

# CLM100

## Current Loop Monitor

The CLM100 converts commercially available 4-20mA current loop transducers into digital data so a wide variety of information can be displayed on Maretron displays. Numerous 4-20mA current loop transducers are supported by the CLM100 including transducers for monitoring DC voltage and current, flow rate, distance, linear velocity and acceleration, angle, angular velocity and acceleration, temperature, humidity, resistance, strain gauges, force (load cell), pressure, decibels, and rotational rate. Some typical applications where the CLM100 is used together with a commercially available 4-20mA transducers include machinery monitoring using accelerometers and vibration sensors. Vibration monitoring of pumps, motors, fans, compressors, and gear boxes provide an early warning of potential problems resulting in fewer breakdowns and reduced maintenance expenses. Another application example using the CLM100 is shaft speed monitoring. A commercially available 4-20mA rotational rate transducer is coupled to the shaft of interest and the CLM100 converts the transducer data to an RPM that can be read on a compatible NMEA 2000® display. And if you're concerned about the force exerted on a mast stay or perhaps a vessel tow attachment point, commercially available clevis pins with a 4-20mA interface can be connected to the CLM100 and the corresponding load monitored using any of Maretron's display products.



Available accessories for the CLM100:



PT-0-xxxxPSI-01



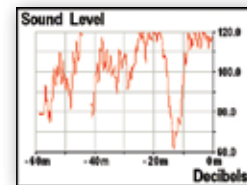
PT-SNUB-01



IRHT-01

### Product Features

- Used together with commercially available 4–20mA current loop transducers
- Converts analog transducer data to digital Data (NMEA 2000®)
- Digital data displayed on Maretron displays

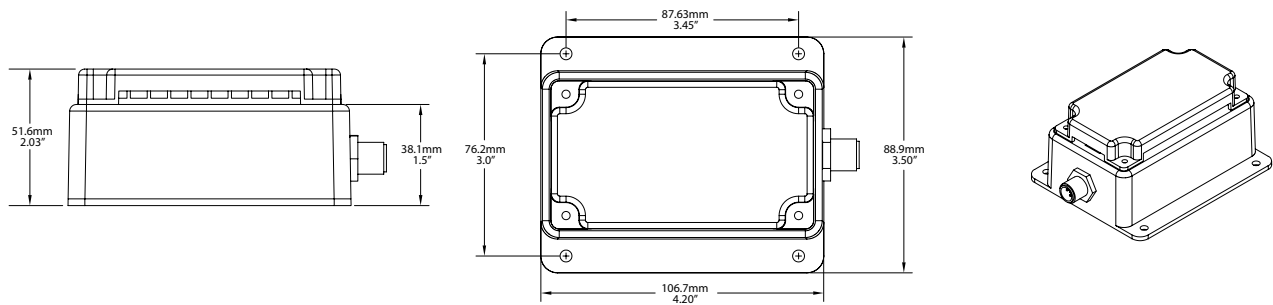


DSM Series Screen Shots

### PRODUCTS

PART NUMBER	DESCRIPTION
CLM100-01	Current Loop Monitor
IRHT-01	Indoor Humidity/Temperature Sensor
PT-0-1.5PSI-01	Pressure Transducer 0 to 1.5 PSI
PT-0-3PSI-01	Pressure Transducer 0 to 3 PSI
PT-0-5PSI-01	Pressure Transducer 0 to 5 PSI
PT-0-10PSI-01	Pressure Transducer 0 to 10 PSI
PT-0-50PSI-01	Pressure Transducer 0 to 50 PSI
PT-0-100PSI-01	Pressure Transducer 0 to 100 PSI

PART NUMBER	DESCRIPTION
PT-0-500PSI-01	Pressure Transducer 0 to 500 PSI
PT-0-1000PSI-01	Pressure Transducer 0 to 1000 PSI
PT-0-5000PSI-01	Pressure Transducer 0 to 5000 PSI
PT-SNUB-01	Pressure Snubber
PT-V-0-1BAR-01	Pressure Transducer Vacuum to 1 Bar
PTS-0-1.5PSI-01	Submersible Pressure Transducer 0 to 1.5 PSI
PTS-0-3PSI-01	Submersible Pressure Transducer 0 to 3 PSI
PTS-0-5PSI-01	Submersible Pressure Transducer 0 to 5 PSI



## SPECIFICATIONS

PARAMETER	VALUE	COMMENT
Number of Channels	6	Independently Programmable
Operating Modes	DC Voltage, DC Current, Flow Rate, Distance, Linear Velocity, Linear Acceleration, Angle, Angular Velocity, Angular Acceleration, Temperature, Humidity, Resistance, Strain Gauge, Force (Load Cell), Pressure, Decibels, Rotational Rate	
Transducer Interface	4-20mA current loop	
Current Loop Excitation Voltage	12-15 VDC	
Accuracy	+/-1% FS	Exclusive of Transducer
Resolution	+/-0.33% FS	Over Full Transducer Range

## NMEA 2000® PARAMETER GROUP NUMBERS (PGNs)

DESCRIPTION	PGN#	PGN NAME	DEFAULT RATE
Periodic Data PGNs	065286	Fluid Flow Rate (Maretron Proprietary)	2 Times/Second
	127488	Engine Parameters, Rapid Update	10 Times/Second
	127489	Engine Parameters, Dynamic	1 Time/Second
	127493	Transmission Parameters, Dynamic	10 Times/Second
	127508	Battery Status	0.67 Times/Second
	127751	DC Voltage/Current	0.67 Times/Second
	130313	Humidity	0.5 Times/Second
	130314	Actual Pressure	0.5 Times/Second
	130316	Temperature, Extended Range	0.5 Times/Second
	130576	Trim Tab Status	5 Times/Second
Response to Requested PGNs	130840	Generic Sensor (Maretron Proprietary)	1 Time/Second
	126464	PGN List (Transmit and Receive)	N/A
Protocol PGNs	126996	Product Information	N/A
	126998	Configuration Information	N/A
	059392	ISO Acknowledge	N/A
	059904	ISO Request	N/A
	060928	ISO Address Claim	N/A
Maretron Proprietary PGNs	065240	ISO Address Command	N/A
	126208	NMEA Request/Command/Acknowledge	N/A
	126720	Device Configuration Information	N/A
	130818	Device Label	N/A

## ELECTRICAL

PARAMETER	VALUE	COMMENT
Operating Voltage	9 to 32 Volts	DC Voltage
Power Consumption	400mA	Maximum Current Drain
Load Equivalence Number (LEN)	8	NMEA 2000® Spec. (1LEN = 50mA)
Reverse Battery Protection	Yes	Indefinitely
Load Dump Protection	Yes	Energy Rated per SAE J1113

## MECHANICAL

PARAMETER	VALUE	COMMENT
Size	3.50" x 4.20" x 2.03" (88.9mm x 106.7mm x 51.6mm)	Including Flanges for Mounting
Weight	13 oz. (368.5 g)	

## ENVIRONMENTAL

PARAMETER	VALUE
IEC 60945 Classification	Exposed
Degree of Protection	IP64
Operating Temperature	-25°C to 55°C
Storage Temperature	-40°C to 70°C
Relative Humidity	93%RH @40° per IEC60945-8.2
Vibration	2-13.2Hz @ ±1mm, 13.2-100Hz @ 7m/s <sup>2</sup> per IEC 60945-8.7
Solar Radiation	Ultraviolet B, A, Visible, and Infrared per IEC 60945-8.10
Corrosion (Salt Mist)	4 times 7days @ 40°C, 95%RH after 2 hour Salt Spray Per IEC 60945-8.12
Electromagnetic Emission	Conducted, Radiated Emission per IEC 60945-9
Electromagnetic Immunity	Conducted, Radiated, Supply, and ESD per IEC 60945-10
Safety Precautions	Dangerous Voltage, Electromagnetic Radio Frequency per IEC 60945-12

## CERTIFICATIONS

PARAMETER	COMMENT
NMEA 2000® Standard	Level A
Maritime Navigation and Radio Communication Equipment & Systems	IEC 61162-3
Maritime Navigation and Radio Communication Equipment & Systems	Tested to IEC 60945
FCC and CE Mark	Electromagnetic Compatibility