

LM series

LCD Display type Multi panelmeter

- Use a wide viewing angle LCD and white backlight
- Short rear length of 68 mm (LM3) and 81 mm (LM6)
- IP66 Protection Structure (Front of Product)
- RMS and AVG Selection Measurement
- MODBUS Communication Support
- Maximum measurement input specification (500 V d.c., 500 V a.c., 5A d.c., 5A a.c.)



Specification

Model	LM3/6-DV	LM3/6-DA	LM3/6-AV	LM3/6-AA
Size	• LM3 : 96(W) x 48(H) x 68(D) mm • LM6 : 72(W) x 36(H) x 81(D) mm			
Power	100 - 240 V a.c. 50/60 Hz			
Power Consumption	■ LM3-N: 6 VA or less ■ LM3-3R/3RC: 10 VA or less ■ LM3-3RT: 11 VA or less ■ LM3-3NC/3PC: 9 VA or less ■ LM3-3NT/3PT: 10 VA or less ■ LM6-N: 5 VA or less ■ ■ LM6-3N/3P: 5 VA or less ■ ■ LM6-RT: 7 VA or less			
Input signal	DC voltage	DC current	AC voltage / frequency	AC current / frequency
Input range	500 V / 100 V 50 V / 10 V 5 V / 1 V 200 mV / 50 mV	5 A / 2 A 500 mA / 200 mA 50 mA / 4 - 20 mA 5 mA / 2 mA	500 V / 250 V 110 V / 50 V 20 V / 10 V 2 V / 1 V	5 A / 2 A 500 mA / 200 mA 50 mA / 20 mA
AC measurement method	AVG / RMS selective measurement			
Input sampling cycle	50 ms			
Input sampling method	OVER sampling method using continuous approximation A / D converter			
Maximum allowable input	F.S. of each input range 110 %			
Frequency measurement range	0.2 ~ 9999 Hz (Frequency measurement range depends on the decimal point position)			
Display	■ Negative-LCD ■ 4 digit 2 rows ■ PV (White) ■ SV (Green)			
Character size	■ LM3 : 17.6 x 10.6 mm ■ LM6 : 7.0 x 11.5 mm			
Maximum display	-9999 ~ 9999			
Display degree	■ [23 °C ± 5 °C] - F.S. ± 0.1 % rdg ± 2 digit ■ [23 °C ± 5 °C, 5 A] - F.S. ± 0.3 % rdg ± 3 digit ■ [50 °C ~ -10 °C] - F.S. ± 0.5 % rdg ± 3 digit			
Control output	■ Contact output : 3 stage, SPST (1a), 250 V a.c. 5 A ■ Solid state output: 3-stage, NPN or PNP open collector, 12 - 24 V d.c. 50mA or less			
Relay life time	■ Electrical (about 100,000 times, 250 V a.c. 5 A) ■ Mechanical (about 5 million times)			
Optional output	■ Transmission output (4 - 20 mA) ■ RS - 485 output			
External input	■ HOLD/ZERO Optional input ■ Non - voltage input ■ Short circuit impedance: 300 Ω or less ■ Residual voltage: 1 V or less ■ Impedance when open: 100 kΩ or more			
Communication	■ Communication protocol : Modbus - RTU ■ Communication method : RS - 485 (2 - wire half duplex) ■ Communication speed : 2400 / 4800 / 9600 / 19200 / 38400 bps			
Insulation Resistance	100 MΩ or more (500 V d.c. Mega standard, between conductive terminal and case)			
Withstand voltage	2000 V a.c. 60 Hz 1 minute (between conductive terminal and case)			
Noise	± 2 kV(Between operation power terminals, Pulse width = 1 us, Square wave noise by noise simulator)			
Vibration resistance	10 - 55 Hz, Single amplitude 0.5 mm, 3 - axis angular, 2 hours			
Approval				
Protection structure	■ IP66 (front) ■ Terminal block protection cover applied			

Ambient temperature and humidity	-10 ~ 50 °C, 35 ~ 85 % R.H.
Storage temperature	-20 ~ 65 °C

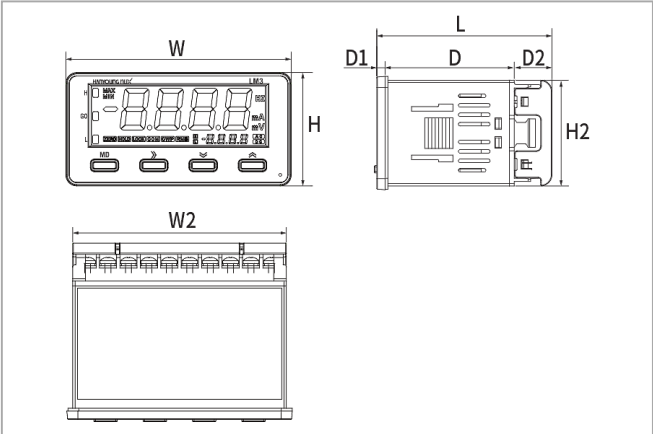
Suffix Code

Model	Code						Description
LM	□-	□	□-	□	□-	□	LCD Multi Panelmeter
Appearance	3						96(W) X 48(H) mm
	6						72(W) X 36(H) mm
Displayable Digit		4					4 Digit indication
Input Specification			DV				DC voltage
			DA				DC current
			AV				AC voltage
			AA				AC current
Output specifications			N				Non only (Indication option output)
			R				1-stage contact output *LM6 only (For LM6-RC/RT, 1-stage contact output fixed.)
			3R				3-stage contact output
			3N				3-stage NPN open collector output
			3P				3-stage PNP open collector output
Optional output			-				Non option output
			C				RS-485 output (MODBUS-RTU)
			T				Transmission output (4 - 20 mA d.c.)
Power supply voltage						A	100 - 240 V a.c. 50/60 Hz

Dimension & Panel cutout

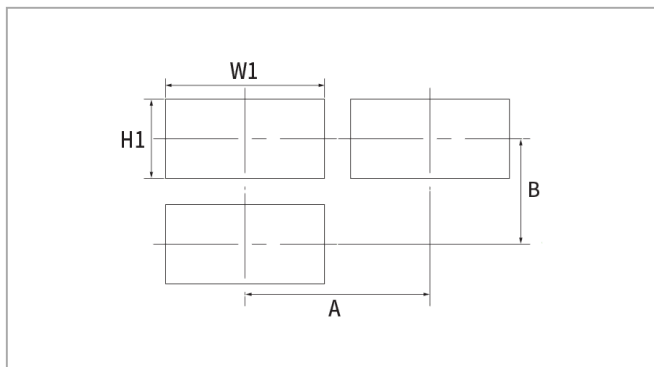
[Unit : mm]

Dimension



Classification	Type	LM3	LM6
Product dimensions (Including protective cover.)	W	96.0	72.0
	H	48.0	36.0
	D	55	68
	D1	3.5	3.5
	D2	16.1	16.1
	L	74.6	87.6
	W2	91.0	66.0
	H2	44.8	30.5

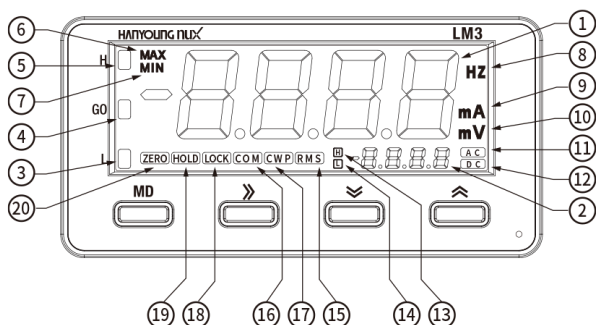
Panel cutout



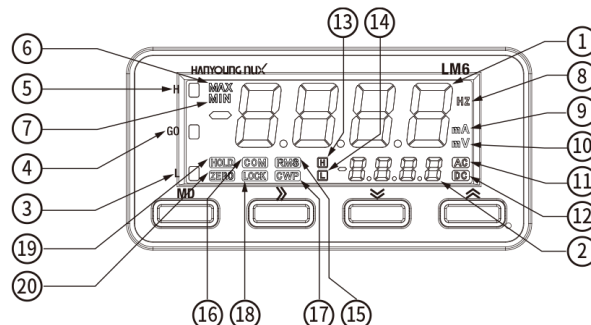
Classification	Type	LM3	LM6
Panel cutout	W1	91.5	66.5
	H1	45.5	32.0
	A	121.5	96.5
	B	70.5	57.0

Part names and functions

LM3



LM6



NO	Name	Function
1	PV Display	Operation mode: Measured value / maximum value / minimum value Display Function mode: Parameter display
2	SV Display	Operation mode: Set in function mode Input range display Function mode: Parameter setting value display Setting mode: Upper / lower limit comparison value display (Only for output model)
3	LOW output lamp	Lights up when the lower limit output is operating
4	GO output lamp	Lights up during GO output operation
5	HIGH output lamp	Lights up when the lower limit output is operating
6	MAX lamp	Lights up when the PV display is in the maximum value display mode
7	MIN lamp	Lights up when the PV display is in the minimum value display mode
8	HZ lamp	Lights up when the PV display is in the frequency measurement mode (Displayed on AV / AA models only)
9	A / mA lamp	Lights up when PV display is in current measurement mode
10	V / mV lamp	Lights up when PV display is in voltage measurement mode
11	AC lamp	Lights up when the model is AV / AA model
12	DC lamp	Lights up when the model is DV / DA model
13	H lamp	Lights up when SV display is in the upper limit comparison value display mode
14	L lamp	Lights up when SV display is in the lower limit comparison value display mode
15	RMS lamp	Lights up in RMS measurement mode (AV / AA model only)
16	COM lamp	Lights up when model is communication model
17	CWP lamp	Lights up when communication write prohibition is set
18	LOCK lamp	Lights up when locked
19	HOLD lamp	Lights up when external HOLD signal is applied
20	ZERO lamp	Lights up when external ZERO signal is applied

Front-key functions and names

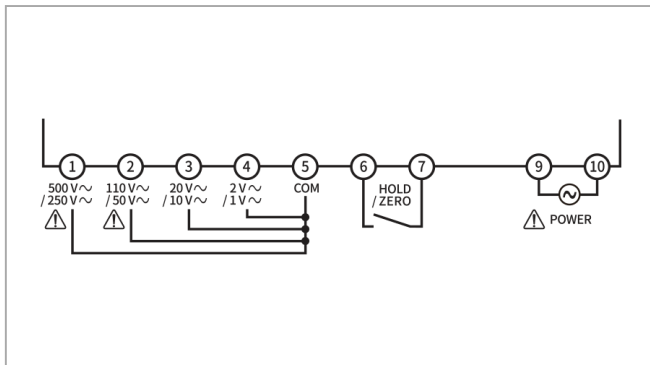
Name	Function
MODE 	- In operation mode,  press key for more than 3 seconds to enter function mode - In operation mode, when SV display window is in input range display mode,  press key,  lamp is turned on and the SV display window is converted to the upper limit comparison value. - In operation mode, when SV display window is in upper limit comparison value display mode,  press key,  lamp lights up and the SV display window is converted to the lower limit comparison value. - In operation mode, when SV display window is in lower limit comparison value display mode,  press key,  lamp goes out and the SV display window is converted to the input range value set in the parameter. - If the model is not an output model or O – MD is OFF, the SV display window is fixed with the input range value set in the parameter.
SHIFT 	- In the operation mode, when the SV display window is in the upper limit comparison value display mode,  press the key to enter the upper limit comparison value setting mode. - In operation mode, when SV display window is in the lower limit comparison value display mode,  press the key to enter the lower limit comparison value setting mode. - Pressing the  key in the upper limit comparison value setting mode moves the digit of the upper limit comparison value. - Pressing the  key in the lower limit comparison value setting mode moves the digit of the lower limit comparison value. - The setting range of the upper limit comparison value and lower limit comparison value depends on the decimal point position set in the parameter. can be set as '9.999 ~ -9.999 / 99.99 ~ -99.99 / 999.9 ~ -999.9 / 9999 ~ -9999'
ZERO/DOWN 	- Pressing the  key in the upper limit comparison value setting mode decreases the upper limit comparison value in the SV display window. - Pressing the  key in the lower limit comparison value setting mode decreases the lower limit comparison value in the SV display window. - In operation mode,  key is pressed for more than 1 second, the current measured value is forcibly corrected and stored automatically in the parameter ZERO. (However, when parameter K – ZO is selected as 'ON') - Pressing the  key in the maximum value display mode resets the maximum and minimum values. - Pressing the  key in the minimum value display mode resets the maximum and minimum values.
PEAK/UP 	- When the  key is pressed in the operation mode, the PV display window changes to the maximum value display mode. - When the  key is pressed in the maximum value display mode, the PV display window changes to the minimum value display mode.  key is pressed in the minimum value display mode, PV display window is converted to operation mode. - Pressing the  key in the upper limit comparison value setting mode increases the upper limit comparison value of the SV display window. - Pressing the  key in the lower limit comparison value setting mode increases the lower limit comparison value of the SV display window. - If parameter D.TMR is '0', there is no display conversion between PV display window's maximum value display mode and minimum value display mode

Connection diagram

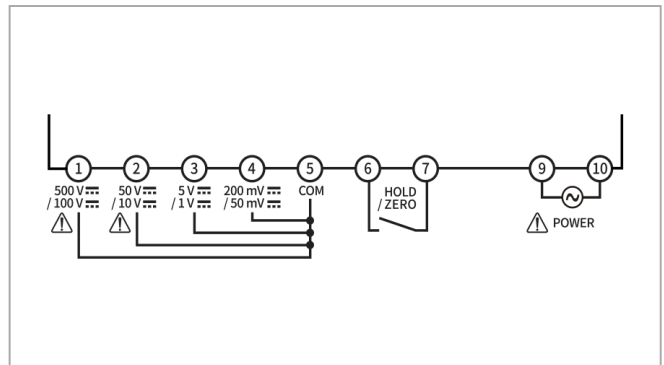
■ LM3 connection diagram

-  : Alternating Current (AC)
-  : Direct Current (DC)

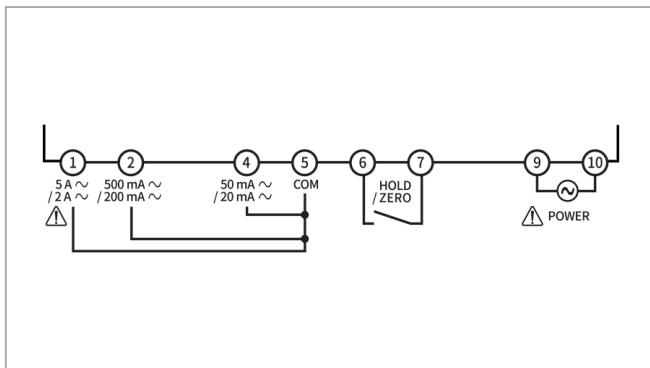
■ LM3-4AV-N-A



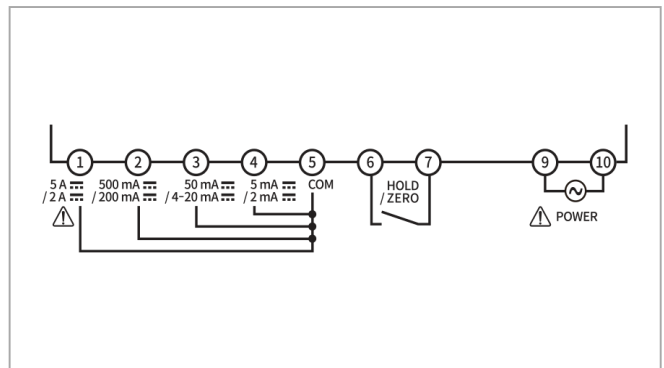
■ LM3-4DV-N-A



■ LM3-4AA-N-A



■ LM3-4DA-N-A

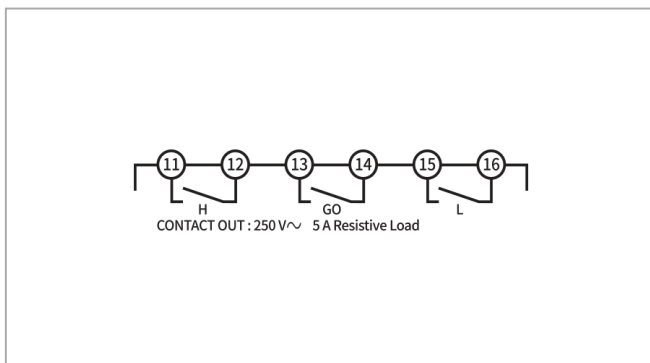


■ LM3 option output connection diagram

- There is no output option for indicator only.

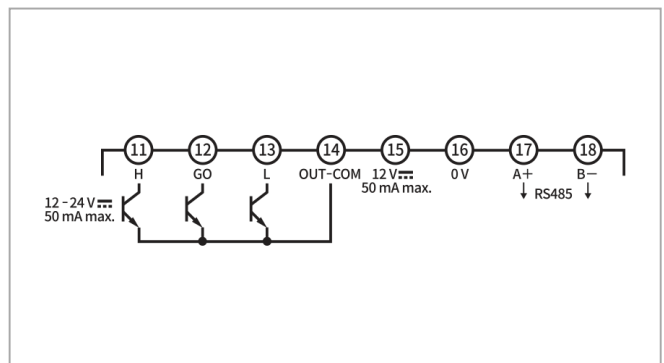
■ LM3 - 4AV / 4AA / 4DV / 4DA - 3R - A

- 3-stage contact output



■ LM3 - 4AV / 4AA / 4DV / 4DA - 3NC- A

- 3-stage NPN output + RS485 output

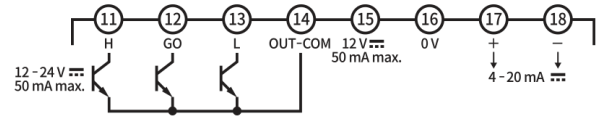
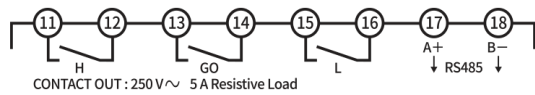


■ LM3 - 4AV / 4AA / 4DV / 4DA - 3RC- A

- 3-stage contact output + RS485 output

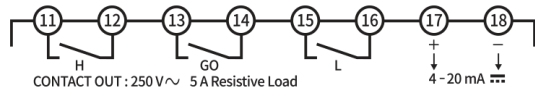
■ LM3 - 4AV / 4AA / 4DV / 4DA - 3NT- A

- 3-stage NPN output + 4 - 20 mA 



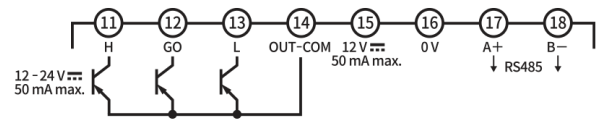
■ LM3 - 4AV / 4AA / 4DV / 4DA - 3RT- A

- 3-stage contact output + 4 - 20 mA 



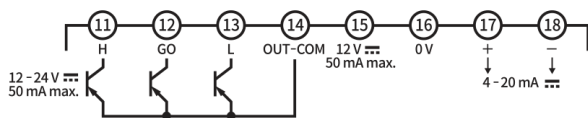
■ LM3 - 4AV / 4AA / 4DV / 4DA - 3PC- A

- 3-stage PNP output + RS485 output



■ LM3 - 4AV / 4AA / 4DV / 4DA - 3PT- A

- 3-stage PNP output + 4 - 20 mA 

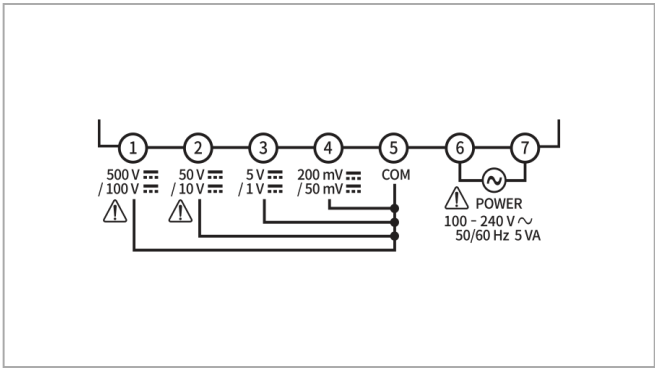
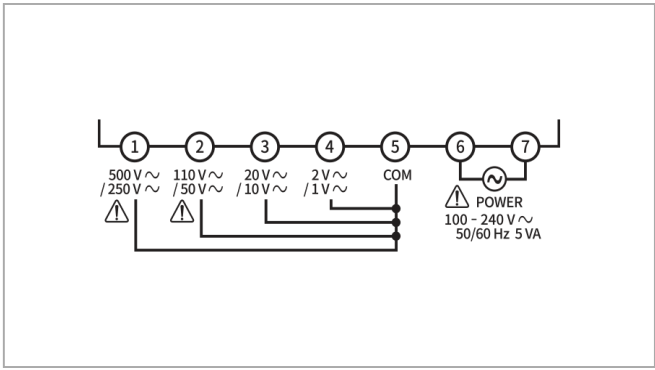


■ LM6 connection diagram

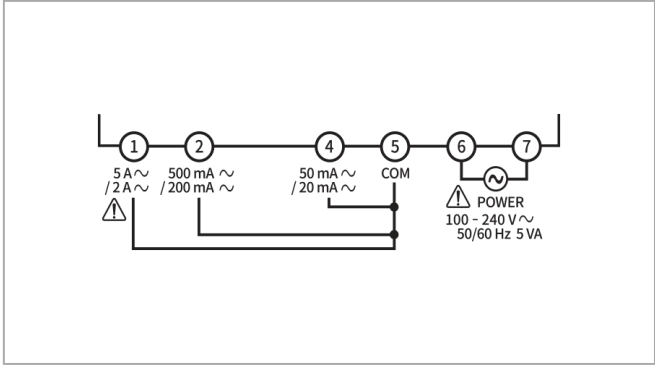
-  : Alternating Current (AC)
-  : Direct Current (DC)

■ LM6-4AV-N-A

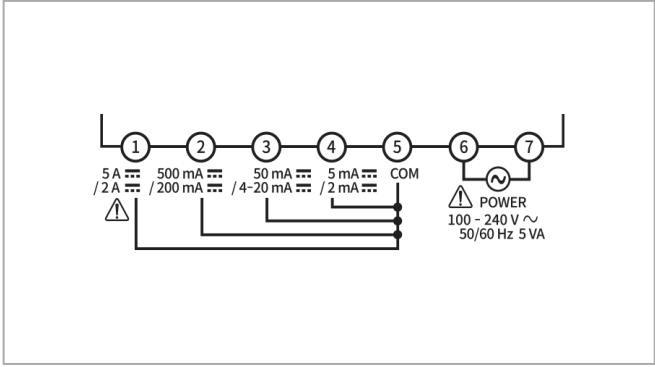
■ LM6-4DV-N-A



■ LM6-4AA-N-A



■ LM6-4DA-N-A

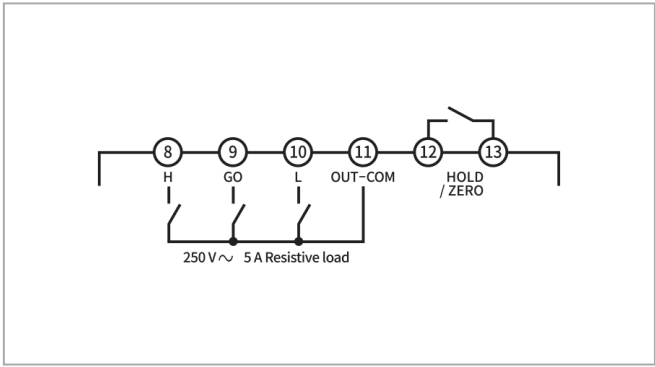


■ LM6 option output connection diagram

- Non only (Indication option output)

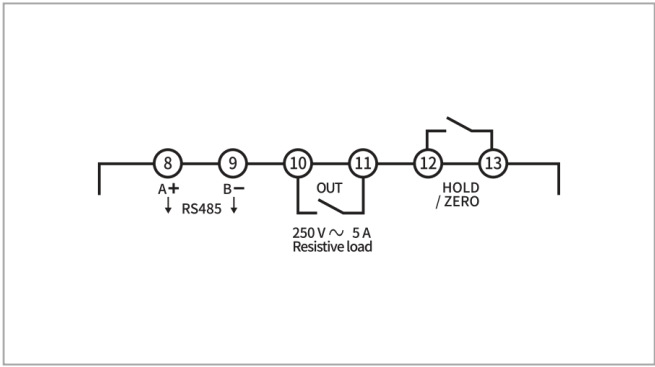
■ LM6 - 4AV / 4AA / 4DV / 4DA - 3R- A

- 3-stage contact output



■ LM6 - 4AV / 4AA / 4DV / 4DA - RC - A

- 1-stage contact output + RS485 output

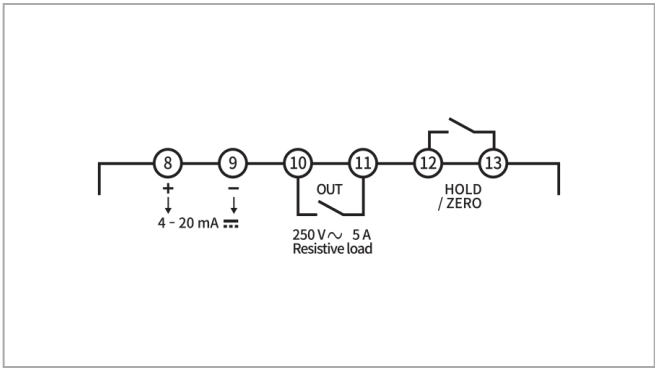
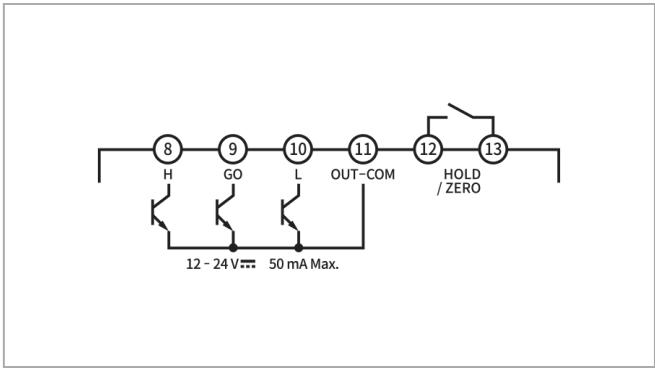


■ LM6 - 4AV / 4AA / 4DV / 4DA - 3N - A

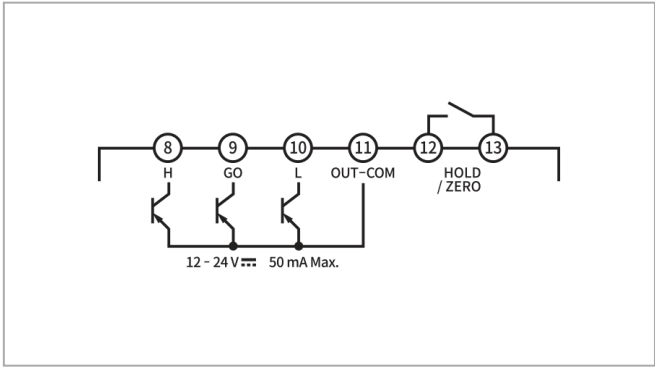
- 3-stage NPN output

■ LM6 - 4AV / 4AA / 4DV / 4DA - RT - A

- 1-stage contact output + 4 - 20 mA

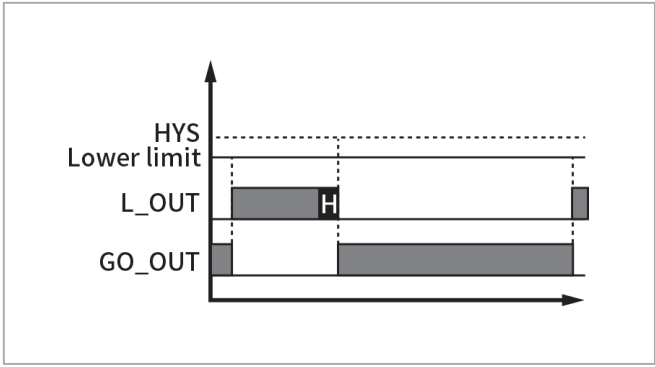


■ **LM6 - 4AV / 4AA / 4DV / 4DA - 3P - A**
 - (3-stage PNP output)

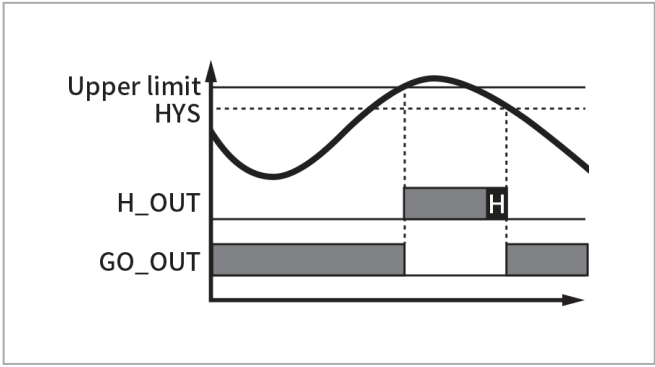


■ **Output mode**

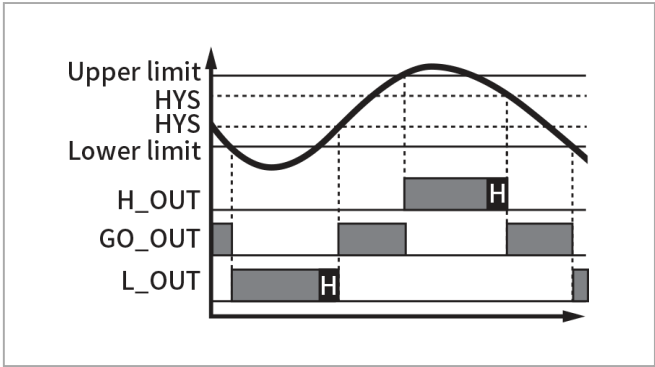
■ **LO mode**



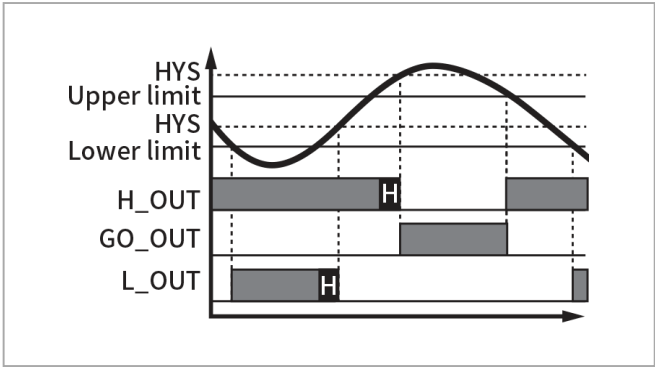
■ **HI mode**



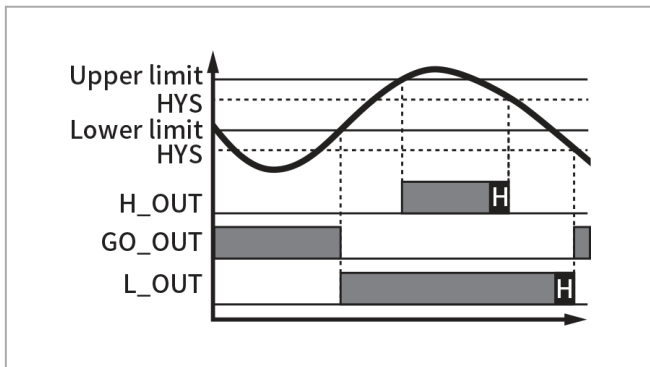
■ **LH mode**



■ **LL mode**



▪ HH mode



▪ LD mode

