

# Communication interface for **PROFINET IO**

## – for automation

The CIM/CIU 500 is a standard interface for data transmission between a PROFINET IO 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. Modbus TCP

No custom programming is needed to integrate the CIM/CIU 500 in a PROFINET IO network. System integration is very straight-forward with a GSDML file and support for the standard profile “intelligent pumps” from PROFIBUS & PROFINET International.

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 PROFINET IO interface modules are also available for GENIbus, BACnet, Modbus RTU, LON, Cellular communication, PROFIBUS DP, Modbus TCP and Grundfos iSolution Cloud.

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### CIM 500 add-on module

The CIM 500 is an add-on communication module installed internally in single Grundfos E-pumps MGE model H/I/J, MGE 11-22kW or MAGNA3, Dedicated Controls, LC 2x1, Hydro MPC, Control MPC

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### 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 like CUE or DDA XL.

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### Supported products

- > MAGNA3
- > DDA dosing, Wastewater AUTOADAPT
- > Dry-running E-pumps: CRE/CRNE/CRIE, MTRE, CME, TPE2 / TPE3, NBE/NKE
- > CUE Motor drive for pumps
- > Multi Pump Controller: Control MPC
- > Motor Protector MP 204
- > Boosters: Hydro Multi-E and Hydro MPC
- > Dedicated Controls or LC 2x1, controller for sewage pumps (sep. data sheet)

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### Advantages at a glance

- > Supports a wide range of Grundfos products
- > Supports standard intelligent pump profile from PROFIBUS & PROFINET International.
- > Modular design – prepared for future needs
- > 24-240 VAC/VDC power supply in CIU
- > Easy installation and commissioning



# 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 <sup>2</sup> , 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

## PROFINET Communication

Protocol	PROFINET IO Modbus TCP (set via rotary switch)
Transmission speeds	10 / 100 Mb/s
Ports	2x RJ45
Conformance class	B

## PROFINET IO



## Data points

CIM/CIU 500 PROFINET IO	MAGNA / UPE	MAGNA3	E-Pumps 0.25-7.5 kW	CUF / E-Pumps 11-22 kW	Multi-E	Hydro MPC/ Control MPC	MP 204
s = if sensor installed							
s* = available with sensor or TPE 2000							
<sup>1</sup> differential or absolute, depends on sensor							
<sup>2</sup> Not standard for Control MPC							
<sup>3</sup> Not supported for all pump variants							
H = only MGE model H							
G = only MGE model G							
<b>Control</b>							
Operating Mode	•	•	•	•	•	•	•
Setpoint	•	•	•	•	•	•	•
Control Mode	•	•	•	•	H	•	•
Relay Control			•	•			
<b>Status</b>							
Operating Mode Status	•	•	•	•	•	•	•
Control Mode Status	•	•	•	•	•	•	•
Feedback	•	•	•	•	•	•	•
Alarm and warning information	•	•	•	•	•	•	•
Bearing Service information			H	•			
<b>Measured Data</b>							
Power/Energy Consumption	•	•	•	•	•	•	•
Pressure (Head) <sup>1</sup>	•	•	s*	s*	•	• <sup>2</sup>	•
Flow (calculated at MAGNA, TPE2000)	•	•	s*	s*	H+s	• <sup>2</sup>	•
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 <sup>1</sup>			G+s	s	H+s	s	
Remote Pressure <sup>1</sup>		s	G+s	s	H+s	s	
Level			s	s	H+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	•	•	•	•	•	•	•
Torque (N/A on 1-phased motors)			•	•	•	•	•
Number Of Starts	•	•	•	•	•	•	•
Ambient Temperature			H+s		H+s	s	
Inlet and Outlet Temperatures						s	
Heat energy meter	•	•	H				
Outlet Pressure <sup>1</sup>			H+s		H+s	• <sup>2</sup>	
Feed Tank Level			H+s		H+s	s	
Phase Voltages							•
Line Voltages/Currents/Frequency							•
Start/Run Capacitor							•
Voltages Angles + Cos phi							•
Insulation resistance							•
Starts/h and auto restarts/24h							•
<b>Subpump Data (for each sub pump in the system)</b>							
Status information					•	•	
Alarm information					•	•	
Operation Time (Run Time)					•	•	
Speed					H	•	
Line current/ power consumption					H	•	
Motor temperature					H	•	
Number of starts					H	•	
Control pump: forc to stop/auto						•	

Note: E-Pumps = CRE/CRNE/CME, MTR, CHIE, TPE2 / TPE3, NBE/NKE  
 Note: For DDA dosing pumps please view to DDA related datasheet  
 Note: For ww-AUTO<sub>ADAPT</sub> and Dedicated Controls or LC 2x1 controller view to related datasheets  
 Note: TPED twin pump model F or G in range 3,0 -22 kW needs always 2 CIU modules  
 Note: MAGNA3-D twin pump model D only require 1x CIM interface installed in master head