



Product sheet

880 CIU Prime

The fit for purpose Communications and Interface Unit for automated tank gauging

Features

MODBUS compatible host

Weights & Measures approved

Hot standby & redundancy

Gauge command support

Configuration protected

The CIU Prime is the interface between the tank gauging instruments on bulk liquid storage tanks and computer systems in the tank farm control room.

The main task of the CIU Prime is scanning and data acquisition from all tank gauges. Up to 50 tanks can be connected to one CIU Prime. Multiple CIU Primes can be paralleled for larger applications.

All measured data including level, temperature, pressure, density, alarm status, interface level, vapor temperature and other data is scanned continuously. The data are stored in a local real-time database for access by higher level computer systems.

The Enraf fieldbus inputs provide direct interfacing capabilities for all existing Enraf instruments with BPM transmission. The CIU Prime can be equipped with up to four field ports. Parallel operation of these ports allows concurrent scanning. This results in a high update rate of the database.

Optionally, input boards are available for the connection of existing CIU (series 858) and converted Microlect systems.

The CIU Prime offers two independent host communication ports for connectivity to PLC and DCS systems and/or Enraf's CIU Plus. The host communication is standardized on MODBUS.

Local or remote service via a modem is simultaneously supported using the second host communications port. Support of modem initialization strings even allows automatic connect and dial-in at start-up.



Specifications

Database	: Up to 50 tanks	
Scan speed	: 50 Tanks in 2 - 4 sec ¹⁾	
Scan strategy	: Sequential or concurrent (configurable per field port, foreground and background scan)	
Available data ²⁾	: - Product level	- Ambient temperature
	- Product & vapor temperature	- Density (Observed, Servo, HTG, HIMS)
	- Gauge alarms	- Water level (dipped and continuous)
	- Vapor pressure	- Calibrate ATG & XTG servo gauges
 Supported dimensions		
Level	: m, mm, fis, ft, in, in/16	
Temperature	: °C, °F	
Density	: °API, kg/m ³ , lbs/ft ³ , dens60/60, lbs/Usgal	
Pressure	: kg/m ² , kPa, psi, bar	
Gauge commands support	: - Lock test	- Water dip
	- Unlock	- Alarm test (SmartRadar)
	- Block	- Calibrate (ATG & XTG servo gauges)
	- Density dip	
Configuration protection	: Via two key switches	

Mechanical

Dimensions	: See dimensional drawings
Weight	: 5.2 kg (11.5 lb)

Environmental

Ambient temperature	: 0 °C to +60 °C (32 °F to +140 °F)
Storage temperature	: -20 °C to +80 °C (-4 °F to +176 °F)
Protection	: Against mechanical impact IP 30 (NEMA 1)
Humidity	: 5% to 90%, non condensing
Pollution degree	: II

Materials

Housing	: Acryl painted steel
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Electrical

Power supply	: 100 V - 240 V, auto select (-15 % to +10 %), (50 Hz - 60 Hz)
Power rating	: 50 VA (25 VA typical)
Over voltage category	: II

Transmission / Communication ³⁾

Field ports	: Up to 4 ports
Baud rate (field)	: 1200 baud / 2400 baud
Isolation (field ports)	: Galvanically separated
Field port type	: Enraf Fieldbus, Serial ASCII coded, Bi-Phase Mark modulated (BPM) or RS-232C / RS-485
Host ports	: 2 (standard)
Baud rate (host)	: 1200 baud to 19k2 baud
MODBUS register type	: Single, double; scale and offset programmable
Manual overwrite	: Value, kill, resurrect
MODBUS data record	: Tank or entity oriented
Host communication	: Slave RTU MODBUS
Modem support	: All Hayes compatible modems
Device compatibility	
Radar gauges	: SmartRadar series 873, 971 and 973, RTG gauges series 872
Servo gauges	: Series 802 and series 811 (GPU protocol), ATG & XTG gauges series 854
Other	: Mechanical Gauges Transmitter 813, Microlect series 855, MESC series 865, HIMS, HTG

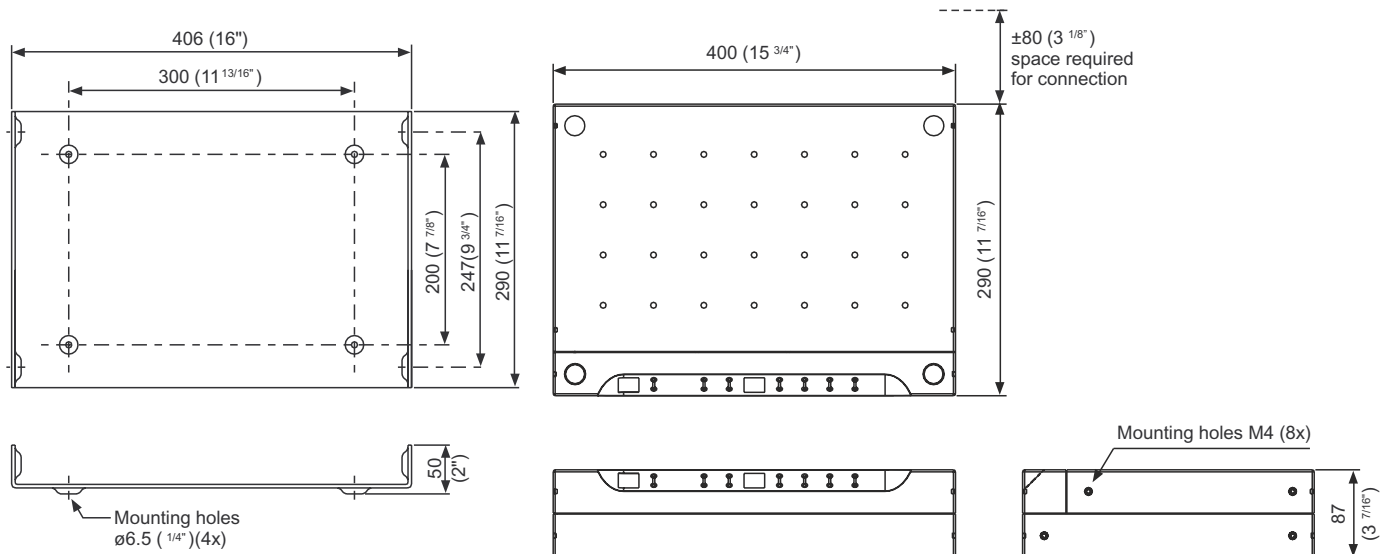
¹⁾ 50 Tanks database connected to CIU Prime at 19k2 baud

²⁾ Depending on supported functionality of connected gauges

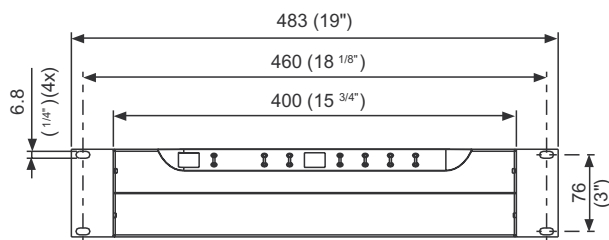
³⁾ For cables specifications and cable connections see "Installation guide" and "Manual"

Identification code CIU Prime

Pos 1 Application													
U	General purpose												
X	W&M certified												
Pos 2 Option not used													
*													
Pos 3 Option not used													
*													
Pos 4 Configuration													
T	CIU Prime												
Pos 5, 6, 7 Instrument designation													
8	8	0											
Pos 8 Data transmission I/O port A													
B	Input board, Enraf Fieldbus Serial, ASCII coded, Bi-Phase Mark modulated (IB-BPM)												
C	Input board, IP-RS-232C / RS-485 with CIU series 858 communication												
Pos 9 Data transmission I/O port B													
B	Input board, Enraf Fieldbus Serial, ASCII coded, Bi-Phase Mark modulated (IB-BPM)												
C	Input board, IP-RS-232C / RS-485 with CIU series 858 communication												
Z	None												
Pos 10 Data transmission I/O port C													
B	Input board, Enraf Fieldbus Serial, ASCII coded, Bi-Phase Mark modulated												
C	Input board, IP-RS-232C / RS-485 with CIU series 858 communication												
Z	None												
Pos 11 Data transmission I/O port D													
B	Input board, Enraf Fieldbus Serial, ASCII coded, Bi-Phase Mark modulated												
C	Input board, IP-RS-232C / RS-485 with CIU series 858 communication												
Z	None												
Pos 12 Option not used													
Z													
Pos 13 Configuration Key switches													
K	With (2) Key switches (required when Pos 1 = X)												
Z	None												
X	*	*	T	8	8	0	B	C	Z	Z	Z	K	Typical identification code
	*	*	T	8	8	0					Z		Your identification code



Frame for wall mounting



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WE THINK TANK

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