°C (185°F)
<b>Humidity</b>	5% to 95% RH
<b>Vibration</b>	10Hz to 55Hz 1.5mm DA
<b>Shock</b>	
<b>Functional</b>	196m/s <sup>2</sup>
<b>Destructive</b>	490m/s <sup>2</sup>
<b>Enclosure</b>	P.B.T Polyester
<b>Termination</b>	M5 screw thread (40A) M6 screw thread (100A) Cu-Bus-Bar Terminal (150A) M8 screw thread (200A,300A)
<b>Weight</b>	Approx. 150g (10A, 20A) Approx. 180g (40A) Approx. 400g (100A) Approx. 450g (150A) Approx. 650g (200A) Approx. 850g (300A)

## RELAY ORDERING DATA

Load Type	Nominal Coil VDC	Must Operate VDC	Coil Resistance ±10%	ORDER NUMBER
10A	12	9	55	AZHVDC-1A10-12
20A	12	9	55	AZHVDC-1A20-12
40A	12	9	48	AZHVDC-1A40-12
100A	12	9	32	AZHVDC-1A100-12
150A	12	9	44	AZHVDC-1A150-12
200A	12	9	36	AZHVDC-1A200-12
300A	12	9	38	AZHVDC-1A300-12
10A	24	18	222	AZHVDC-1A10-24
20A	24	18	222	AZHVDC-1A20-24
40A	24	18	192	AZHVDC-1A40-24
100A	24	18	128	AZHVDC-1A100-24
150A	24	18	96	AZHVDC-1A150-24
200A	24	18	144	AZHVDC-1A200-24
300A	24	18	152	AZHVDC-1A300-24
10A	48	36	886	AZHVDC-1A10-48
20A	48	36	886	AZHVDC-1A20-48
40A	48	36	768	AZHVDC-1A40-48
100A	48	36	512	AZHVDC-1A100-48
150A	48	36	384	AZHVDC-1A150-48
200A	48	36	576	AZHVDC-1A200-48
300A	48	36	606	AZHVDC-1A300-48

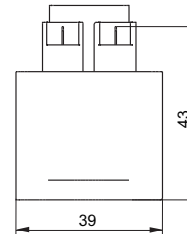
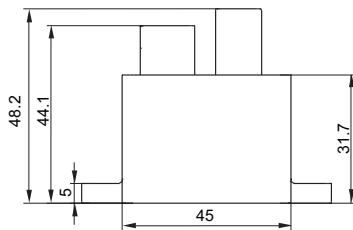
See Mechanical Data to find part number suffix for Termination and Mounting options.

**AMERICAN ZETTLER, INC.** [www.azettler.com](http://www.azettler.com)

75 COLUMBIA • ALISO VIEJO, CA 92656 • PHONE: (949) 831-5000 • FAX: (949) 831-8642 • E-MAIL: SALES@AZETTLER.COM

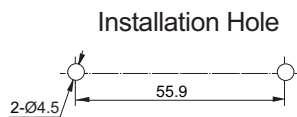
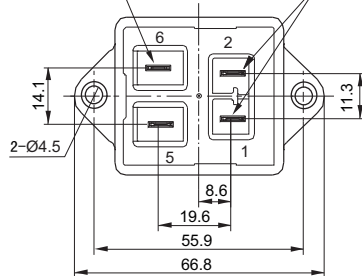
## MECHANICAL DATA

10 Amp Version Outline Dimensions (Unit: mm)

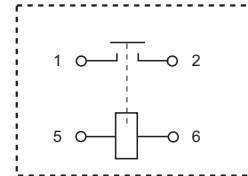


Coil input terminal (Non-polarity)  
#187 insert terminal, Thickness=0.5

Load input terminal(Non-polarity)  
#187 insert terminal, Thickness=0.5



Coil Wring Diagram



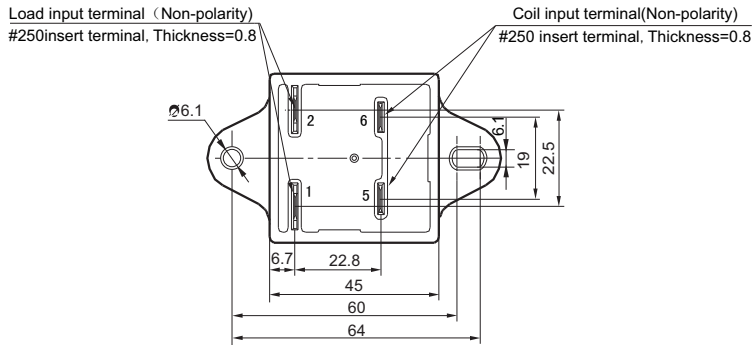
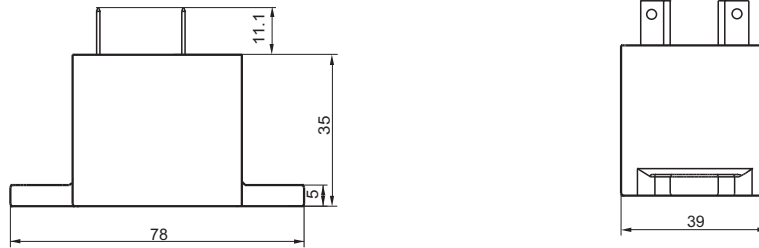
note: no polarity on the loads and coil.

**Remark:** In case of no tolerance shown in outline dimension: outline dimension  $\leq 10$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 10$ mm and  $\leq 50$ mm, tolerance should be  $\pm 0.5$ mm; outline dimension  $> 50$ mm, tolerance should be  $\pm 0.8$ mm.

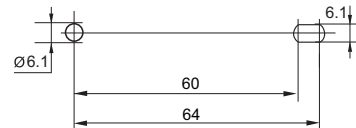
**Standard product comes with Quick Connect terminal fixing**

## MECHANICAL DATA

20 Amp Version Outline Dimensions (Unit: mm)

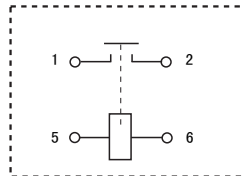


Installation Hole



**Remark:** In case of no tolerance shown in outline dimension: outline dimension  $\leq 10\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 10\text{mm}$  and  $\leq 50\text{mm}$ , tolerance should be  $\pm 0.5\text{mm}$ ; outline dimension  $> 50\text{mm}$ , tolerance should be  $\pm 0.8\text{mm}$ .

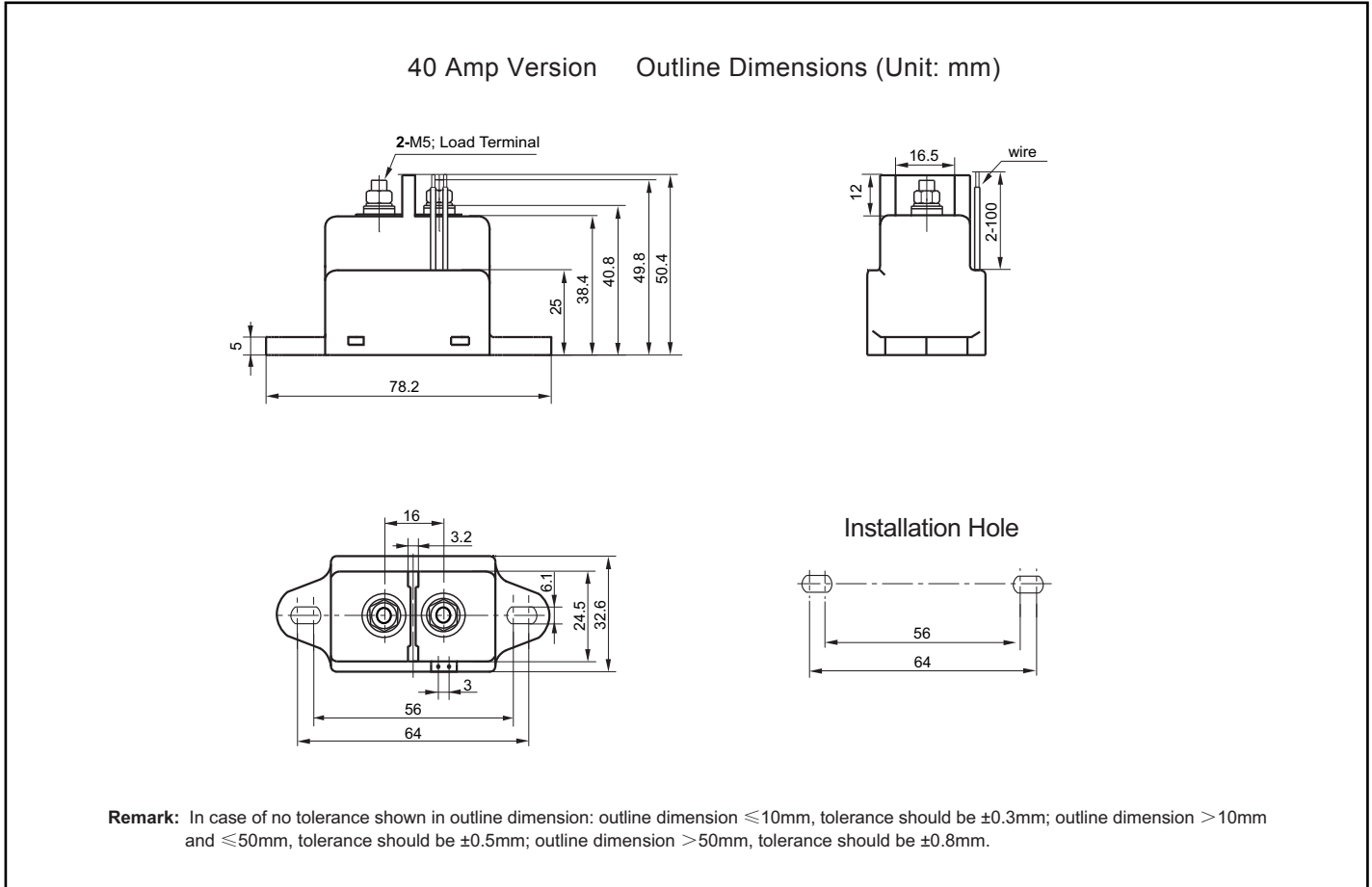
Coil Wring Diagram



note: no polarity on the loads and coil.

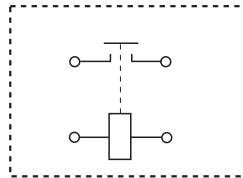
Standard product comes with Quick Connect terminal fixing

## MECHANICAL DATA



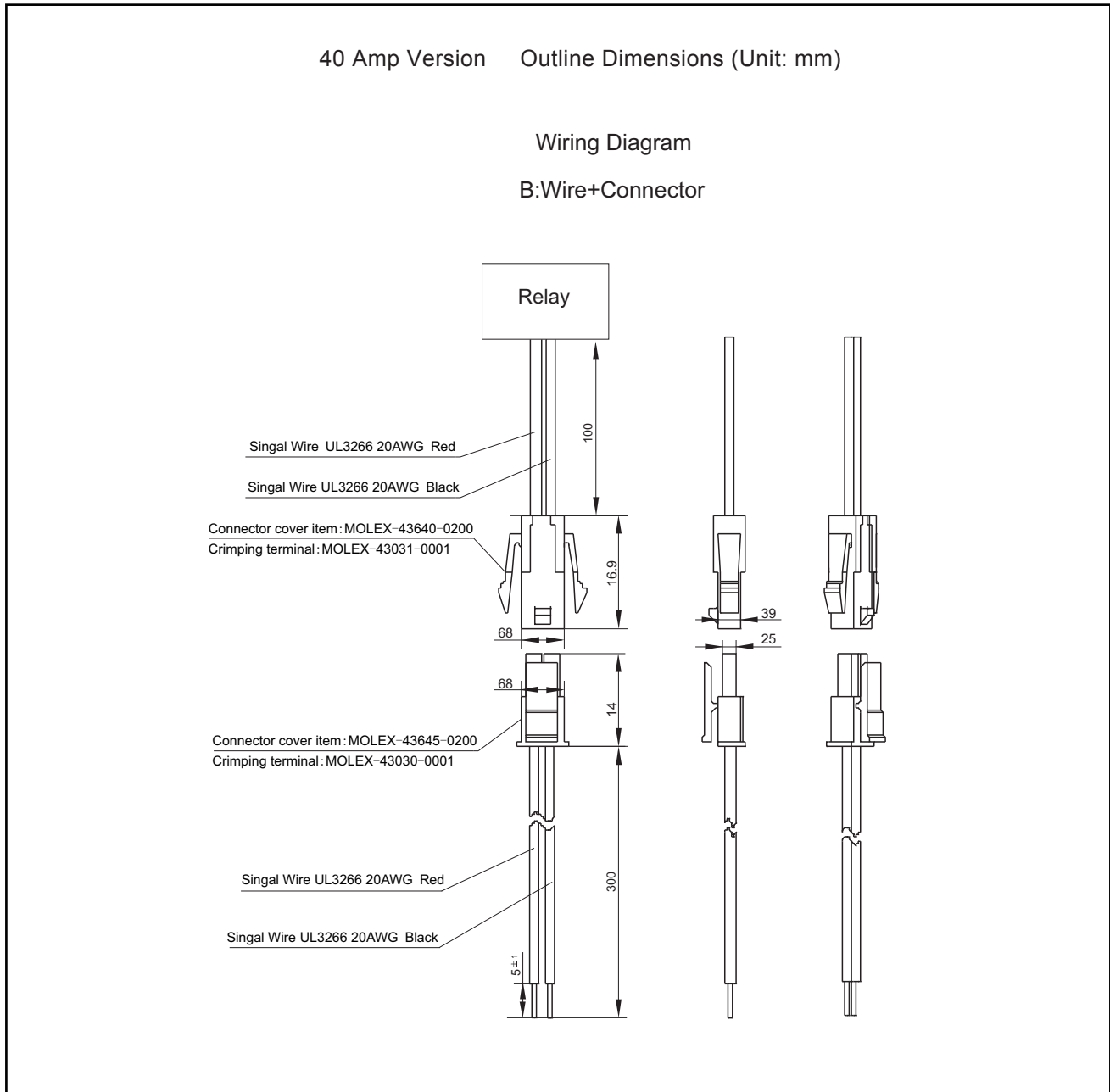
**Add Suffix "L" to the standard part number for this option of the part - Lead Wire input**

### Coil Wiring Diagram



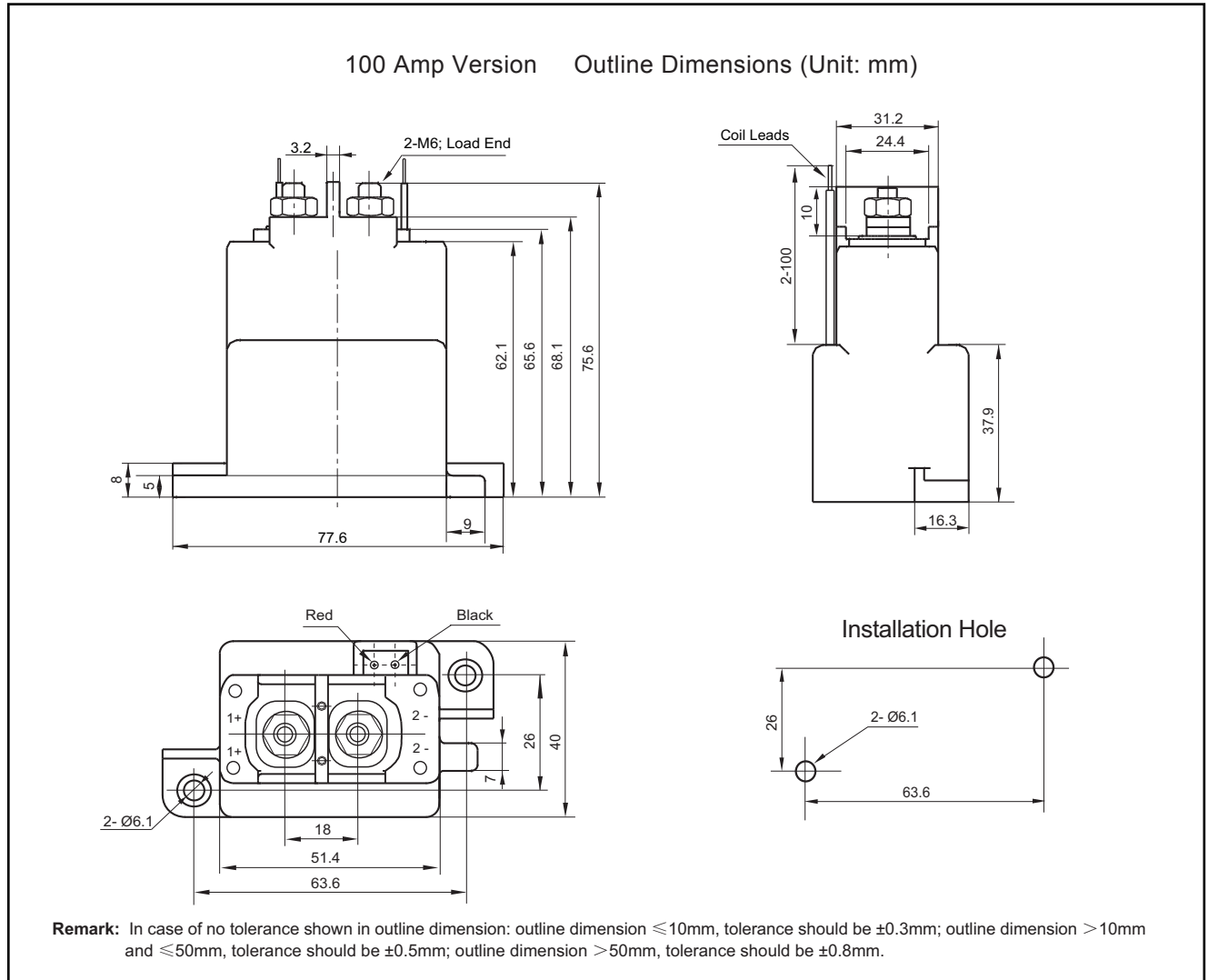
note: no polarity on the loads and coil.

## MECHANICAL DATA



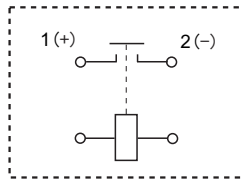
Add Suffix "B" to the standard part number for this option of the part - Wire + Connector input

## MECHANICAL DATA



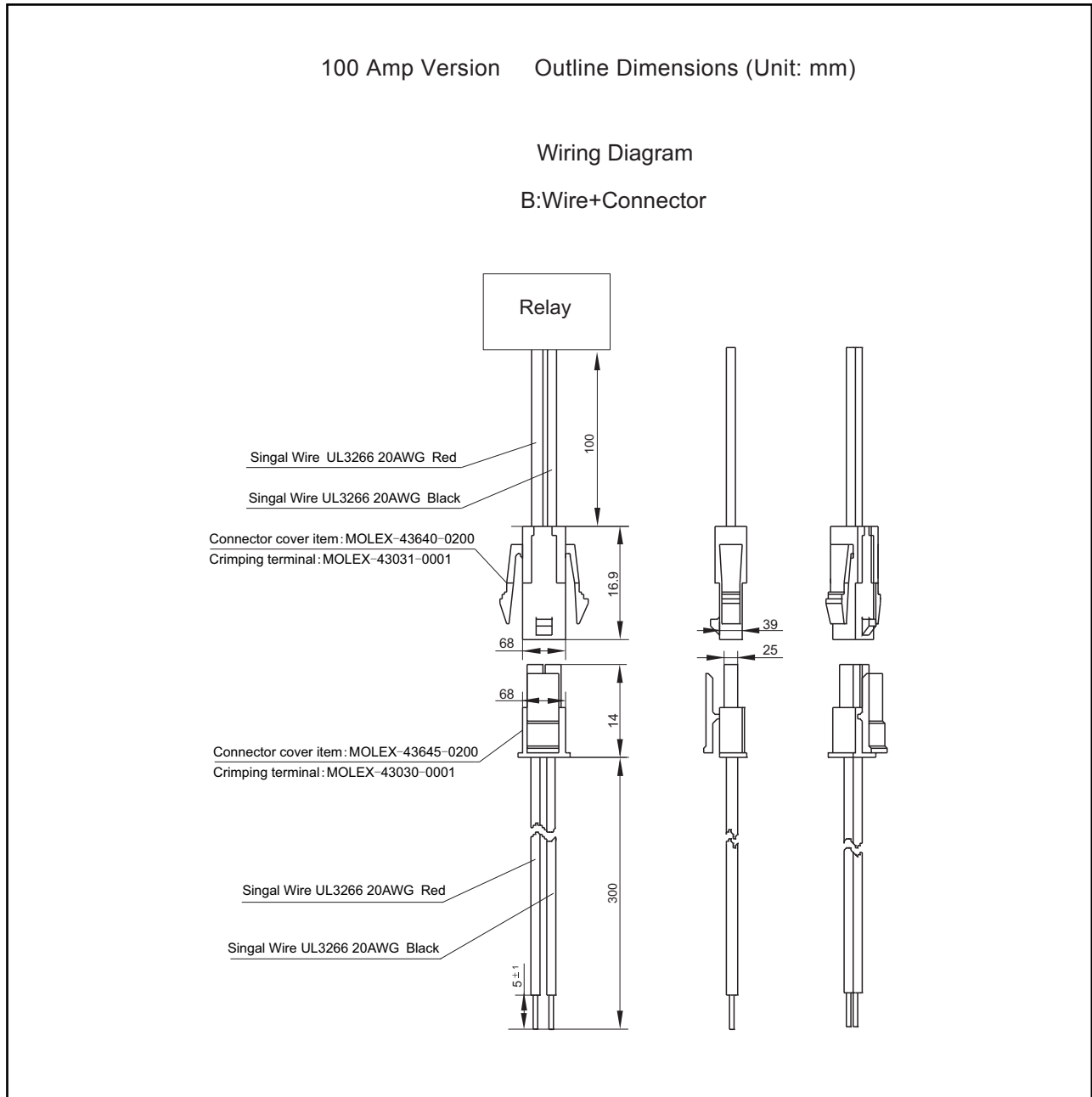
**Add Suffix "L" to the standard part number for this option of the part - Lead Wire input**

### Coil Wiring Diagram



note: polarity option on the loads;  
no polarity on coil.

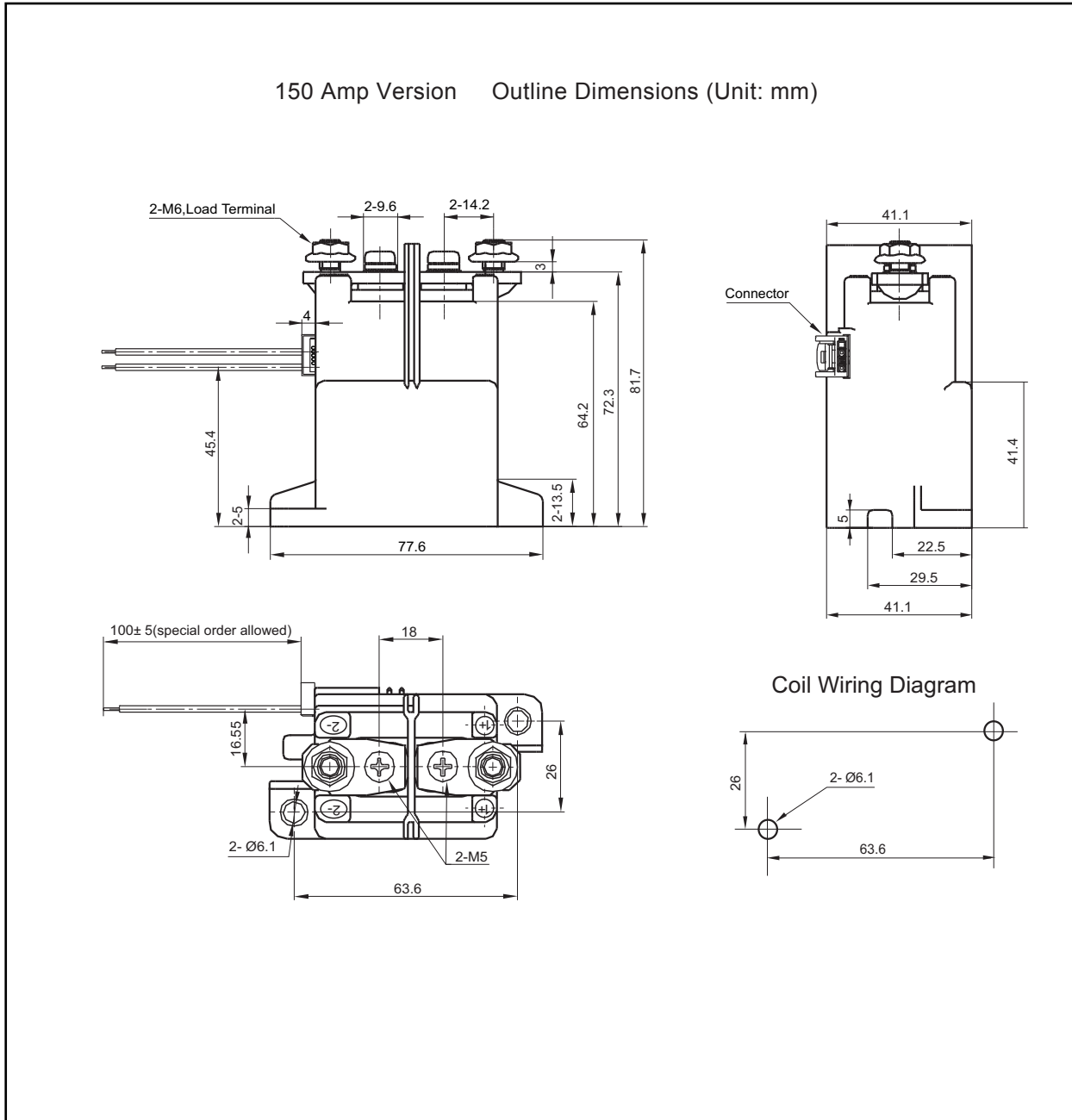
## MECHANICAL DATA



Add Suffix "B" to the standard part number for this option of the part - Wire + Connector input



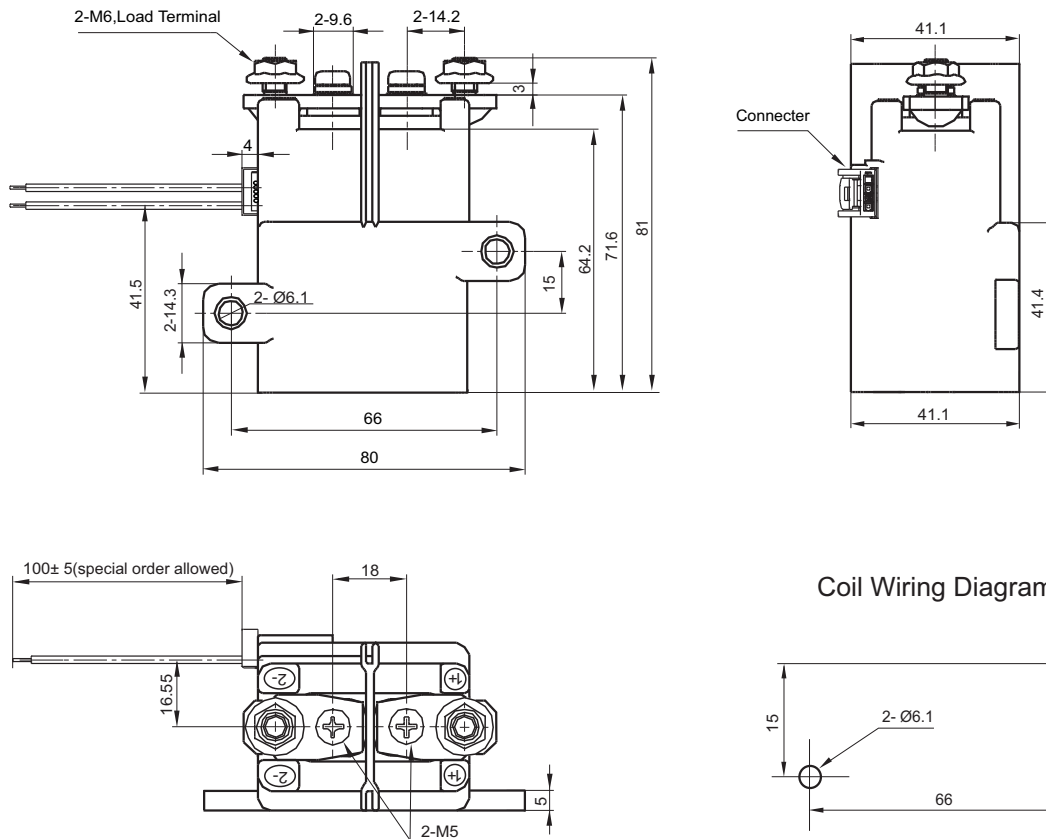
## MECHANICAL DATA



Standard product with Vertical mounting

## MECHANICAL DATA

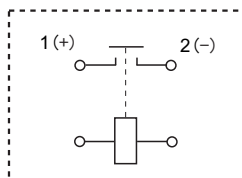
150 Amp Version Outline Dimensions (Unit: mm)



**Remark:** In case of no tolerance shown in outline dimension: outline dimension  $\leq 10$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 10$ mm and  $\leq 50$ mm, tolerance should be  $\pm 0.5$ mm; outline dimension  $> 50$ mm, tolerance should be  $\pm 0.8$ mm.

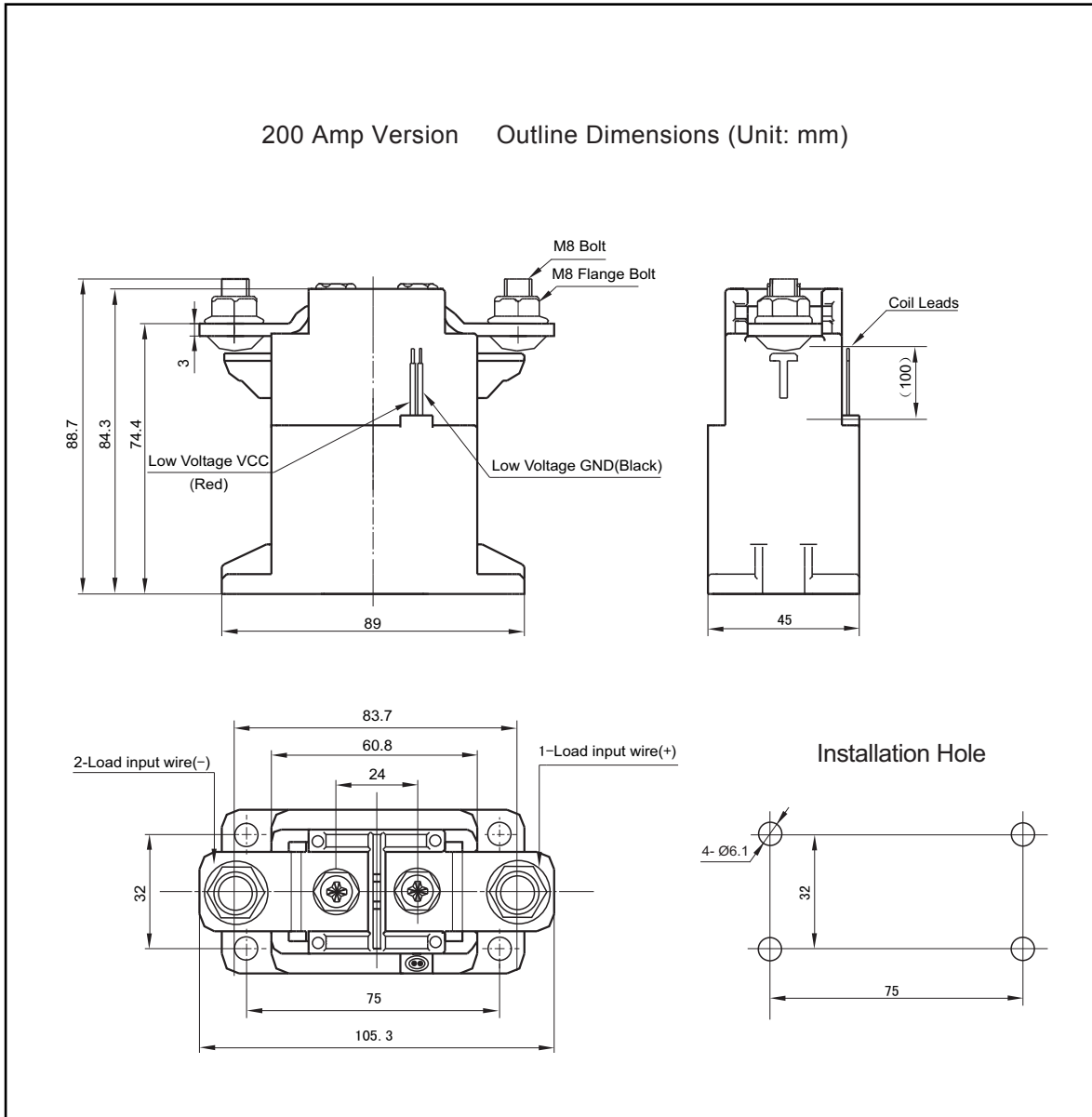
**Add Suffix "Y" to the standard part number for this option of the part - Horizontal mounting**

### Wiring Diagram



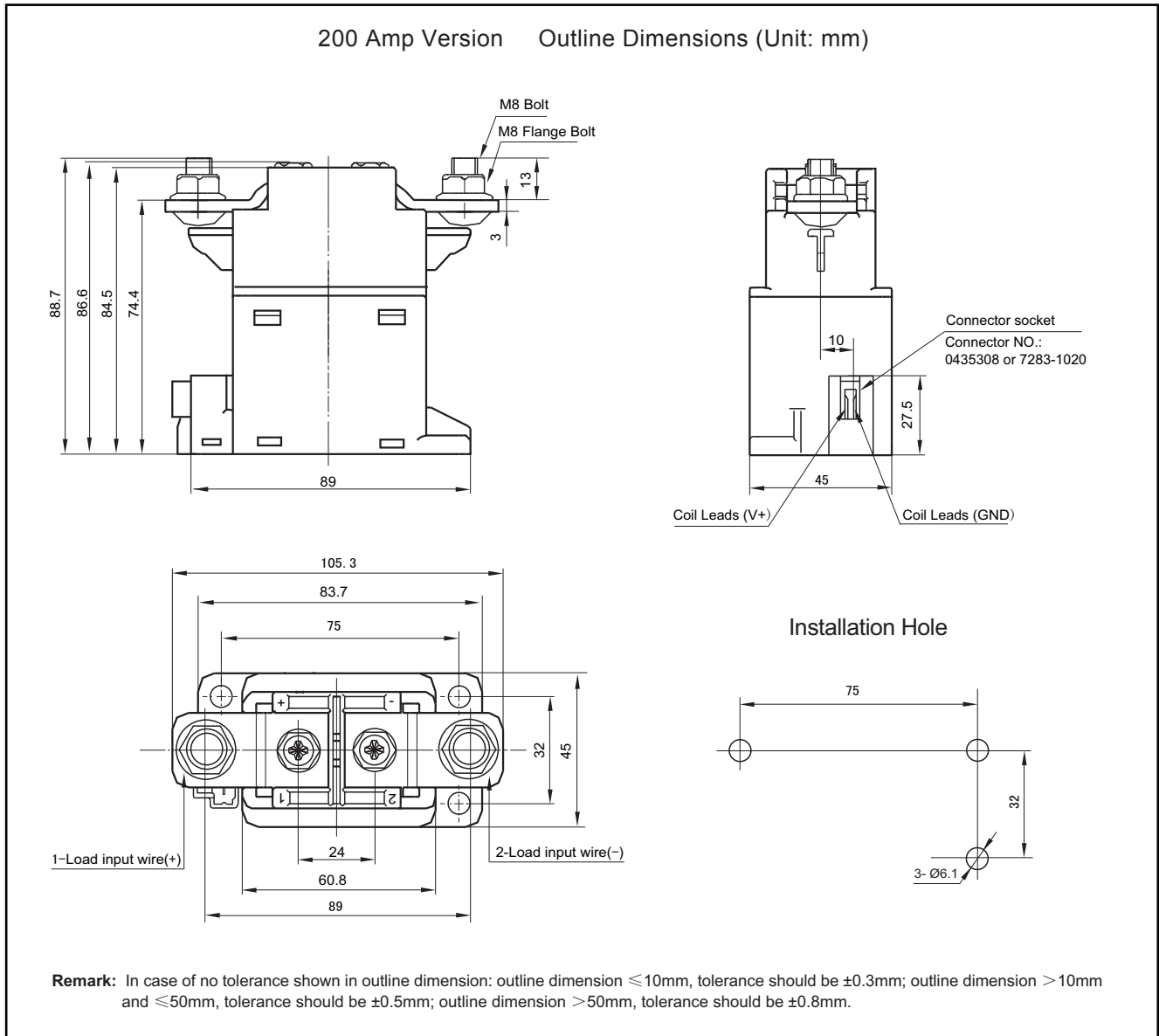
**note:** polarized on load terminal;  
no polarity on coil.

## MECHANICAL DATA



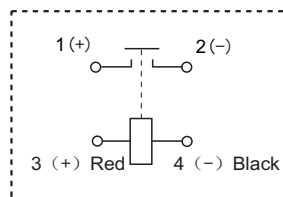
Add Suffix "L" to the standard part number for this option of the part - Lead Wire input

## MECHANICAL DATA



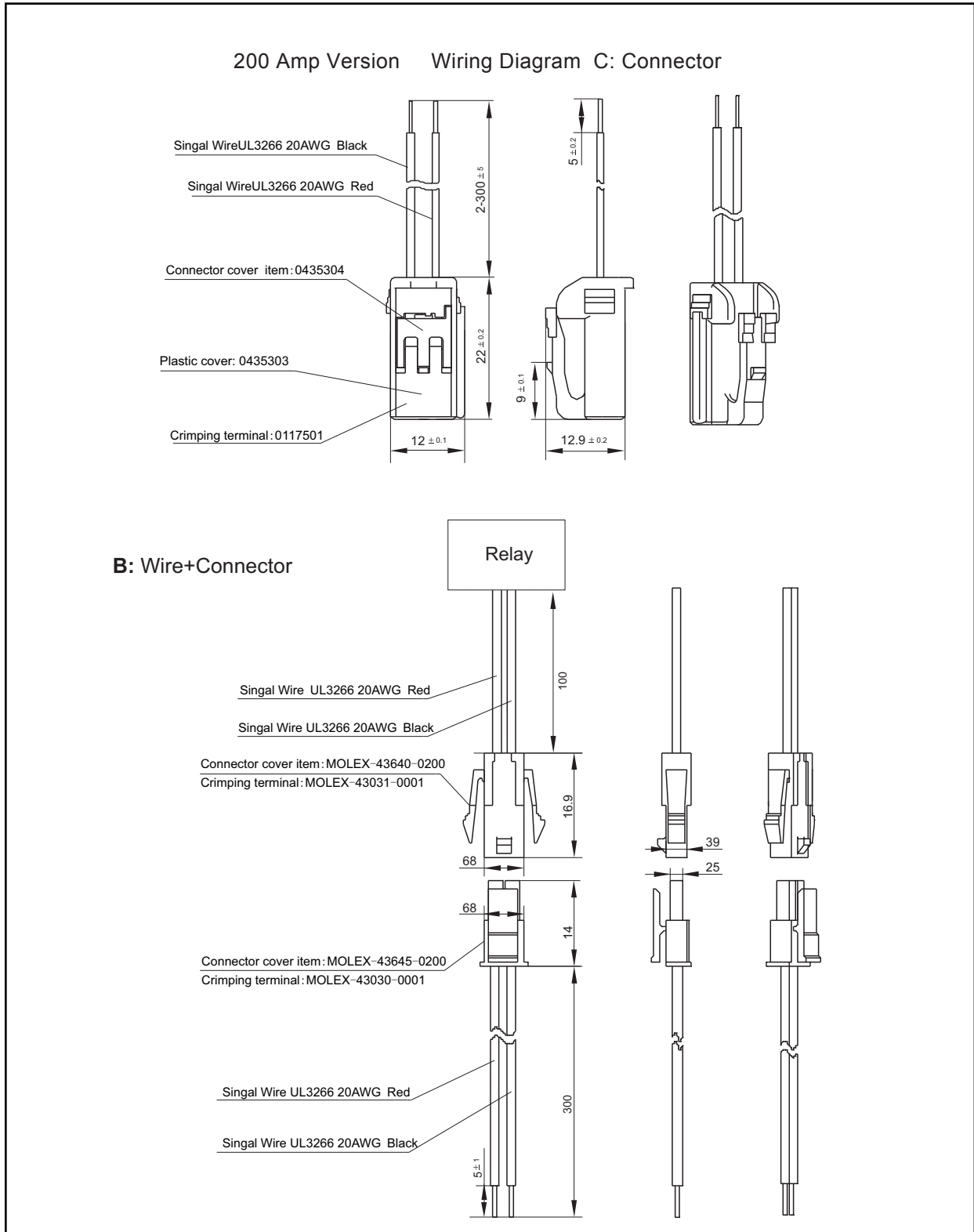
**Add Suffix "C" to the standard part number for this option of the part - Connector input**

### Coil Wring Diagram



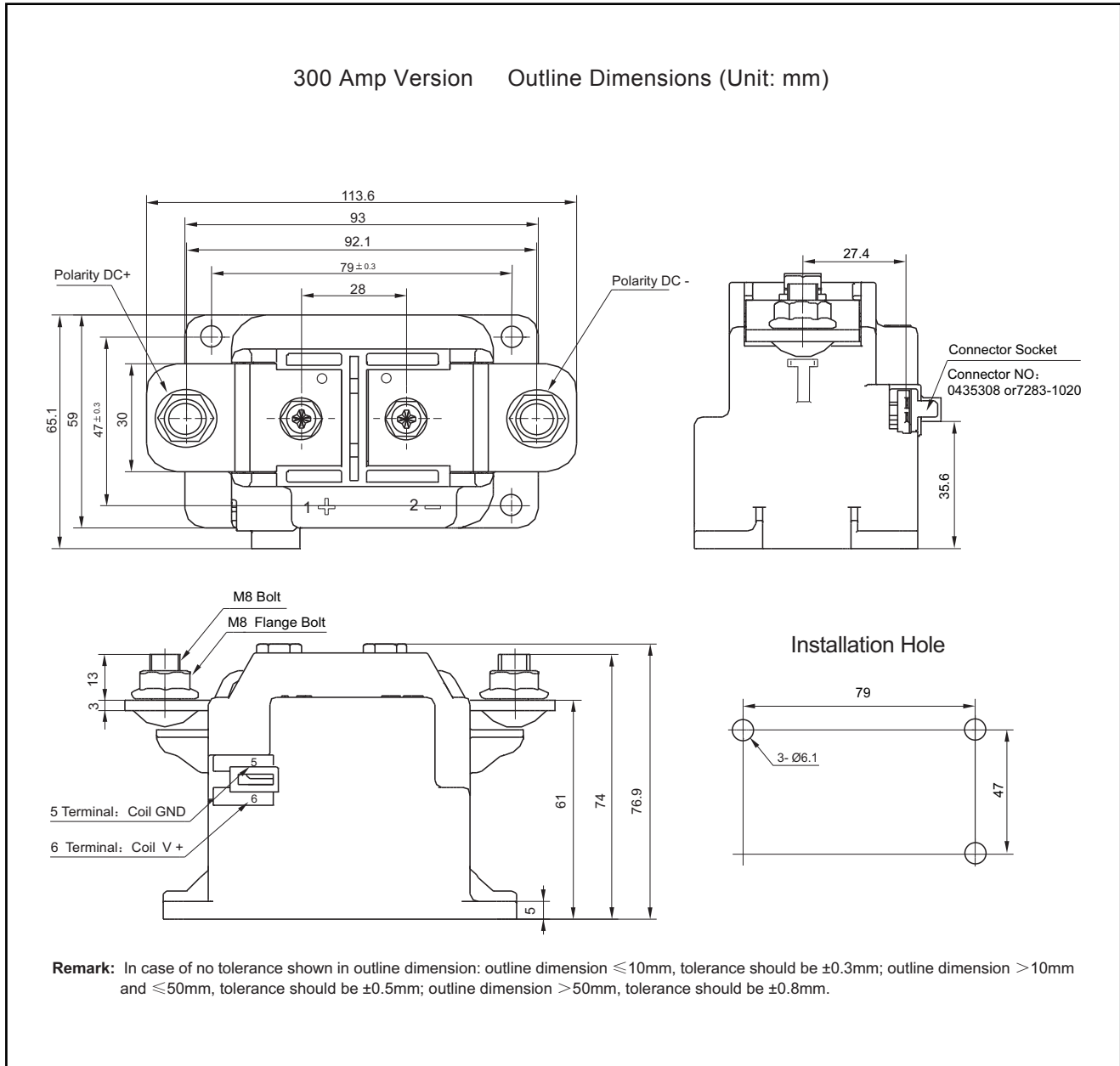
note: polarity option on loads and coil.

## MECHANICAL DATA



Add Suffix "B" to the standard part number for this option of the part - Wire + Connector input

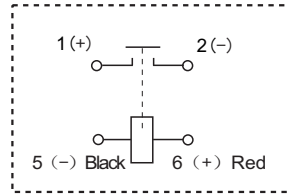
## MECHANICAL DATA



Add Suffix "C" to the standard part number for this option of the part - Connector input  
Add Suffix "L" to the standard part number for Lead Wire input

## MECHANICAL DATA

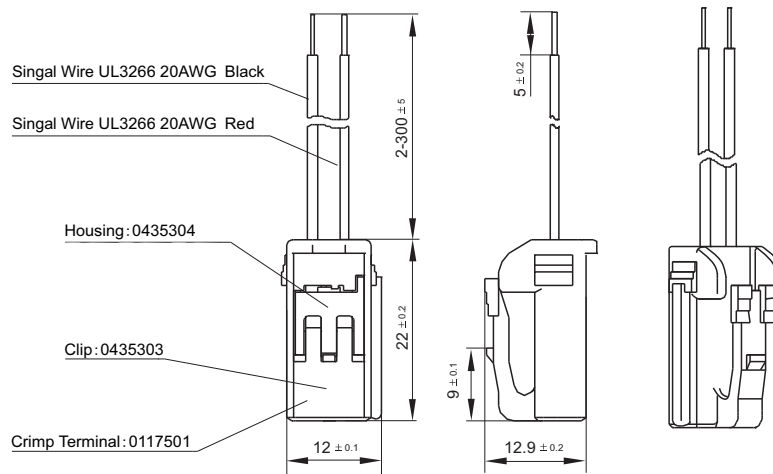
### 300 Amp Version Coil Wiring Diagram



note: polarity option on loads and coil.

### Wiring Diagram

C: Connector



**Remark:** In case of no tolerance shown in outline dimension: outline dimension  $\leq 10$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 10$ mm and  $\leq 50$ mm, tolerance should be  $\pm 0.5$ mm; outline dimension  $> 50$ mm, tolerance should be  $\pm 0.8$ mm.

**Add Suffix "B" to the standard part number for this option of the part - Wire + Connector input**

For 40A, recommended wire size greater than or equal to AWG 7(10,5 mm<sup>2</sup>)  
For 100A, recommended wire size greater than or equal to AWG 1 (42.41 mm<sup>2</sup>).  
For 300A, recommended wire size greater than or equal to AWG 4/0 (107.2 mm<sup>2</sup>).