DIN W48×H24mm, Indication only, LCD pulse meter(RPM, RPS, Hz)

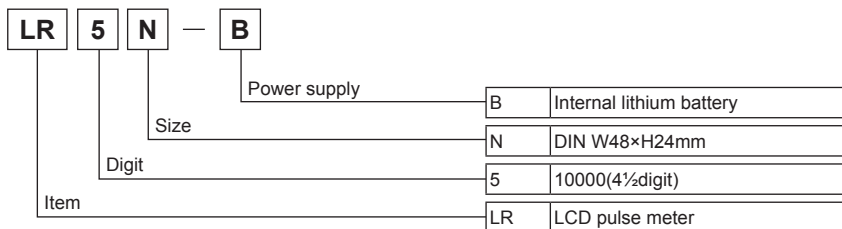## ◼ Features

- **Upgraded version of LR7N series**
- Easy of 1 pulse input method per 1 revolution
- Display up to 10000RPM
- No need power supply by internal battery
- Protection structure IP66(Front panel only)
- Displays RPM, RPS of rotator
- Displays AC line frequency

⚠ **Please read "Caution for your safety" in operation manual before using.**

◼ Ordering information

| LR | 5 | N | — | B |

Power supply	
B	Internal lithium battery
Size	
N	DIN W48×H24mm
Digit	
5	10000(4½digit)
Item	
LR	LCD pulse meter

◼ Specifications

Model	LR5N-B			
Input method	No-voltage input		Voltage input 1	Voltage input 2
Input signal level	Short-residual voltage : Max. 0.5V Max. short-circuit impedance : Max. 10kΩ Max. open-circuit impedance : Min. 500kΩ	DC	High input voltage range : 4.5-30VDC Low input voltage range : 0-2VDC	Voltage: 30-240VAC
		AC	Voltage:3-30VAC	
Power	No-power [includes lithium battery(replaceable)]			
Battery life cycle	Over 3 years at 20℃(replaceable)			
Dispaly method	LCD Zero blanking method(character height:8.7mm)			
Display digits	5 digit			
Display range and Display accuracy	Display range		Display accuracy	
	RPM	1 to 10000RPM	1 to 5000RPM: F.S.±0.05%±1digit	
			5001 to 10000RPM: F.S.±0.1%±1digit	
	0.1RPM	0.1 to 1000.0RPM	F.S±0.05%±1digit	
	Hz	1 to 1000Hz	F.S±0.1%±1digit	
	0.1Hz	0.1 to 100.0Hz		
	RPS	1 to 1000RPS		
HOLD function	Includes(external HOLD function)			
Insulation resistance	100MΩ (at 500VDC megger)			
Dielectric strength	2,000VAC 50/60Hz for 1 min. (cutoff current=10mA)			
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz(for 1min.) in each X, Y, Z direction for 1 hours		
	Malfunction	0.3mm amplitude at frequency of 10 to 55Hz(for 1min.) in each X, Y, Z direction for 10 min.		
Shock	Mechanical	300m/s²(approx. 30G) in X, Y, Z directions for 3 times		
	Malfunction	100m/s²(approx. 10G) in X, Y, Z directions for 3 times		
Envion-ment	Ambient temperature	-10 to 55℃, Storage: -25 to 65℃		
	Ambient humidity	35 to 85%RH, Storage: 35 to 85%RH		
Protection	IP66(when using waterproof rubber for front panel), Terminal cover(finger protector)			
Weight[※1]	Approx. 91.5g (approx. 59g)			

※1: The weight is with packaging and the weight in parentheses is only unit weight.
※Environment resistance is rated at no freezing or condensation.

LR5N-B

■ Connections

IN1	COM	HOLD	IN2	IN3
1	2	3	4	5

4.5-30VDC

3-30VAC

30-240VAC ⚠

Insulated transformer

30-240VAC ⚠
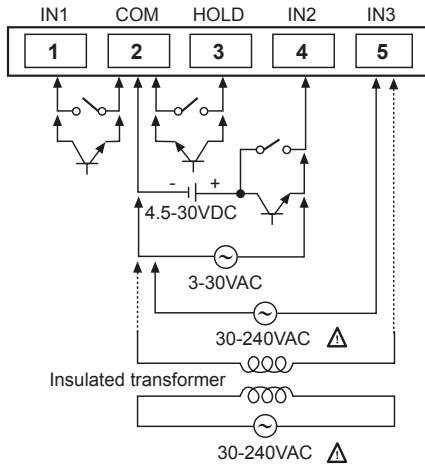
※Please use reliable contacts enough to flow 5μA of current when using input signal or reset signal as a contact.
※IN1 - No-voltage input
　IN2 - Voltage input
　　• DC voltage input
　　• AC voltage input : Display AC frequency.
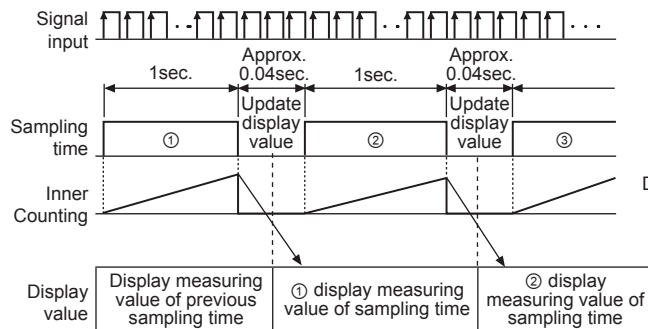　IN3 - AC voltage input : Display AC frequency.
※**Choose one among IN1, IN2 and IN3 to use.**
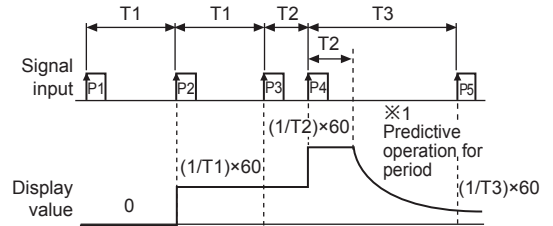
⚠**Caution for IN3 input**
: If apply high voltage over 50VAC, it may cause an electric shock. Insulated transformer whose turn ratio is 1:1 must be installed, or countermeasures must be provided.

■ Operation charts

● **Setting RPS, Hz**

Signal input

Sampling time
① Update display value ② ③

Inner Counting

Display value

Display measuring value of previous sampling time	① display measuring value of sampling time	② display measuring value of sampling time

1sec. Approx. 0.04sec. 1sec. Approx. 0.04sec.

● **Setting RPM 0.1, RPM 0.1Hz**

Signal input

Display value

$(1/T1)×60$　$(1/T2)×60$　※1 Predictive operation for period　$(1/T3)×60$
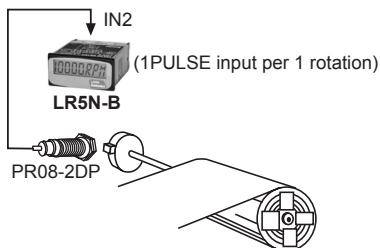
T1　T1　T2　T3　T2

P1　P2　P3　P4　P5

0

※1: It implements Predictive operation for period without Auto zero time setting function(If there is no pulse input within setting time, it displays the value as zero forcibly). If there is any input signal within certain time(T2), CPU considers input to be supplied, display value is decreased continuously.
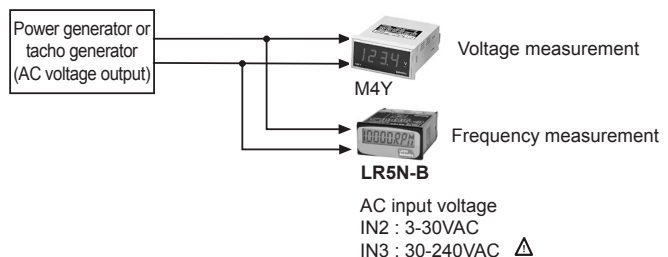
■ Operation mode (frequency/revolution)

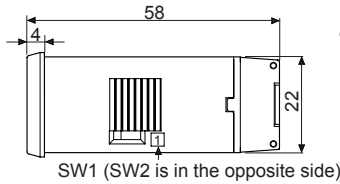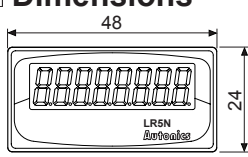◎ **Frequency (Hz, 0.1Hz) = f, Revolution(RPM, 0.1RPM)= f × 60, Revolution (RPS)= f**

● **Revolution**

→ IN2

(1PULSE input per 1 rotation)

LR5N-B

PR08-2DP

● **AC frequency**

Power generator or tacho generator (AC voltage output)

M4Y — Voltage measurement

LR5N-B — Frequency measurement

AC input voltage
IN2 : 3-30VAC
IN3 : 30-240VAC ⚠

● **Display value and unit**

Display	Frequency		Revolution		
Unit	Hz	0.1Hz	RPM	0.1RPM	RPS(factory default)

Compact LCD Pulse Meter

(unit: mm)

◼ Dimensions

48
24
LR5N
Autonics

4 | 58
22
SW1 (SW2 is in the opposite side)

● **Bracket**

42
28.8
22
36.3
45.2
48.6
3.5
11.6
7.9
32.4
26.4
10

● **Panel cut-out**

Min. 55
Min. 37
$22.2^{+0.3}_{0}$
$45^{+0.6}_{0}$
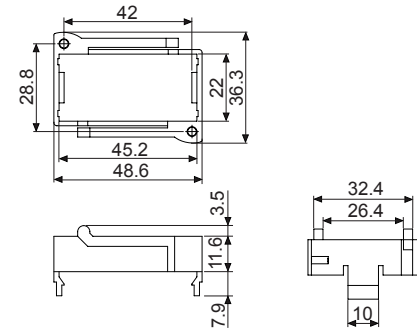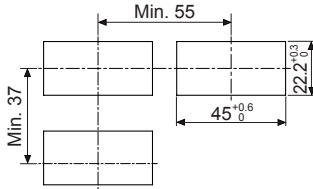
◼ Input connections
● **Standard input sensor**
  : NPN open collector output type

Sensor
Brown
+ 5-24 VDC −
Black
SIG. INPUT ❶
Blue
0V ❷

LR5N-B
+V
560kΩ
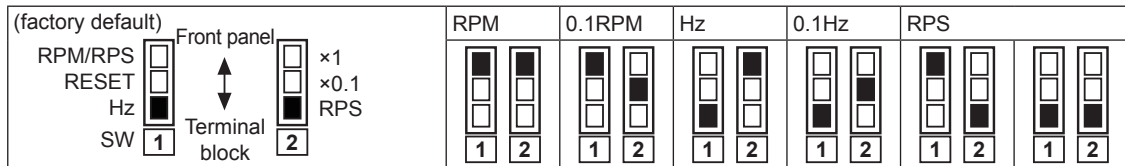1.2kΩ   1.2kΩ
Main circuit
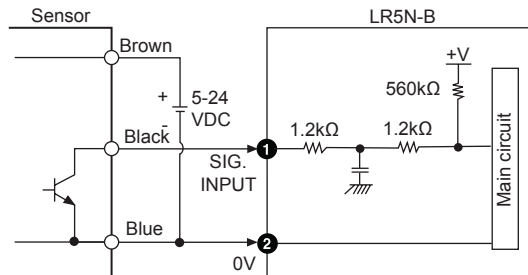
◼ Function description

● **RESET**
It initializes an unit and front LCD display. There are not indicated when set switch1 as RESET.

● **HOLD**
It stops display value by short circuit HOLD terminal when it is hard to read the value because of frequent input changes.

◼ Display range selection

(factory default)		RPM	0.1RPM	Hz	0.1Hz	RPS	
RPM/RPS	×1						
RESET	×0.1						
Hz	RPS						
SW 1	2	1 2	1 2	1 2	1 2	1 2	1 2

Front panel
Terminal block

① Select one among ×1, ×0.1 and RPS by SW2.
② Shift SW1 to RESET.
③ Select one again between RPM/RPS and Hz by SW1.
※If set display range and front display LCD unit are not same, shift SW1 to RESET and select RPM/RPS or Hz.

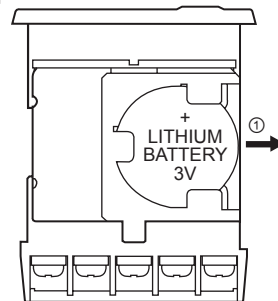## ◼ Case detachment and Battery replacement
● **Case detachment**

①
③
②
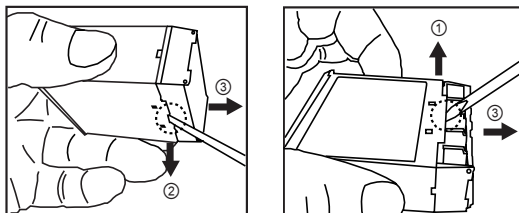
※Hold up Lock part toward ①, ② of the product with the tool and pull toward ③, the case is detached.
⚠ Please be careful of the injury caused by tools.

● **Battery replacement**

+ LITHIUM BATTERY 3V
①

1) Detach the case.
2) Push the battery and detach toward ①.
3) Insert new battery with correct alignment of polarity pushing toward opposite of ①.
※Battery is sold separately.
※Do not burn up or disassemble the lithium battery.