

INDICATOARE DE PROCES

Indicator de impulsuri (frecventa / viteza de rotatie / viteza de deplasare liniara)

CS1-RL

■ DESCRIERE

CS1-RL este o varianta economica de indicator pentru masurarea cu mare precizie a frecventei impulsurilor (contact mecanic, NPN, PNP, impuls tensiune), prelucrarea si afisarea lor sub forma de frecventa, viteza de rotatie sau viteza de deplasare liniara.

Gama de masura de la 0,01 Hz la 100 KHz (optional 140 KHz) si rezolutia se selecteaza automat pentru afisarea cat mai precisa a frecventei de intrare.

Optional poate fi echipat cu 1 iesire:

- tip releu sau iesire analogica sau interfata RS 485 (Modbus RTU) cu functii de comanda, alarma, retransmisie sau comunicatie
- releul poate fi programat: Hi/ Lo/ Hi Hld/ Lo Hld / DO* cu activare temporizata la pornire/ temporizare la activare si dezactivare/ histerezis; temporizare: de la 0:00.0 la 9 min.59.0 sec
- *Hi/ Lo/ Hi Hld/ Lo Hld/ DO - superior/ inferior/ mentinut sup./ mentinut inf./ iesire digitala

■ APLICATII

- Panouri de automatizare, masura, alarma si comanda intrare/iesire de la distanta cu PC/PLC

■ CARACTERISTICI

- Mod intrare: selectabil contact mecanic / NPN / PNP / impuls tensiune
- Nivel intrare: selectabil 5V / 12V / 24 V
- Frecventa impuls intrare: 0,01Hz la 100KHz (optional 140 KHz)
- Calibrare: nu este necesara
- Precizie masura: $\leq \pm 0.005\%$ din FS ± 1 digit
- Functie 'pauza' a intrarii: la frecv. joasa, pe perioada pana la urmatorul impuls care face posibila identificarea acesteia, este afisat 0; 2 moduri programare pauza: automat / manual; manual de la 0.0sec la 999.9sec
- Afisaj: LED-uri rosii inalta luminozitate, 5 cifre, h=20mm
Gama afisare: 0.0000...99999 cu deplasare automata a pct-ului zecimal
Rezolutie PV: deplasare punct zecimal programabila in urmatoarele 3 moduri: automat / semiautomat / manual (fix)
Tip afisare PV: RPM, RPS (vit. rotatie)/ vit. deplasare liniara/ Hz, KHz (frecv)
Unitati masura: RPM, RPS, m/min, cm/min, yd/min, ft/min, Hz, KHz
Programare: ppr (impulsuri pe rotatie): 1...99999
diametru roata de masura: 0.0001...9.999 m
Factor de compensare a afisarii: 0.001...9.999
Reglaj fin digital: fiecare capat de scala 0...+99999
Indicare depasire gama: ovFL (intrare peste 120% din gama intrare sup.)
Punct zecimal: programabil 0... 0.0000 (pt. rezolutie fixa, alti parametri)
Functie de remote display: comandat prin RS 485
- LED-uri semnalizare:
 - 1 rosu - stare releu de iesire
 - 1 portocaliu - stare comunicatie RS485
 - 2 portocalii - stare min hold/max hold
 - 1 verde - functie tasta ▼
- Memorare valori min/max masurate pe timpul alimentarii

- Alte functii: filtru digital, medie, medie mobila, taiere jos (low cut)
- Tastatura: 4 taste multifunctionale; tasta ▼ poate fi programata PV hold, PV relativ, RESET max. hold/min. hold sau RESET releu mentinut
- Iesire tip releu: 1 prag programabil
 - 1 releu NI/ND, contacte 5A/230Vca, 10A/115Vca
 - mod activare releu: comparare cu nivel prag
 - programabil Hi/ Lo/ Hi Hld/ Lo Hld
 - prin RS 485 comandata de master-functie DO (iesire digitala)
 - functii activare: temporizare la pornire/ temporizare la activare si dezactivare/ histerezis/ activare mentinuta
 - gama temporizare: de la 0:00.0 la 9 min.59.0 sec
 - histerezis programabil: 0...5000 unitati
- Iesire analogica: tensiune: 0~5V, 1~5V, 0~10V (sarcina $\geq 1000\Omega$)
curent: 0~10mA, 0~20mA, 4~20mA (sarcina $\leq 600\Omega$)
precizie $\pm 0.1\%$ FS
capete de gama setabile -19999...+29999
reglaj fin digital capete de gama
- Iesire comunicatie: RS 485 protocol Modbus RTU; distanta 1,2 Km
- Rigiditate dielectrica: 2kVca pt. 1' intre alim/intr./ies./carcasa
- Rezistenta izolat $\geq 100M\Omega$ la 500Vcc intre alim/intr./iesire
- Izolare intre alim./intr./ies. releu, analogica, RS 485
- Conditii de lucru: 0...60°C, 20...95%RH fara condens
- Carcasa: ABS rezistenta la foc
- Grad de protectie: panou frontal IP 54, carcasa IP 20
- Dim.: 96x48x72mm; montaj in panou, decupare 92x44 mm
- Alimentare: 230Vca, 85...264Vcc/ca, 20...90Vcc/ca, consum 5VA max.
- Alimentare senzor extern: max. 24 Vcc/ 30 mA
- Memorie EEPROM



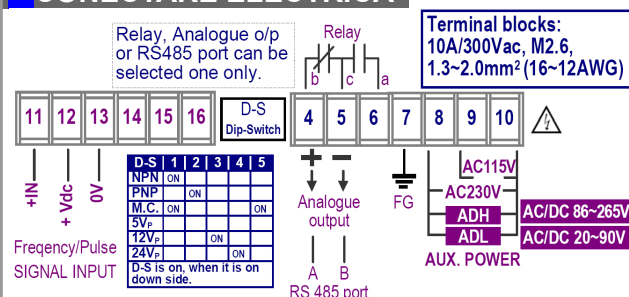
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■ ORDERING INFORMATION

CS1-RL- [Input Mode] [Input Level] - [Optional Output] - [Excitation Supply] - [Aux. Power]		OPTION			
CODE	INPUT MODE	CODE	OPTIONAL OUTPUT	CODE	EXCIT. SUPPLY
C 00	Contact	N	None	E05	DC 5 V
N	NPN	R1	1 Relay	E12	DC 12 V
P	PNP	V	0(1) ~ 5 V 0 ~ 10 V	E24	DC 24 V
V	Voltage pulse	I	0 ~ 10 mA 0(4) ~ 20 mA	The excitation supply has to match the input mode. The standard is DC12V for 12Vp	
05	5V pulse	8	RS485		
12	12V pulse	Relay, Analogue Output or RS485 Port can be selected one only.		* It means RoHS version.	
24	24V pulse				
O xx	Specify				

Input mode and level can be changed by dip switches on rear of meter

■ CONECTARE ELECTRICA

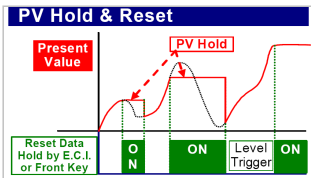
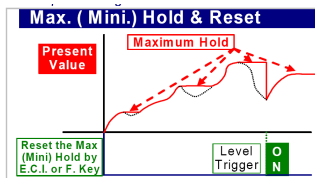


Specificatii tehnice intrare

Frecventa de intrare	Mod de intrare	Nivel de intrare
0,01Hz...50 Hz	Contact mecanic	
0,01Hz...50 Hz	NPN	Nivel sup.: 8-12V; Nivel inf.: 0.0~4.0V (cu tensiune de alimentare 12Vcc)
0,01Hz...100 KHz	PNP	
0,01Hz...140 KHz (optional)	Impuls tensiune	Nivel sup.: peste 2/3 din nivel intrare Nivel inf.: sub 1/3 din nivel intrare

➤ Modul de intrare (NPN, PNP, contact) si nivelul de intrare (5Vp, 12Vp, 24Vp) sunt selectabile cu un grup de comutatoare (D-S) situat pe panoul spate

FUNCTII AFISAJ



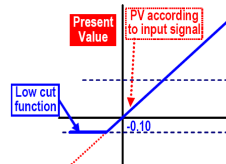
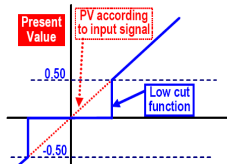
Funcție taie jos (low cut)

Limita de taie > 0

Limita de taie < 0

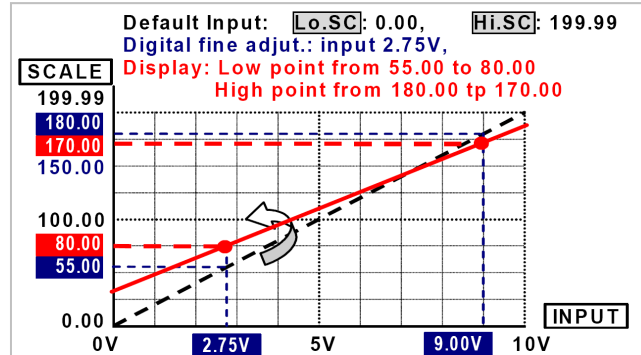
Low Cut set to be +0.50

Low Cut set to be -0.10



Limita taie jos setata la +0.50. In domeniul de variatie al PV de la -0.50 la +0.50 va fi afisat 0.
Limita taie jos setata la -0.10. Pentru toate valorile PVs - 0.10 va fi afisat - 0.10

Reglaj fin digital



Factor de compensare

Ex: Cu un senzor de proximitate ($ppr=1$) se masoara viteza de rotatie $N=1000 \text{ rpm}$ a rotii din stanga si se doreste afisarea vitezei de rotatie a rotii din dreapta.
Diam. roata stanga: 1 m; Diam. roata dreapta: 0,35 m



Factor de compensare afisaj = 2.857 ($1\text{m}/0.35\text{m}$)
Afisajul va indica: $N \times 2.857 = 2857 \text{ rpm}$

FUNCTIE CITIRE STABILA

Medie

Average set to be 3

Sample 1 Sample 2 Sample 3 Sample 4 Sample 5 Sample 6

Display Update Value = (Sample 1 + Sample 2 + Sample 3)/3
Display Update Value = (Sample 4 + Sample 5 + Sample 6)/3

Remark: The higher average setting will cause the response time of Relay and Analogue output slower.

Medie mobila

Moving Average set to be 3

Sample 1 Sample 2 Sample 3 Sample 4 Sample 5 Sample 6

In first 3 samples, Display Update Value = (Sample 1 + Sample 2 + Sample 3)/3

Display Update Value = (Sample 2 + Sample 3 + Sample 4)/3

Display Update Value = (Sample 3 + Sample 4 + Sample 5)/3

Display Update Value = (Sample 4 + Sample 5 + Sample 6)/3

Remark: The higher moving average setting wouldn't cause the response time of Relay and Analogue output slower after first 3 samples.

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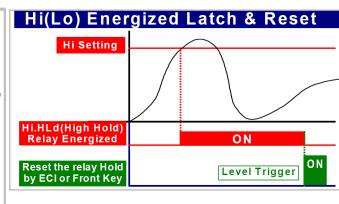
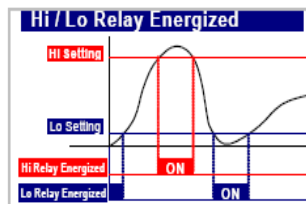
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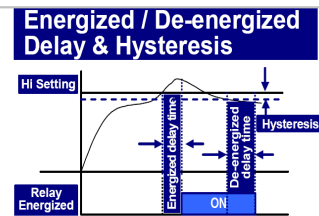
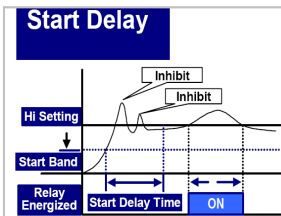
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FUNCTII RELEE

Mod activare

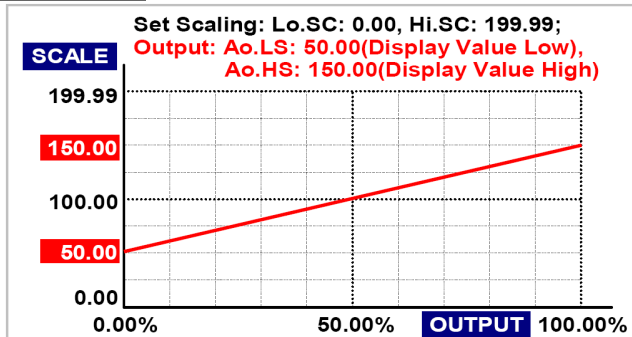


Funcție temporizare



IESIRE ANALOGICA

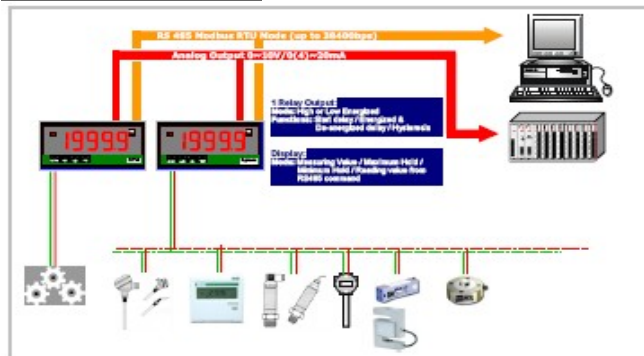
Funcție scalare



Gama dintre AoHS si AoLS ar trebui sa fie mai mare de 20% din domeniu, altfel rezolutia iesirii analogice va fi micorata

INTERFATA RS 485

Comunicatie cu PC / PLC



Afisaj comandat de la distanta

