

LP series

LCD display Multi pulse meter

www.npower.com.vn

Tài liệu được tổng hợp bởi đội ngũ kỹ thuật của **NPOWER**

Bản quyền nội dung thuộc về công ty **Hanyoung Nux**

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- Improved visibility with the wide viewing angle LCD and white display
- High-speed pulse measurement (50 KHz)
- IP66 degree of protection



Specifications

Model		LP3	LP6
Power Supply Voltage		100 - 240 V a.c. 50/60 Hz (Voltage fluctuation rate : $\pm 10\%$)	
Power consumption		- LP3-5ANN : Max. 9 VA - LP3-5A3RN : Max. 11 VA - LP3-5A5RN : Max. 11 VA - LP3-5A5NC/5A5PC : Max. 10 VA - LP3-5A5NT/5A5PT : Max. 12 VA	- LP6-5ANN : Max. 8 VA - LP6-5A5NN/5A5PN : Max. 9 VA - LP6-5A3RN : Max. 9 VA - LP6-5ANC : Max. 9 VA - LP6-5ANT : Max. 11 VA
Display		Negative-LCD 4 rows 2 columns PV (white) SV (green)	
Character size		PV (14.5 mm) SV (10.0 mm)	PV (10.5 mm) SV (6.7 mm)
Input Signal		Non-contact (Max. 50 KHz, ON/OFF pulse width Min. 10 us) Contact (Max. 30 Hz ON/OFF pulse width Min. 16.6 ms)	
Input	Voltage	[H] level (4.5 - 24 V d.c.) [L] level (0 - 1 V d.c.) Input impedance (4.5 k Ω)	
	Non-voltage	Impedance during short-circuit (Max. 300 Ω) Residual voltage (Max. 1 V) Impedance during open (Min. 100 k Ω)	
Measurement range		F1, F2, F10, F11, F12, F13 : 0.0005Hz ~ 50KHz F3, F4, F5, F6 : 0.01s ~ 3200s F7, F8, F9 : 0 ~ 99999	
Measurement accuracy		F1, F2, F10, F11, F12, F13 : F.S. $\pm 0.05\%$ rdg ± 1 digit F3, F4, F5, F6 : F.S. $\pm 0.01\%$ rdg ± 1 digit	
External power supply		12 V d.c. $\pm 10\%$ 100 mA	
Display cycle		0.05 s / 0.5 s / 1 sec / 2 sec / 4 sec / 8 sec	
Display range		-99999 ~ 99999	
Power outagecompensation		Approx. 10 years (non-volatile EEPROM only)	
Control output	3-stage	H, L - contact point (SPDT) GO - contact point (SPST)	H, GO, L - contact point (SPST)
	5-stage	HH, H, GO, L, LL - contact point (SPST) or, Non-contact (NPN or PNP open collector) *contact point (shared HH/H-COM output and shared LL/L-COM output)	HH, H, GO, L, LL - Non-contact (NPN or PNP open collector)
	capacity	NO contact (250 V a.c. 5A resistance load) NC contact (250 V a.c. 2A resistance load) Non-contact (12 - 24 V d.c. 50 mA or less)	Contact (250 V a.c. 5A resistance load) Non-contact (12 - 24 V d.c. 50 mA or less)
Relay life cycle	Electrical	Over 100,000 times (250 V a.c. 2A)	Over 100,000 times (250 V a.c. 5A)
	Mechanical	More than 10 million times	More than 5 million times
PV transmission output		4 - 20 mA d.c. Load resistance 600 Ω or less (response time 800 ms or less)	
RS485 communication output		Communication protocol - Modbus-RTU Communication method - RS485 (2-wire half duplex) Communication speed - 2400 / 4800 / 9600 / 19200 / 38400 bps	
Vibration durability		10 - 55Hz double amplitude 0.75 mm X, Y, Z each direction, 2 hr	

Insulation resistance	Min. 100 MΩ (500 V d.c.), conductive part terminal - Non-conductive metal	
Dielectric strength	2,000 V a.c. 60 Hz for 1 minute (between each conductive terminal)	
Noise immunity	±2000 V (pulse width 1 μs, square-wave noise by noise simulator is applied among the power terminals)	
Ambient temperature	-10 ~ 50 °C	
Storage temperature	-20 ~ 60 °C	
Ambient humidity	35 ~ 85 % R.H.	
protection structure	■IP66 (front) ■Terminal block protection cover applied	
Certification		
Weight (excluding box)	150 g	108 g

■ Suffix code

Model	Code					Content
LP	☐ -	☐	☐	☐	☐	LCD Multi Pulse Meter
Appearance	3					96 (W) x 48 (H) mm
	6					72(W) x 36(H) mm
Displayable Digit	5					5 digits
Power supply voltage		A				100 - 240 V a.c. 50/60Hz
Setting stages	LP3	N	N			Instruction only, no output, no options
		3R	N			3-stage contact output, no options
		5R	N			5-stage contact output, no options
		5N	C			5-stage NPN open collector output + RS485 output (MODBUS-RTU)
		5N	T			5-stage NPN open collector output + transmission output (4-20 mA d.c.)
		5P	C			5-stage PNP open collector output + RS485 output (MODBUS-RTU)
		5P	T			5-stage PNP open collector output + transmission output (4-20 mA d.c.)
	LP6	N	N			Instruction only, no output, no options
		N	C			Instruction only, no output, RS485 output (MODBUS-RTU)
		N	T			Instruction only, no output, transmission output (4 - 20 mA d.c.)
		3R	N			3-stage contact output, no options
		5N	N			5-stage NPN open collector output, no options
		5P	N			5-stage PNP open collector output, no options

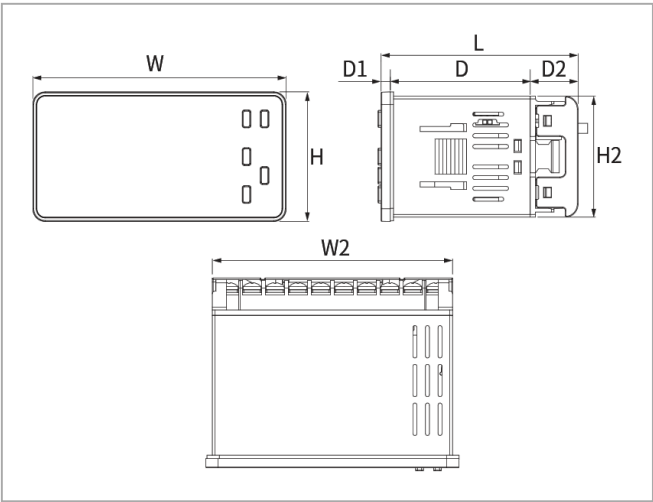
■ Product composition

Model	LP3	LP6
Composition	LP3-5ANN, LP3-5A3RN, LP3-5A5RN, LP3-5A5NC, LP3-5A5PC, LP3-5A5NT, LP3-5A5PT	LP6-5ANN, LP6-5ANC, LP6-5ANT, LP6-5A3RN, LP6-5A5NN, LP6-5A5PN

Dimensions and panel cutout

+ Dimensions

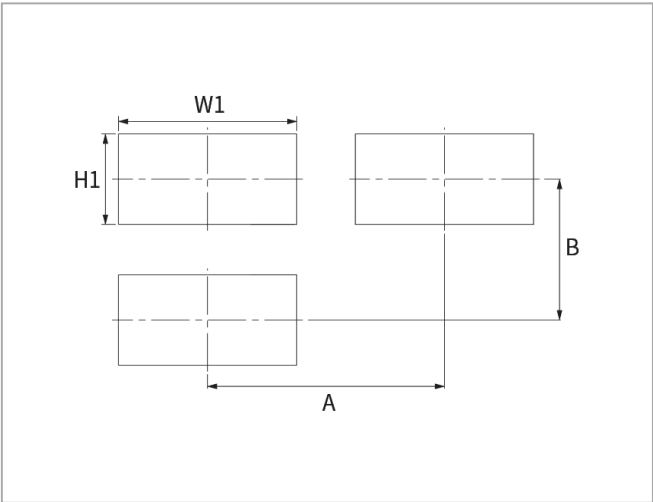
[Unit: mm]



Division	Mark	LP3	LP6
Product appearance (including protective cover)	W	96.0	72.0
	H	48.0	36.0
	D	53	66
	D1	3.5	3.5
	D2	18.1	18.1
	L	74.6	87.6
	W2	91.0	66.0
	H2	44.8	30.5

+ Panel cutout

[Unit: mm]

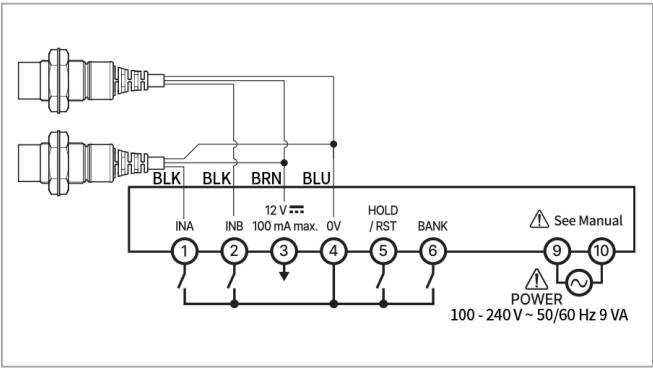


Division	Mark	LP3	LP6
Panel processing	W1	91.5	66.5
	H1	45.5	32.0
	A	121.5	96.5
	B	70.5	57.0

Connection diagrams

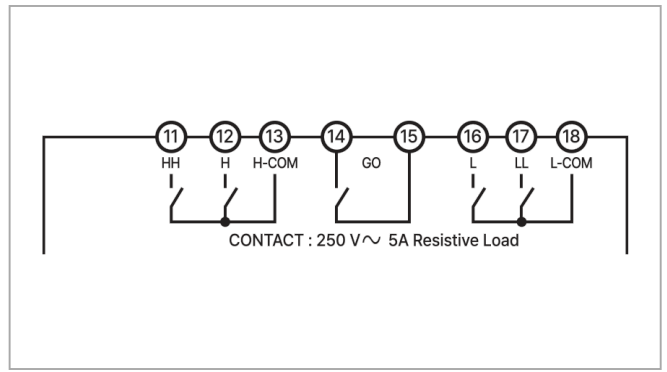
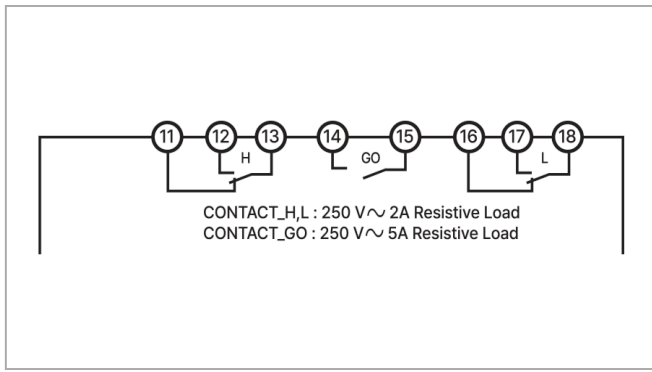
+ LP3

- LP3-5ANN (Instruction only)

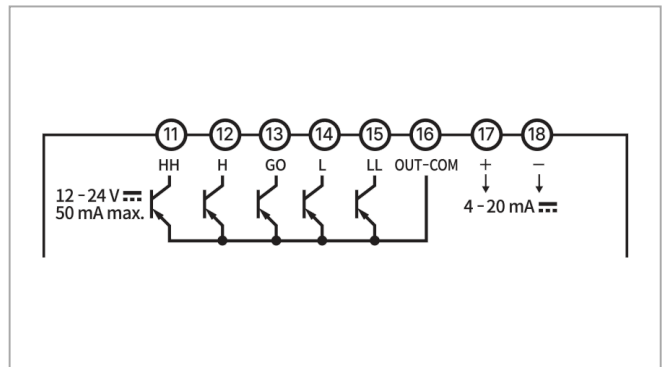
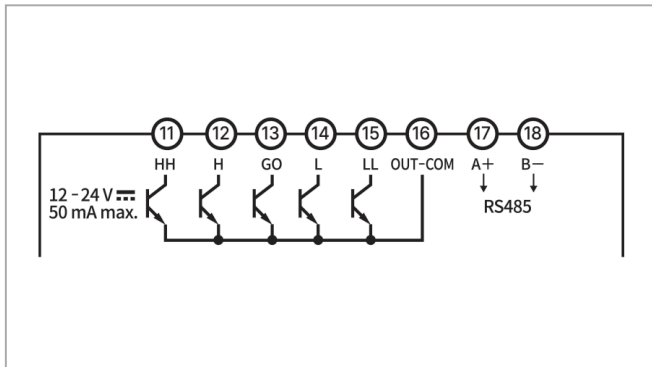


- LP3-5A3RN (3-stage contact output)

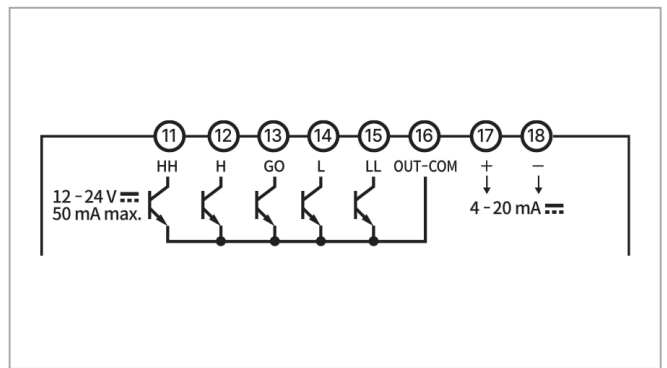
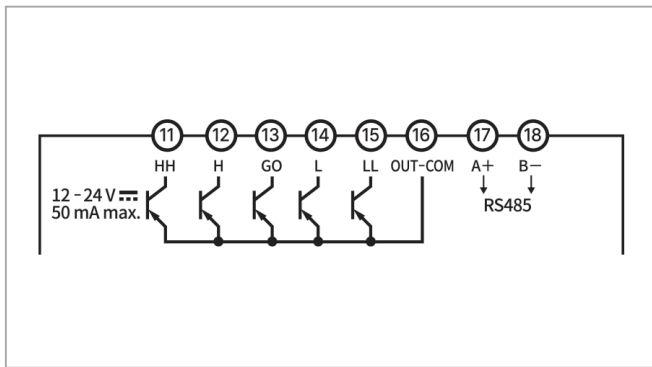
- LP3-5A5RN (5-stage contact output)



- LP3-5A5NC (5-stage NPN open collector output + RS485 output) - LP3-5A5PT (5-stage PNP open collector output + transmission output)

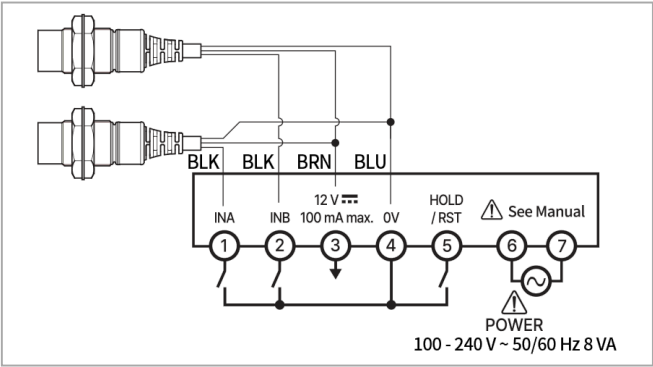


- LP3-5A5PC (5-stage PNP open collector output + RS485 output) - LP3-5A5NT (5-stage NPN open collector output + transmission output)

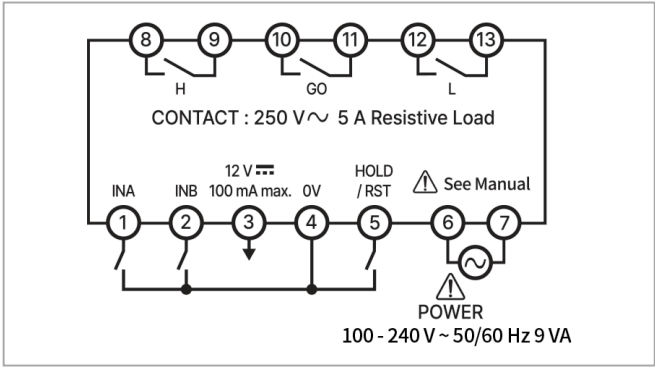


+ LP6

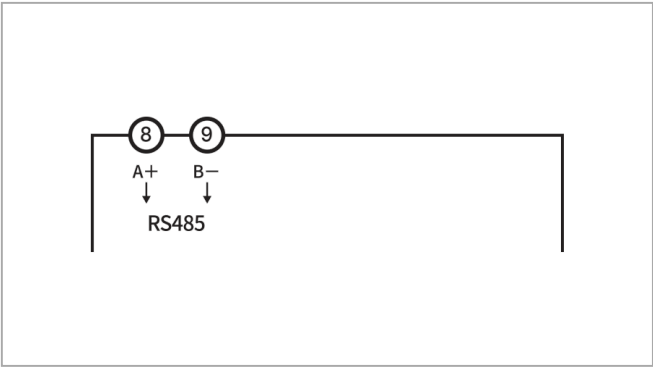
- LP6-5ANN (Instruction only)



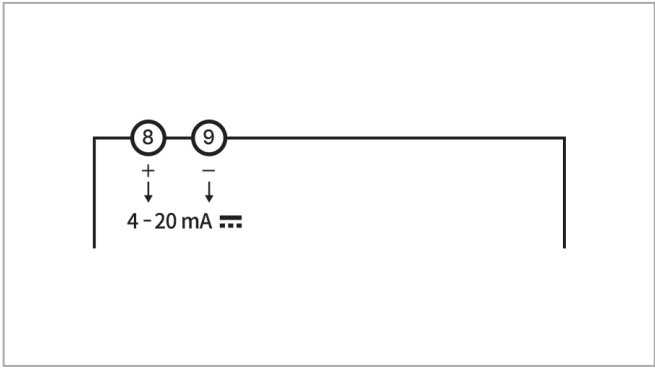
- LP6-5A3RN (3-stage contact output)



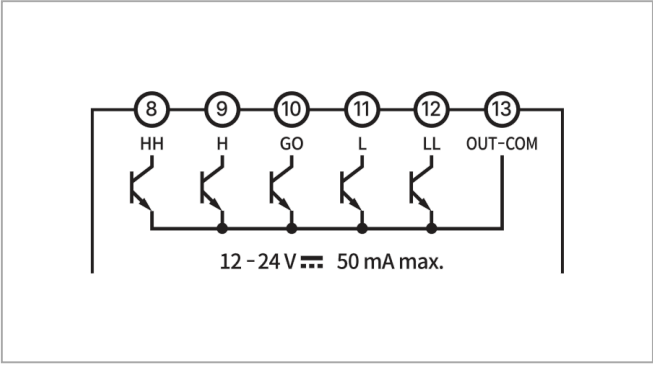
- LP6-5ANC (RS485 output)



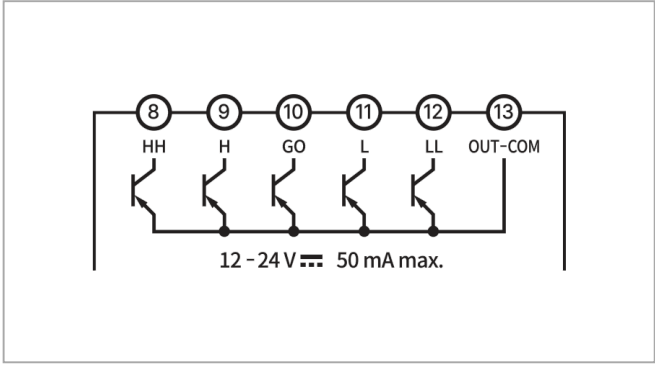
- LP6-5ANT (transmission output)



- LP6-5A5NN (5-stage NPN open collector output)

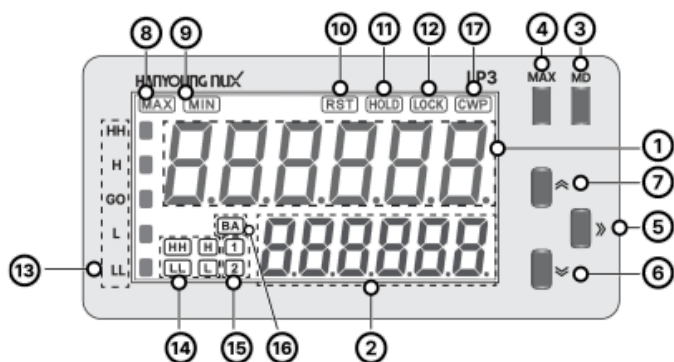


- LP6-5A5PN (5-stage PNP open collector output)

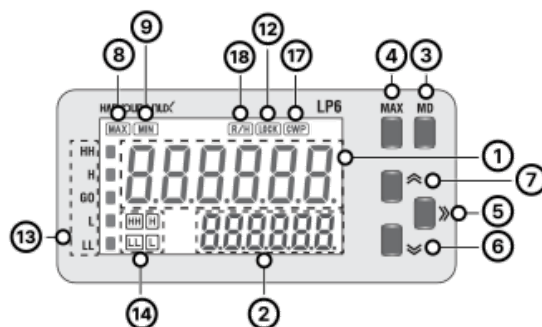


Part names and functions

■ LP3



■ LP6



NO	NAME	Descriptions
①	PV display	Displays measured value, maximum value, minimum value, parameter setting item
②	SV display	Displays HH / H / L / LL comparative value
③	MODE KEY	- Enters and exits function setting mode (stay ON for more than 3 seconds) - Auto save function set value during termination - Used to switch the SV display in operation mode (HH comparative value / H comparative value / L comparative value / LL comparative value) - Used to switch the SV display in D output mode (comparative value / H deviation value / L deviation value)
④	MAX KEY	Used to switch the PV display in operation mode (measured value / max. measured value / min. measured value)
⑤	Shift KEY	- Enters comparative value setting mode and shifts the comparative value digits in operation mode - Enters comparative value and deviation value setting mode and shifts the comparative value/ deviation value digits in D output mode
⑥	DOWN KEY	- Enters comparative value setting mode and shifts the comparative value digits in operation mode - Enters comparative value and deviation value setting mode and shifts the comparative value/ deviation value digits in D output mode
⑦	UP KEY	- Increases comparative value in function setting mode and comparative value setting mode - Used to switch BANK number in operation mode (hold ON state for at least 1 second).(LP6 not supported) when if BANK switch is set to 'KEY' in function setting mode
⑧	Max. indicator	Illuminates when max. measured value is displayed to PV display in operation mode
⑨	Min. indicator	Illuminates when min. measured value is displayed to PV display in operation mode
⑩	RESET input indicator	Illuminates when external RESET signal is applied (illuminates only in F9) - (LP6 lights up 'No. 18')
⑪	HOLD input indicator	Illuminates when external HOLD signal is applied - (LP6 lights up 'No. 18')
⑫	LOCK setting indicator	Illuminates when LOCK enables in function setting mode
⑬	Comparison output status indicator	- Among HH/H/L/LL outputs, the indicator light for the output that is activated turns on. - If there is no output in operation, the GO output indicator lights up.
⑭	SV display status indicator	When switching the SV display to HH comparison value, H comparison value, L comparison value, and LL comparison value in operation mode.The indicator light for the selected HH/H/L/LL comparison value lights up.
⑮	BANK number indicator	When selecting BANK_1 or BANK_2, the indicator light for the selected BANK number turns on - (LP6 not supported)
⑯	BANK indicator	When BANK is set to use, the indicator light turns on - (LP6 not supported)
⑰	Communication write prohibition indicator	Lights up when communication write prohibition is set.

Selection Guide

Dimensions	Display digits	Power voltage	Output options	Model
LP3 [3]	5 digits (-99999 ~ 99999) [5]	100 - 240 V a.c. 50/60 Hz [A]	Display only / Output none / no options [N], [N]	LP3-5ANN
			3-pole contact output / no options [3R], [N]	LP3-5A3RN
			5-pole contact output / no options [5R], [N]	LP3-5A5RN
			5-stage NPN open-collector output + RS485 output (MODBUS-RTU) [5N], [C]	LP3-5A5NC
			5-stage NPN open-collector output + transmission output (4-20 mA d.c.) [5N], [T]	LP3-5A5NT
			5-stage PNP open-collector output + RS485 output (MODBUS-RTU) [5P], [C]	LP3-5A5PC
			5-stage PNP open-collector output + transmission output (4-20mA d.c.) [5P], [T]	LP3-5A5PT
LP6 [6]			Display only / Output none / no options [N], [N]	LP6-5ANN
			Display only / Output none / RS485 output (MODBUS-RTU) [N], [C]	LP6-5ANC
			Display only / Output none / transmission output (4-20 mA d.c.) [N], [T]	LP6-5ANT
			3-pole contact output / no options [3R], [N]	LP6-5A3RN
			5-stage NPN open-collector output / no options [5N], [N]	LP6-5A5NN
			5-stage PNP open-collector output / no options [5P], [N]	LP6-5A5PN

