

Communication interface for **Modbus TCP**

– for automation

The CIM/CIU 500 is a standard interface for data transmission between a Modbus TCP network and a Grundfos pump or controller. It makes data exchange possible between Grundfos pumping systems and a PLC or SCADA system. Via a rotary switch you can also change the protocol to e.g. PROFINET IO.

Extensive amounts of datapoints are available from each product via the CIM/CIU 500. The interface offers uncomplicated system integration with both new and legacy systems, as the Modbus TCP protocol is widely supported by existing control systems and PLCs.

The interface module can be installed as an internal add-on or as a wall-mounted unit where internal connection is not supported. The wall-mounted unit is equipped with a 24-240 VAC/VDC power supply.

In addition to Modbus TCP, interface modules are also available for GENIbus, BACnet, Profibus, LON, GSM/GPRS (wireless communication) Modbus RTU, PROFINET IO and Grundfos Remote Management.

CIM 500 add-on module

The CIM 500 is an add-on communication module installed internally in 11-22 kW Grundfos E-pumps, MGE model H, MAGNA3, Hydro MPC, Control MPC, Dedicated Controls or Hydro Multi-B.

CIU 500 wall-mounted/DIN-rail unit

The CIU 500 with internal power supply is for Grundfos products that do not support the add-on module.

Supported products

- > Dry running E-pumps: CRE/CRNE/CRIE, MTRE, CME, TPE Series 1000/2000, NBE/NKE
- > MAGNA/ UPE Circulators * / MAGNA3
- > CUE Motor drive for pumps
- > Wastewater AUTO_{ADAPT}
- > Multi Pump Controller: Control MPC
- > Boosters: Hydro Multi-E and Hydro MPC and Hydro Multi-B
- > CR Monitor* condition monitoring for CR pumps
- > Dedicated Controls for sewage pumps (separate data sheet)
- > Motor Protector MP 204

* additional add-on GENIbus module required

Advantages at a glance

- > Supports a wide range of Grundfos products
- > Simple web-interface for configuration of Modbus TCP hardware settings
- > Modular design – prepared for future needs
- > 24-240 VAC/VDC power supply in CIU
- > Modbus diagnostics available



Using CIM/CIU with Grundfos products

General CIU 500 data

Supply voltage	24-240 VAC/VDC, -10% / + 15%
Frequency	0 - 60 Hz
Power consumption	Max. 11 W
Cable size	IEC: 0.2 - 4 mm ² , UL: 24-12 AWG
Enclosure class	IP 54, according to IEC 60529
Cable entry	6 x M16 Ø4 - Ø10
Operating temperatures	-20 °C to +45 °C (-4 °F to +113 °F)
Storage temperatures	-20 °C to +60 °C (-4 °F to +140 °F)
Dimensions (H/W/D)	182 x 108 x 82 mm

GENIbus Communication

Protocol	GENIbus
Recommended cable type	Screened, double twisted-pair
Maximum cable length	1200 m/ 4000 ft

Modbus Communication

Protocol	Modbus TCP Profinet IO (set via rotary switch)
Transmission speeds	10 / 100 Mbits/s
Ports	2x RJ45

Modbus TCP network



Data points

CIM/CIU 500 Modbus								
s = if sensor installed s* = available with sensor or TPE 2000 ¹ differential or absolute, depends on sensor ² Not standard for Control MPC ³ Not supported for all pump variants G= only for MGE model G H= only for MGE model H	MAGNA / UPE	MAGNA3	E-Pumps 0.25-7.5 kW	CUE/E-Pumps 11-22 kW	Multi-E	Hydro MPC/ Control MPC	MP 204	Hydro Multi-B
Control								
Operating Mode	*	*	*	*	*	*	*	*
Setpoint	*	*	*	*	*	*	*	*
Control Mode	*	*	*	*	H	*	*	*
Relay Control			*	*				
Tank filling control								*
Status								
Operating Mode Status	*	*	*	*	*	*	*	*
Control Mode Status	*	*	*	*	*	*	*	*
Feedback	*	*	*	*	*	*	*	*
Alarm/warning information	*	*	*	*	*	*	*	*
Bearing Service information			H	*				*
Tank filling status information								*
Measured Data								
Power/Energy Consumption	*	*	*	*	*	*	*	*
Pressure (Head) ¹	*	*	s*	s*	H+s	* ²	*	s
Flow	*	*	s*	s*	*	* ²	*	*
Relative Performance	*	*	*	*	*	*	*	*
Speed and Frequency	*	*	*	*	*	*	*	*
Digital Input/Output		*	*	*	*	*	*	*
Motor Current	*	*	*	*	*	*	*	*
DC Link Voltage	*	*	*	*	*	*	*	*
Motor Voltage			*	*	*	*	*	*
Remote Flow		s	G+s	s	H+s	*	*	*
Inlet Pressure ¹			G+s	s	H+s	s	*	s
Remote Pressure ¹		s	G+s	s	H+s	s	*	s
Level			s	s	H+s	s	*	s
Motor Temperature			G	*	*	*	*	s
Remote Temperature		s	s	s	H+s	s	*	*
Pump Liquid Temperature	*	*	G+s	s	*	*	*	*
Bearing Temperatures			H+s	s	*	*	*	*
Auxiliary Sensor Input			s	s	H+s	*	*	*
Operation Time (Run Time)	*	*	*	*	*	*	*	*
Total on time	*	*	*	*	*	*	*	*
Number Of Starts	*	*	*	*	*	*	*	*
Ambient Temperature			H+s	*	H+s	s	*	*
Inlet and Outlet Temperatures						s	*	*
Heat energy meter		*	H	*	*	*	*	*
Outlet Pressure ¹			H+s	*	H+s	* ²	*	s
Feed Tank Level			H+s	*	H+s	s	*	s
Phase Voltages							*	*
Line Voltages/Currents/Frequency							*	*
Start/Run Capacitor							*	*
Voltage Angles + Cos phi							*	*
Insulation resistance							*	*
Starts/h and auto restarts/24h							*	*
Subpump Data (for each sub pump in the system)								
Alarm/Status information					*	*	*	*
Operation Time (Run Time)					*	*	*	*
Speed					H	*	*	*
Line current/ power consumption					H	*	*	*
Motor temperature					H	*	*	*
Number of starts					H	*	*	*
Control pump: force to stop/ auto					*	*	*	*

Note: TPED twin pumps in range 3,0-22 kW needs always 2 CIU modules
 Note: E-Pumps = CRE/CRNE/CRIE, MTR, CME, TPE Series 1000/2000, NBE/NKE.
 Note: For WW-AutoAdapt pumps and Dedicated Controls view to related datasheets
 Note: For DDA dosing pumps please view to related datasheets

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