

Product description-

CM1-RL series provides a simple economic programmable speed/velocity table, it 20.0mm, 5-digit LED display, press the key to set the display range and its anti-jamming design and reliable quality, simple installation, you can meet the needs of general measurement of speed/velocity.

This instrument also has 2 group relay outputs, 1 analog output, or 1 groups RS485 (Modbus RTU mode) communication features three a (More features please refer

to page description). Operation press the inner design, the more human-no action can be avoided, especially suitable for all kinds of machinery used.



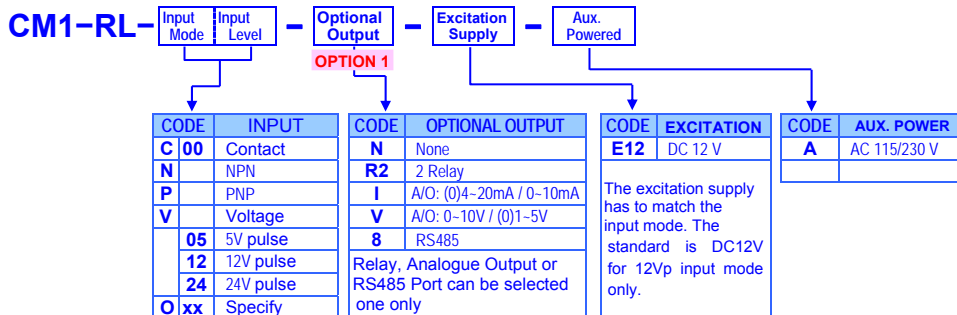
Feature :

- Free input frequency of 1Hz~6KHz, does not need to specify the frequency range input mode (NPN, PNP, and forth.) and pulse dial switch level by means of direct switch
- Purchase 2 to attach three to choose a group of relay outputs, 1 analog output, or 1 groups RS485 (Modbus RTU mode) communication
- Operation press the inner (in front), according to field requirements set display scope; Terminal straight into design, bad problem-free installation depth only 72mm

Application :

- Tie in with the adjacent switches, photoelectric switch speed/wire speed display, control and RS485 data collection

ORDERING INFORMATION



TECHNICAL SPECIFICATION

Input		
Input Frequency	Input Mode	Input Level
1Hz ~ 50 Hz	Mech. Contact	
1Hz ~ 50 Hz 1Hz ~ 6.00KHz	NPN	High Level: over 2/3 of input level Low Level: under 1/3 of input level
	PNP	
	Voltage Pulse	
Input Mode (NPN, PNP, Contact) & Level (5Vp, 12Vp, 24Vp) changeable by dip switch of rear terminal block.		

Calibration: Doesn't need calibration
A/D conversion: Pulse direct-reading, none A/D conversion
Accuracy: ± 0.1% of FS ± 1C
Sampling time: 0.1~99 sec
Response time: 15 times/sec.(≥15Hz · when RuG = "1")
 F times/sec.($\leq 15\text{Hz}$ · when RuG = "1")

Display & Functions

LED: Numeric: 5 digits, 0.8"(20.0mm)H high-brightness LED
Display range: 0~99999
Display type: RPM / RPS / Linear line speed / Frequency programmable
D.P. of set point: D.P. of set point auto / semi-auto / menu
 Programmable from 0 / 0.0 / 0.00 / 0.000 / 0.0000
Display unit: Line speed unit can be set M/min CM/Min Yd/Min ft/Min
Over range indication: ouFL: when input is over 110% of input range
Max / Mini recording: Maxi & Mini Value of PV storage during power on.
Low cut: LaCut: settable range -19999~19999

Reading stable Functions.

Average: RuG : settable range 1~99 times
Digital filter: dFL : settable range 1~99 times

Control Functions.(option)

Realy: 2 group_Realy
 2 grop FORM-C, 5A/230Vac, 10A/115V
Relay energized mode: Hi / Lo / Hi.HLd / Lo.HLd model
Energizing functions: Start delay / Energized & De-energized delay / Hysteresis /Energized Latch
 [r45b] Start band: 0~9999 counts
 [r45d] Start delay time: 0:00.0~9(min):59.9(sec)
 [r46d] Energized delay time: 0.00.0~9(min):59.9(sec)
 [r47d] De-energized delay time: 0.00.0~9(min):59.9(sec)
 [r48Y] Hysteresis: 0~5000 counts

Analogue output(option)

Accuracy: $\leq \pm 0.2\%$ of F.S.; 12 bits DA converter
Ripple: $\leq \pm 0.1\%$ of F.S.
Response time: ≤ 100 m-sec. (10~90% input)
Isolation: AC 2.0 KV between input and output

Output range:

Specify either Voltage or Current output in ordering
 Voltage: 0~5V / 0~10V / 1~5V programmable
 Current: 0~10mA / 0~20mA / 4~20mA programmable
Output capability: Voltage: 0~10V: $\geq 1000\Omega$;
 Current: 4(0)~20mA: $\leq 6000\Omega$ max

Functions:

[RaL5] output range high:
 Settable range: -1999~9999
 [RaH5] output range Low:
 Settable range: -1999~9999

Digital fine adjust:

[RaPr0] Settable range: 0~99999
 [RaSPn] Settable range: 0~99999

RS 485 Communication(option)

Protocol: Modbus RTU mode

Baud rate: 1200/2400/4800/9600/19200/38400 programmable
Data bits: 8 bits
Parity: Even, odd or none (with 1 or 2 stop bit) programmable
Address: 1 ~ 255 programmable
Distance: 1200M max
Terminate resistor: 150Ω. at last unit.

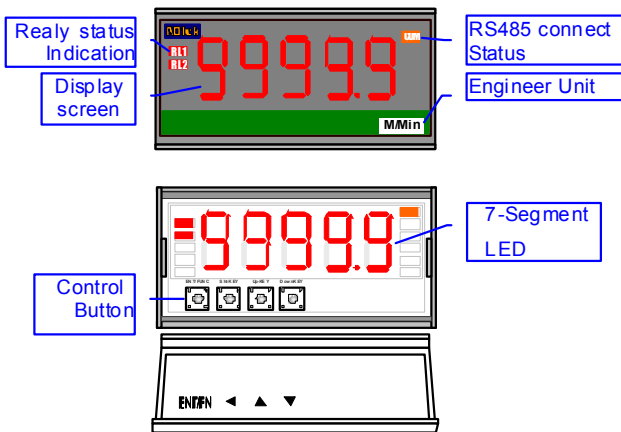
Power
Power supply: AC115/230V,50/60Hz;
Power consumption: 2.5VA maximum
Excitation supply: Excitation supply has to match the input mode / 30mA
Back up memory: EEPROM

Electrical safety
Dielectric strength: AC 2.0 KV for 1 min, Between Power / Input / Output / Case
Insulation resistance: ≥100M ohm at 500Vdc, Between Power / Input / Output
Isolation: Between Power / Input / Output
EMC: EN 55011:2002; EN 61326:2003
Safety(LVD): EN 61010-1:2001

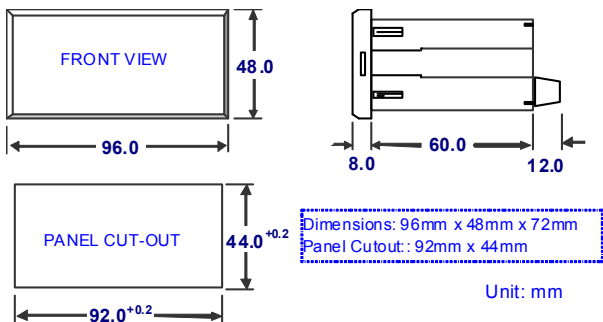
Environment
Operating temp.: 0~60 °C
Operating humidity: 20~95 %RH, Non-condensing
Temp. coefficient: ≤ 100 PPM/°C
Storage temp.: -10~70 °C
Enclosure: Front panel: IEC 549 (IP54); Housing: IP20
Vibration testing: 1~800Hz, 3.175g²/Hz

Mechanical
Dimensions: 96mm(W) x 48mm(H) x 72mm(D)
Panel cutout: 92mm(W) x 44mm(H)
Case material: ABS fire-resistance (UL 94V-0)
Mounting: Panel flush mounting
Terminal block: Plastic NYLON 66 (UL 94V-0);
 20A/300Vac, M3.5, 1.3mm²~3.5mm² (22~12AWG)
Weight: 310g

FRONT PANEL

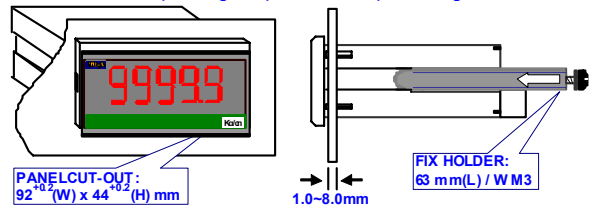


DIMENSIONS

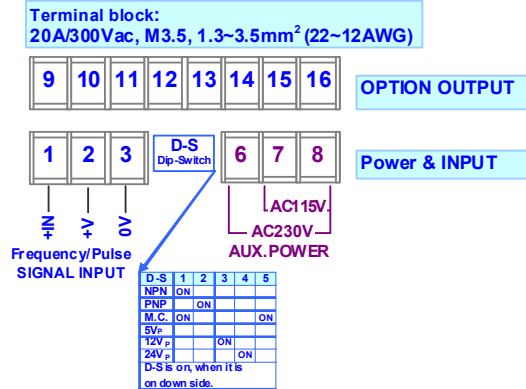


INSTALLATION

The meter should be installed in a location that does not exceed the maximum operating temperature and provides good air circulation.

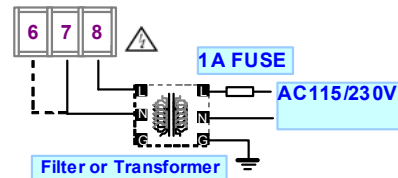


CONNECTION DIAGRAM

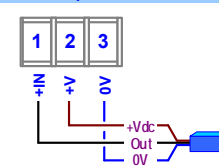


Please check the voltage of power supplied first, and then connect to the specified terminals. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker. ⚠

POWER Supply



Sensor Input connection



Please change the dip-switch on rear of meter to match the input mode and level.

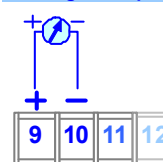
	D-S	1	2	3	4	5
NPN		ON				
PNP			ON			
Mech. Contact		ON				ON
Voltage pulse 5V _P						
Voltage pulse 12V _P				ON		
Voltage pulse 24V _P					ON	
D-S is on when it is in down site						

Output (Realy \ Analogue Output or RS485 can be selected only one)

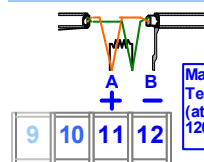
Realy Output



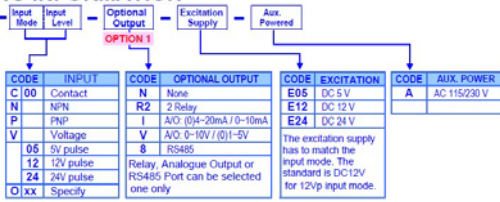
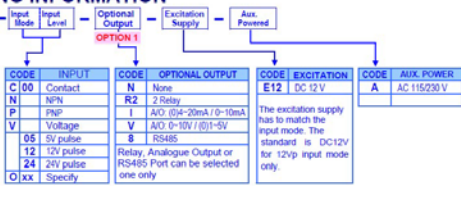
Analogue Output



RS485 Communication Port



Max. Distance: 1200M
 Terminate Resistor
 (at latest unit):
 120~300ohm/0.25W

Edit date 2011/09/26	<p style="text-align: center;">before</p> <p>■ ORDERING INFORMATION CM1-RL-</p>  <table border="1" data-bbox="335 190 454 324"> <thead> <tr> <th>CODE</th> <th>INPUT</th> </tr> </thead> <tbody> <tr><td>C 00</td><td>Contact</td></tr> <tr><td>N</td><td>NPN</td></tr> <tr><td>P</td><td>PNP</td></tr> <tr><td>V</td><td>Voltage</td></tr> <tr><td>05</td><td>5V pulse</td></tr> <tr><td>12</td><td>12V pulse</td></tr> <tr><td>24</td><td>24V pulse</td></tr> <tr><td>Oxx</td><td>Specify</td></tr> </tbody> </table> <table border="1" data-bbox="454 190 606 324"> <thead> <tr> <th>CODE</th> <th>OPTIONAL OUTPUT</th> </tr> </thead> <tbody> <tr><td>N</td><td>None</td></tr> <tr><td>R2</td><td>2 Relay</td></tr> <tr><td>I</td><td>AIO: 0-20mA / 0-10mA</td></tr> <tr><td>V</td><td>AIO: 0-10V / 0-5V</td></tr> <tr><td>S</td><td>RS485</td></tr> <tr><td>8</td><td>Relay, Analogue Output or RS485 Port can be selected one only</td></tr> </tbody> </table> <table border="1" data-bbox="606 190 726 324"> <thead> <tr> <th>CODE</th> <th>EXCITATION</th> </tr> </thead> <tbody> <tr><td>E05</td><td>DC 5 V</td></tr> <tr><td>E12</td><td>DC 12 V</td></tr> <tr><td>E24</td><td>DC 24 V</td></tr> </tbody> </table> <table border="1" data-bbox="726 190 837 324"> <thead> <tr> <th>CODE</th> <th>AUX. POWER</th> </tr> </thead> <tbody> <tr><td>A</td><td>AC 115/230 V</td></tr> </tbody> </table>	CODE	INPUT	C 00	Contact	N	NPN	P	PNP	V	Voltage	05	5V pulse	12	12V pulse	24	24V pulse	Oxx	Specify	CODE	OPTIONAL OUTPUT	N	None	R2	2 Relay	I	AIO: 0-20mA / 0-10mA	V	AIO: 0-10V / 0-5V	S	RS485	8	Relay, Analogue Output or RS485 Port can be selected one only	CODE	EXCITATION	E05	DC 5 V	E12	DC 12 V	E24	DC 24 V	CODE	AUX. POWER	A	AC 115/230 V	<p style="text-align: center;">after</p> <p>■ ORDERING INFORMATION CM1-RL-</p>  <table border="1" data-bbox="1013 190 1133 324"> <thead> <tr> <th>CODE</th> <th>INPUT</th> </tr> </thead> <tbody> <tr><td>C 00</td><td>Contact</td></tr> <tr><td>N</td><td>NPN</td></tr> <tr><td>P</td><td>PNP</td></tr> <tr><td>V</td><td>Voltage</td></tr> <tr><td>05</td><td>5V pulse</td></tr> <tr><td>12</td><td>12V pulse</td></tr> <tr><td>24</td><td>24V pulse</td></tr> <tr><td>Oxx</td><td>Specify</td></tr> </tbody> </table> <table border="1" data-bbox="1133 190 1252 324"> <thead> <tr> <th>CODE</th> <th>OPTIONAL OUTPUT</th> </tr> </thead> <tbody> <tr><td>N</td><td>None</td></tr> <tr><td>R2</td><td>2 Relay</td></tr> <tr><td>I</td><td>AIO: 0-20mA / 0-10mA</td></tr> <tr><td>V</td><td>AIO: 0-10V / 0-5V</td></tr> <tr><td>S</td><td>RS485</td></tr> <tr><td>8</td><td>Relay, Analogue Output or RS485 Port can be selected one only</td></tr> </tbody> </table> <table border="1" data-bbox="1252 190 1372 324"> <thead> <tr> <th>CODE</th> <th>EXCITATION</th> </tr> </thead> <tbody> <tr><td>E12</td><td>DC 12 V</td></tr> </tbody> </table> <table border="1" data-bbox="1372 190 1476 324"> <thead> <tr> <th>CODE</th> <th>AUX. POWER</th> </tr> </thead> <tbody> <tr><td>A</td><td>AC 115/230 V</td></tr> </tbody> </table>	CODE	INPUT	C 00	Contact	N	NPN	P	PNP	V	Voltage	05	5V pulse	12	12V pulse	24	24V pulse	Oxx	Specify	CODE	OPTIONAL OUTPUT	N	None	R2	2 Relay	I	AIO: 0-20mA / 0-10mA	V	AIO: 0-10V / 0-5V	S	RS485	8	Relay, Analogue Output or RS485 Port can be selected one only	CODE	EXCITATION	E12	DC 12 V	CODE	AUX. POWER	A	AC 115/230 V
CODE	INPUT																																																																																					
C 00	Contact																																																																																					
N	NPN																																																																																					
P	PNP																																																																																					
V	Voltage																																																																																					
05	5V pulse																																																																																					
12	12V pulse																																																																																					
24	24V pulse																																																																																					
Oxx	Specify																																																																																					
CODE	OPTIONAL OUTPUT																																																																																					
N	None																																																																																					
R2	2 Relay																																																																																					
I	AIO: 0-20mA / 0-10mA																																																																																					
V	AIO: 0-10V / 0-5V																																																																																					
S	RS485																																																																																					
8	Relay, Analogue Output or RS485 Port can be selected one only																																																																																					
CODE	EXCITATION																																																																																					
E05	DC 5 V																																																																																					
E12	DC 12 V																																																																																					
E24	DC 24 V																																																																																					
CODE	AUX. POWER																																																																																					
A	AC 115/230 V																																																																																					
CODE	INPUT																																																																																					
C 00	Contact																																																																																					
N	NPN																																																																																					
P	PNP																																																																																					
V	Voltage																																																																																					
05	5V pulse																																																																																					
12	12V pulse																																																																																					
24	24V pulse																																																																																					
Oxx	Specify																																																																																					
CODE	OPTIONAL OUTPUT																																																																																					
N	None																																																																																					
R2	2 Relay																																																																																					
I	AIO: 0-20mA / 0-10mA																																																																																					
V	AIO: 0-10V / 0-5V																																																																																					
S	RS485																																																																																					
8	Relay, Analogue Output or RS485 Port can be selected one only																																																																																					
CODE	EXCITATION																																																																																					
E12	DC 12 V																																																																																					
CODE	AUX. POWER																																																																																					
A	AC 115/230 V																																																																																					