



Distributor:

WASYS
SYSTEM SOLUTION PARTNER

Lykkegårdsvej 5
4000 Roskilde
T: +45 7221 7979
www.wasys.dk

PUMA series

Quickguide

ACOWA
INSTRUMENTS

Safety instructions

These safety instructions provide a quick overview of the safety precautions that must be taken when working with this product. Follow these safety instructions when handling, assembling, operating, maintaining, servicing, and repairing this product. Keep these safety instructions at the installation site for future reference.

Connecting pump power supply and electrical power supply



DANGER
Electric shock

Death or serious personal injury

- In the event of an insulation fault, the fault current may be direct current or pulsating direct current. Follow national regulations regarding the requirements for and selection of residual current devices (RCDs) when installing the control unit.
- Disconnect the power supply before making electrical connections. Ensure the power supply cannot be accidentally reconnected.
- Remember to indicate the location of the main switch by placing a label or similar on the control unit.
- Electrical connections must be made in accordance with the wiring diagrams.

Intended use

The product is designed to control pumps. It can be configured for the following purposes:

- Pumping wastewater from pits or reservoirs.

The product can be used in the following applications:

- Network pumping stations
- Main pumping stations
- Commercial buildings
- Municipal facilities

The product must not be exposed to strong solvents or oil-based liquids.

Servicing the product



DANGER
Electric shock

Death or serious personal injury

- Disconnect the power supply before performing any work on the product or connected pumps.
- Ensure that the power supply cannot be inadvertently reconnected.

Fuse replacement and troubleshooting



DANGER
Electric shock

Death or serious personal injury

- Disconnect the power supply before performing any work on the product or connected pumps.
- Ensure that the power supply cannot be inadvertently reconnected.

Product disposal



The symbol with the crossed-out waste bin on the product indicates that it must be disposed of separately from household waste. When a product marked with this symbol reaches the end of its life, it must be delivered to a collection point designated by the local waste authorities. Separate collection and recycling of such products helps protect the environment and human health.

About the product

The ACOWA PUMA series is an advanced pump controller developed for modern wastewater systems and pumping stations.

With a focus on reliability, energy efficiency, and user-friendliness, PUMA is a powerful tool for both monitoring and controlling pumps in all types of installations.

Controls both single-phase & three-phase pumps

This product is a versatile and compact one- or two-pump controller with excellent communication options. The PUMA series is capable of controlling both single-phase and three-phase pumps up to 12A (5.5 kW). The controller is housed in a robust, two-part, impact-resistant IP65-rated enclosure, ensuring durability and protection against harsh environments.

Communication with the PUMA Pump Controller

Experience versatile communication options. By default, the PUMA series comes without a communication interface. However, you have the option to upgrade it with LTE-M 4G or NB-IoT modems. The communication module is designed for easy replacement to meet future IoT requirements.

In terms of security, this pump controller uses a ModBus TCP/IP protocol that can be encrypted via TLS. This ensures the highest standards of secure communication. At the same time, all PUMA registers share the same data type, which streamlines data transfer as only a few telegrams are needed to update data.

Choose how you want your pump controller to operate — either as a standalone unit with direct communication, or integrated with Acowa HiVe, which provides a wide range of protocol types such as REST, API, and more.

User Interface and Visualization with PUMA Pump Controller

To make daily operation as smooth as possible, PUMA is equipped with a 2.4" OLED display on the front and four user-friendly control buttons.

Additionally, PUMA can be configured using the free configuration tool, AcowaZoo. This can be done locally via USB or remotely through a 4G modem connection. Alternatively, users can choose Acowa HiVe, which offers even more possibilities for efficient pump control.

Data Collection with External Equipment

PUMA fundamentally collects and logs various types of signals by using standard external equipment with 4-20 mA / 0-10V DC or standard DI (digital input) devices. This enhances its versatility and makes PUMA an ideal solution for a wide range of monitoring and logging requirements.

Three-Phase Monitoring

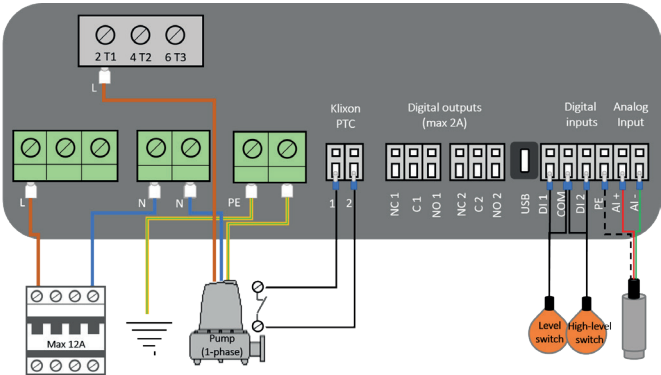
The PUMA series measures current on all three phases, providing much more detailed and relevant data compared to traditional current transformers. The unit monitors critical operational parameters, such as phase failure, ensuring full protection of the pump installation. This enhances operational reliability and provides optimal control over system performance.

Unique Features of the PUMA Pump Controller

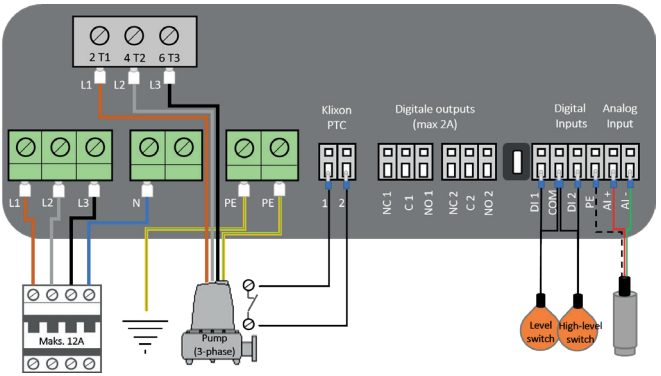
- Validated flow calculation that accurately determines the actual pump capacity
- Inflow calculation that displays the inflow profile to the pumping station
- Unique measurement of current on all 3 phases
- Specialized functions for calculating overflow, exercising, daily depth pumping, flushing, and variable start levels
- Emergency control function activated in the event of a faulty level transmitter and controlled via level float, ensuring stable operation even in failure conditions
- Built-in power bank that eliminates the need for external battery backup in case of power failure
- Firmware for the pump controller and connected equipment is continuously updated in accordance with the NIS2 directive

PUMA

Installation Guide for use with Single-Phase Pump

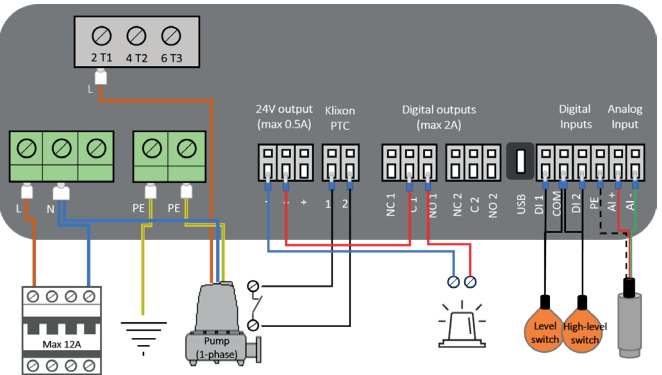


Installation Guide for use with Three-Phase Pump

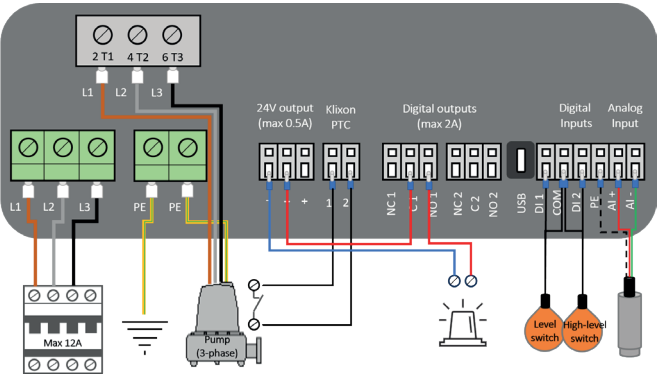


PUMA 400V

Installation Guide for use with Single-Phase Pump

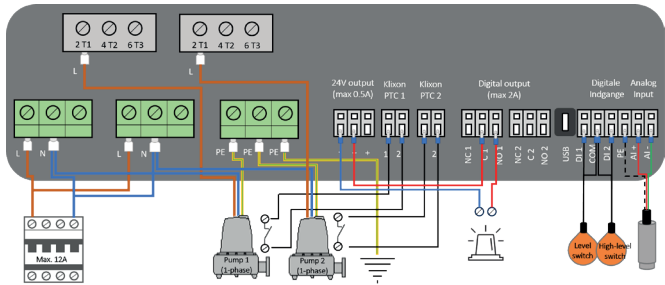


Installation Guide for use with Three-Phase Pump



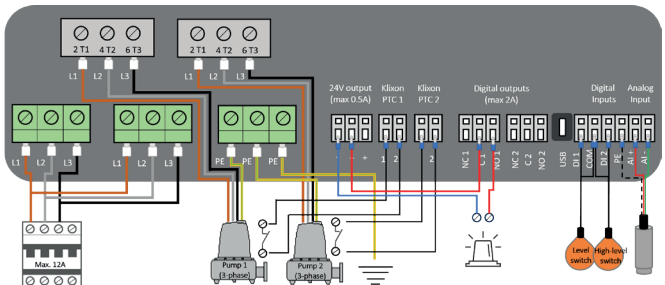
PUMA TWIN

Installation Guide for use with Single-Phase Pump via 1 Circuit Breaker

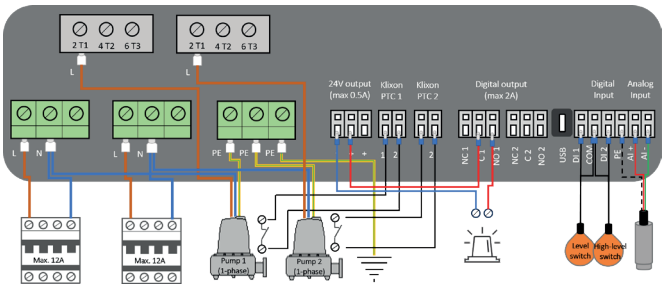


PUMA TWIN

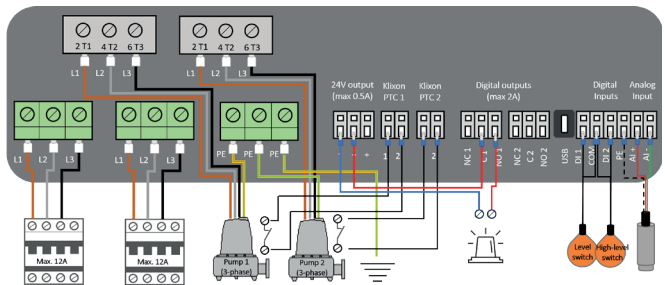
Installation Guide for use with Single-Phase Pump via 1 Circuit Breaker



Installation Guide for use with Single-Phase Pump via 2 Circuit Breakers

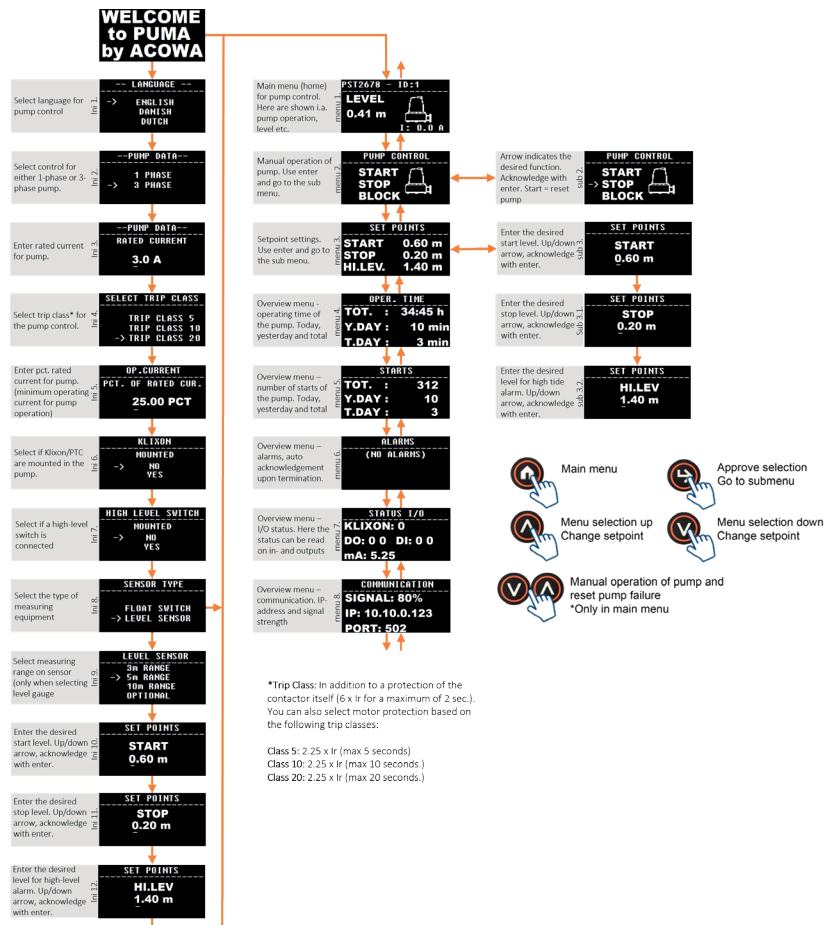


Installation Guide for use with Single-Phase Pump via 2 Circuit Breakers



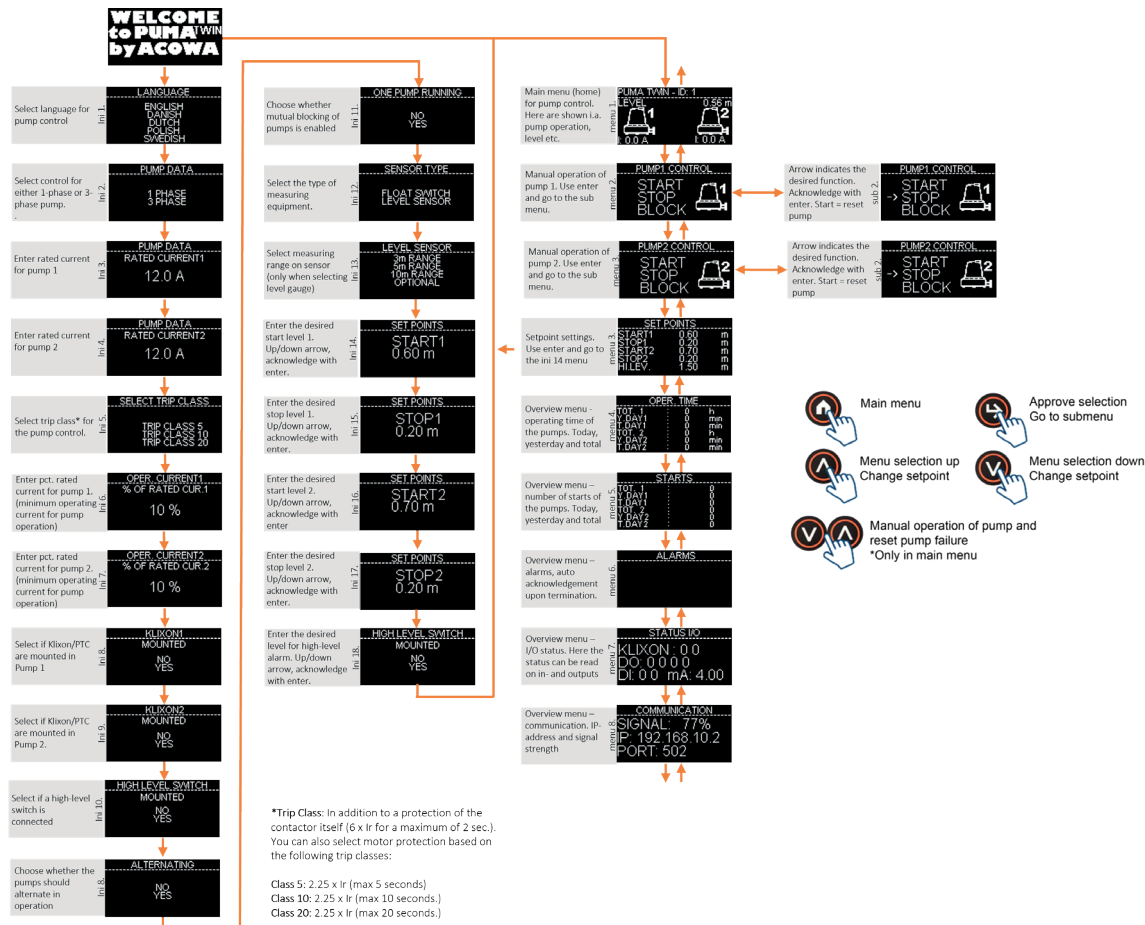
Menu Structure

PUMA



Menu Structure

PUMA TWIN



Specifications

Technical data PUMA:

Dimensions	W=237mm x H=248mm x D=98mm
Weight	1350 g
Cable Connection	0,5 – 6 mm²
Vibration (sine wave)	10-500 Hz, 1G
Free Fall	30 cm
Enclosure Rating	IP65
Power Supply	1x230V AC or 3x400V AC +10%/-20%
Frequency	50/60 Hz
Input Power Consumption	0,004 to 0,06A
Max. Fuse Rating	16A
IK Rating	6kA
System Grounding	TT
Certifications	CE

Technical data PUMA TWIN:

Dimensions	W=325mm x H=255mm x D=98mm
Weight	1750 g
Cable Connection	0,5 – 6 mm²
Vibration (sine wave)	10-500 Hz, 1G
Free Fall	30 cm
Enclosure Rating	IP65
Power Supply	1x230V AC or 3x400V AC +10%/-20%
Frequency	50/60 Hz
Input Power Consumption	0,004 to 0,06A
Max. Fuse Rating	16A
IK Rating	6kA
System Grounding	TT
Certifications	CE



Environmental Conditions:

Humidity	10% – 95% non-condensing air
Operating Temperature	-20°C to +50°C
Storage Temperature	-20°C to +60°C
Operating Altitude	Max. 2000 m above sea level
Startup Time	10-300 sec. (built-in variable startup time)

Pump Specifications:

Voltage	1-phase 230V AC or 3-phase 400V AC
Motor Size	Max 5,5 kW
Max. Current Consumption	12A
Motor Protection	3-phase electronic current measurement
Cable/Signal Length	Max 10m

Built-in Power Supply (TWIN og 400V-serien):

Output Current	Max. 500mA
Output Voltage	24V DC
Tolerance	+/- 20%

Digital Inputs:

Number of Digital Inputs	2
Electrically Isolated	No
Digital Signal	Low < 5V / < 1mA, High > 12V / > 4mA
Signal Range (Min./Max.)	0–30V DC
Cable/Signal Length	Max 100m

Analog Inputs:

Number of Analog mA Inputs	1
Electrically Isolated	No
Measurement Range	0/4–20mA
Input Impedance	Approx. 100 Ω
Measurement Accuracy	Better than 0.5% of FS
Signal Range	0-24mA
Cable/Signal Length	Max 100m

Digital Outputs:

Number of Digital Outputs	2
Electrically Isolated	Yes
Isolation Voltage	4 KV
Relay Type	Relay outputs
Cable/Signal Length	Max 100m
Constant Load	Maks. 2A @ 230Vac – AC1, Maks. 100 W @ 230Vac – AC3, Maks. 1A @ 30 VDC
Minimum Current	5 mA @ 10 V
Max. Inrush Current	6A @ 20ms.
Switching Frequency	Max 10 Hz

Products

PUMA:

Item Number	Description
1772-20225000	ACOWA-PUMA-COMPLETE-Without modem
1772-20225002	ACOWA-PUMA- COMPLETE-NB-IoT-MODEM
1772-20225003	ACOWA-PUMA- COMPLETE-ETHERNET
1772-20225042	ACOWA-PUMA- COMPLETE-4G-MODEM
1772-20220400	ACOWA-PUMA-400V- COMPLETE- Without modem
1772-20220402	ACOWA-PUMA-400V- COMPLETE-NB-IOT-MODEM
1772-20220403	ACOWA-PUMA-400V- COMPLETE-ETHERNET-MODUL
1772-20220442	ACOWA-PUMA-400V- COMPLETE-4G-MODEM
1772-20224020	ACOWA-PUMA-4G-Modem
1717-20220002	ACOWA-PUMA-NB-IoT-Modem
1772-20220007	ACOWA-PUMA-Ethernet module

PUMA TWIN:

Item number	Description
1772-20220600	ACOWA-PUMA TWIN-COMPLETE-WITHOUT Modem
1772-20220602	ACOWA-PUMA TWIN-COMPLETE-NB-IOT Modem
1772-20220603	ACOWA-PUMA TWIN-COMPLETE-ETHERNET Modem
1772-20220642	ACOWA-PUMA TWIN-COMPLETE-4G Modem
1772-20224020	ACOWA-PUMA-4G-Modem
1717-20220002	ACOWA-PUMA-NB-IoT-Modem
1772-20220007	ACOWA-PUMA-Ethernet module