

USE AND MAINTENANCE MANUAL

PROFINET GP PUMP DRIVE



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1 GENERAL INFORMATION

This manual contains information regarding the installation, use, maintenance and end of life of the component and provides indications for the most suitable behavior for correct operation. If you have any doubts about the interpretation or reading of this document, please contact the manufacturer.



DAV Tech declines any responsibility relating to improper use of the component. Observe the specifications in this manual.



Read this manual before handling the component or performing any action on it.



The manual is an essential safety requirement and must accompany the component throughout its life cycle.



It is asked to keep this manual, together with the attached documentation, in good condition, legible and complete. In addition, it must be stored in the vicinity of the component or, in any case, in a place accessible and known to all personnel who use the component itself or who must perform maintenance or inspection interventions. If the manual deteriorates or is no longer complete, a copy must be requested from the manufacturer, indicating the code of the manual and the revision.



The manual is intended for personnel who use the component (operators), who perform maintenance on it (maintenance technicians), and for personnel who must perform checks or inspections. The manufacturer is not liable for damage to the component caused by personnel who have not followed the instructions in the manual.

If you have any doubts about the correct interpretation of the information contained in this manual, please contact the manufacturer.

Intended use is the one described in the chapter below, and misuse is any other use that is not described in this manual



DANGER!

Before operating the component or performing any action on it, read this manual carefully.



The component may only be used by trained and authorized operators and for the sole purpose for which it was designed and manufactured.



The component is manufactured in compliance with the technical safety standards in force at the time of its construction.

WARRANTY

During the design phase, a careful choice of materials and components to be used in the project was made and they were subjected to regular testing before delivery. All the elements, from the connecting parts to the control parts, have been designed and manufactured with an adequate degree of safety, such as to be able to withstand stresses greater than those of normal use.

For other notes relating to the warranty of the machine, please refer to point 7 of the "GENERAL CONDITIONS OF SALE AND WARRANTY" form sent during the offer or confirmation phase of the order itself.

1.1 Symbology

Below are the symbols that are used to give a greater impact to the importance of the concept you want to give.



WARNING!

Refers to a warning that could lead to minor damage (minor injuries, damage to the component requiring maintenance work).



DANGER!

It refers to a major event that could cause major damage (death, permanent injury, irreversible breakage of the component).



NOTE. Indicate relevant information or insight.



OBLIGATION. It indicates a task that must be performed, related to both the component and the manual.



REFERENCE. Links to an external document that is important to view

In addition, the list of symbols is integrated with that of the personnel responsible for using the component and its function, together with other symbols used within the manual.



Operator

A (qualified) person capable of operating the component, adjusting, cleaning, starting or resetting the component. The operator is not authorized to perform maintenance.



Mechanical maintenance technician

Qualified technician able to carry out mechanical, adjustment, maintenance and routine repair work described in this manual. He is not authorized to carry out interventions on electrical systems in the presence of voltage.



Electrical maintenance technician

Qualified technician able to carry out electrical, adjustment, maintenance and routine repair work described in this manual. It is able to work in the presence of voltage on electrical cabinets and junction boxes. He is not authorized to carry out interventions on the mechanical side.



Manufacturer's technician

Qualified technician made available by the manufacturer to carry out operations of a complex nature in particular situations, or in any case as agreed with the customer.

1.2 Reference standards

The reference standards and directives of this manual are the following:

Directives

- 2014/35/EU – Low Voltage Directive;
- 2014/30/EU – EMC Directive

1.3 Declaration of conformity

Manufacturer's name: DAV Tech Srl
Address: Via G. Ravizza, 30, .36075, Montecchio Maggiore (VI)

DECLARES THAT THE COMPONENT

Component: DRIVE
Model: DMD1204LIN
Year: 2024
Intended Use: Control of Low Voltage Direct Current (DC)
Components

IT COMPLIES WITH THE FOLLOWING DIRECTIVES:

- **2014/30/EU:** of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility (recast).
- **2014/35/EU:** of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment intended for use within certain voltage limits;

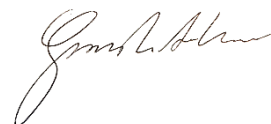
IT ALSO DECLARES THAT:

- Undertakings are undertaken to provide, in response to a suitably justified request from the national authorities, relevant information on this partly completed machine;
- The technical file was prepared by Andrea Grazioli, via Ravizza, 30, Montecchio Maggiore (VI), IT.

Montecchio Maggiore, 03 June 2026

The legal representative

Andrea Grazioli



1.4 Glossary

The following are the most used terms within this manual with their meanings.

TERM	DEFINITION
Enable	Term that defines the act of preparing (enabling) an action. The action will be triggered as soon as the criteria are met, which consequently leads to the activation of the enabled action.
Activate	The action that is performed instantaneously when the control is activated.
Manufacturer	Natural or legal person who designed and manufactured the component covered by this manual.
N.A.	Not Applicable, i.e. it indicates that it is a field that does not apply to this particular manual and that it cannot be integrated into the component.

1.5 Service and manufacturer contact details

For any reason relating to the use, maintenance or request of spare parts, the customer must contact the manufacturer (or the service center if present) directly, specifying the identification data of the component.

The customer can make use of the technical and commercial support of local agents or importers, who are in direct contact with the company DAV Tech Srl.

Company name	DAV Tech Srl
Postal address	Via Ravizza, 30, 37065, Montecchio Maggiore (VI) – (IT)
Phone	+39 0444 574510
Fax	+39 0444 574324
e-mail	assistenza@davtech.it
Service	service@davtech.it
Website	www.davtech.it

2 PRESENTATION AND OPERATION

This drive is designed to drive a gear pump (GP). In addition, this drive model has been designed to work via ProfiNET connection.

In other words, the function of this component is:

CONTROL OF LOW-VOLTAGE MOTORS

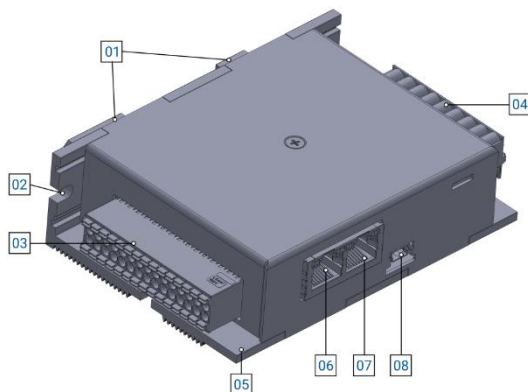


Figure 01 – Drive detail

No.	DESCRIPTION
01	Mounting on metal rail
02	Wall mounting with screw
03	30-pin input/output signal connector (M2)
04	9-pin power connector and motor connection (M1)
05	Thermal dissipation plate
06	Profinet RJ45 input
07	Profinet input
08	USB input



WARNING!

Below it's explained only how the drive works; however, this is sold together with a GP pump. For specific pump functions (such as setting the pump working phases and technical data of the pump itself) you must read the appropriate manual.

OPERATION

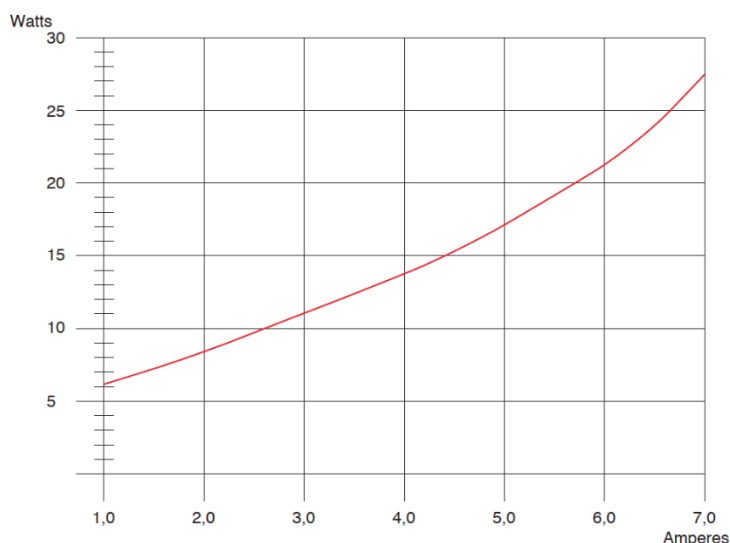


WARNING!

The drive already contains software for controlling the GP pump (activation, dosage, outlet valve). Modifying the program that is already present can impair the functionality of the component.

The program already present inside the component can be controlled by an external device, present on a customer control system, via ProfiNET connection.

The thermal dissipation scheme in relation to the current supplied is shown below:



It must be considered that the current required for the operation of a GP pump is equal to 6.6 A.



An optional pressure sensor can also be connected to it to detect the outlet pressure to the pump itself. For the technical characteristics of the sensor, please refer to [chapter 2.2](#), and for the wiring see [chapter 5.2.4](#)

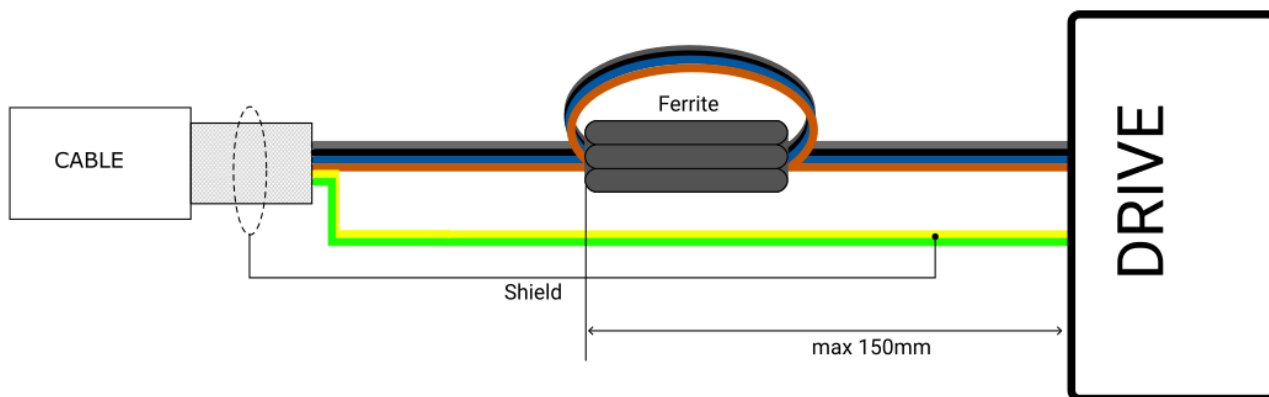
WARNING!



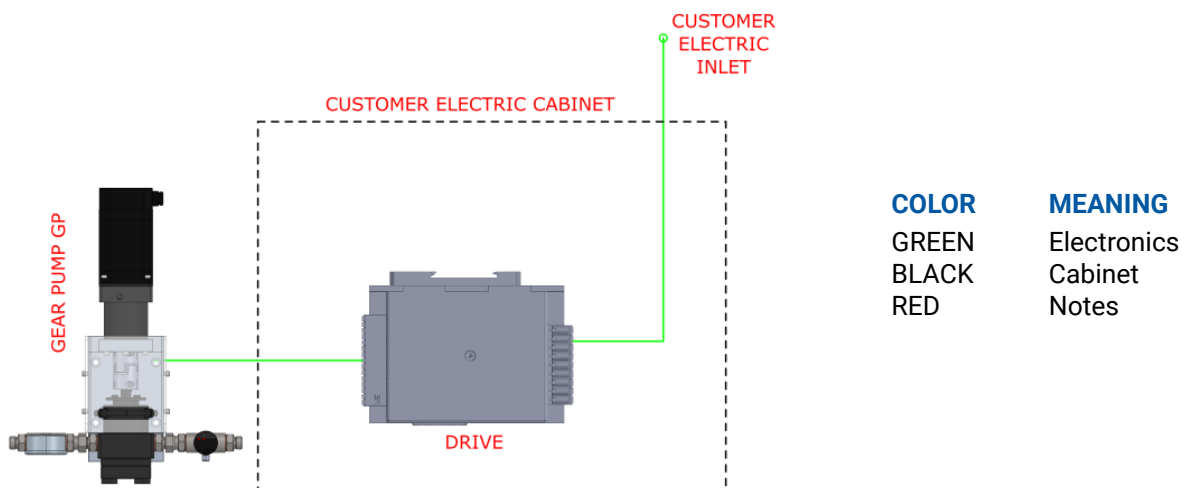
To reduce interference noise, it is recommended to use the ferrite ring supplied with the driver. The wires that need to run inside the ferrite are the motor phase wires, while the shield and ground wires need to run externally. In addition to this, the motor phase cables must perform one and a half windings around the ferrite, as per following image.



The use of ferrite is useful to bring the drive within EMC class C2 emissivity levels. If not in use, the device falls into class C3



The filter is composed of low-grade ferrite which has high losses at radio frequencies: in this way the filter works as a very high impedance at those frequencies, cutting out certain disturbances. The technical characteristics of the filter are specified in [chapter 2.2](#). For the connection methods, however, please refer to [chapter 5.2.1](#)



2.1 Exploded view

N.A.

2.2 Technical data

All the technical characteristics concerning the component of this manual are indicated below.

GENERAL TECHNICAL CHARACTERISTICS		
Description	UdM	Values
Model	\	DMD1204LIN
Drive	\	Electric
Input voltage	VDC	24 ÷ 65
Maximum input voltage	VDC	85
Maximum current consumption logic part	A	0.3
Maximum current consumption pump part	A	6.6
Average Output Current (RMS)	A	4
Peak Output Current	A	6.5
Current control type	\	Dual MOSFET H-bridges
Current Control Frequency	Hz	20 (50µs)
PWM outputs	\	20 KHz center-weighted PWM
Feedback	\	Encoder incrementale line driver o push pull (PNP o NPN)
Type of byte encoding	\	Big Endian

GENERAL PURPOSE DIGITAL INPUTS		
Description	UdM	Values
Number	\	9 + 3 (superimposed on the service entrances)
Type	\	PNP TTL compatible up to 30 VDC
Function	\	Configurable software

GENERAL PURPOSE DIGITAL OUTPUTS		
Description	UdM	Values
Number	\	4
Type	\	PNP +24 VDC
Current	mA	100 per channel
Protections	\	Temperature
		Short Circuit
Function	\	Configurable software

DIGITAL SERVICE INPUTS		
Description	UdM	Values
Number	\	6, superimposed on the general purpose entrances
Type	\	PNP o NPN from 5 to 30 VDC
Current consumption	mA	8
High Read Level Threshold	V	> 2.2
Low Read Level Threshold	V	< 0.8
Features	\	High-speed inputs

ANALOG INPUTS		
Description	UdM	Values
Number	\	3 (optional)
Resolution	Bits	12
Range	VDC	0 ÷ 10 (±10V optional on Ana.inp. and Ana.inp.1)

CABLES

Description	UdM	Values
Recommended cable cross-section	mm ²	1 (cable length < 10 m)
	mm ²	2.5 (cable length > 10 m)
Maximum recommended cable length	m	20
Recommended cable type	\	twisted and screened

FERRITE

Manufacturer	Fair-rite	WURTH Electronics
Code	1463444	74271132
Outer diameter (mm)	23.7	24.5
Inner diameter (mm)	10.15	8.5
Length (mm)	39.4	40.5
25 MHz impedance (Ω)	144	141
Impedance at 100 MHz (Ω)	240	241

PRESSURE SENSOR (OPTIONAL)

Manufacturer	U.d.M.	Value
Measured pressure range	Bar	0 ÷ 200
Working voltage range	V	0 ÷ 10

SAFETY FEATURES

Description	UdM	Values
Operating Conditions	Overvoltage category	III
	Degree of pollution	2 or better
	Protection class	IP 2X (EN50178)
Impact resistance	m/s ²	19.6
Vibration resistance	m/s ²	4.9
Operating Temperature	°C	5 ÷ 45
Maximum altitude	m	1000
Protections included	\	Surges
		Short Circuit
		Undervoltages
		Temperature elevate
		Tracking
		Location

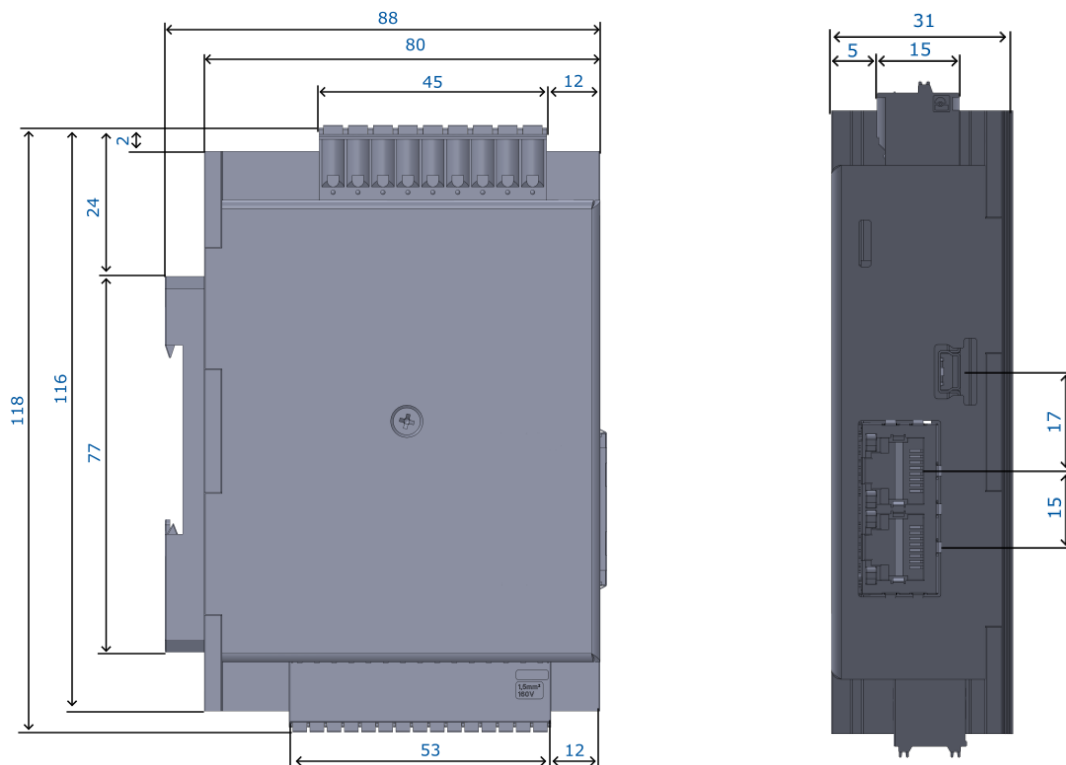
ENVIRONMENTAL CHARACTERISTICS

Description	UdM	Values
Working Ambient Temperature	°C	5 ÷ 40
Storage Ambient Temperature	°C	-20 ÷ 70
Permissible non-condensing humidity	%	5 ÷ 85
Installation location features	\	No corrosive gas
	\	No various powders
	\	No moisture or fluids (cutting oil type)

DIMENSIONAL AND WEIGHT CHARACTERISTICS

Description	UdM	Value
Component length (min ÷ max)	mm	88.61
Component depth (min ÷ max)	mm	125.4
Component height (min ÷ max)	mm	33
Component weight	kg	0.32

Component



It's possible to request the 3D of the component in the desired version from the manufacturer without any obligation.

3 SAFETY

The following is a list of warnings regarding the component covered by this manual. Please read carefully before proceeding to the next chapters.



FIRE/EXPLOSION HAZARD!

This component is not designed to work in an ATEX environment.



DANGER!

Make sure that you have connected the connectors correctly and secured the cables. Incorrect wiring could result in electric shock, fire, equipment damage, or injury.



DANGER!

Do not expose the cords to sharp objects or edges, excessive pressure or pulling, or objects that may cause them to be pinched, as this may result in electric shock, fire, equipment damage, or injury.



DANGER!

Wait 5 minutes after powering off before removing, changing the wiring, or inspecting the device, and only authorized personnel can perform these operations.



DANGER!

Do not remove cables, connectors, or other elements of the component while it is in operation



DANGER!

Do not touch the component while it is in operation, as it may reach high temperatures and cause burns.



WARNING!

Modifications to the component must not be made to achieve performance other than that for which it was designed and built, unless authorized by the manufacturer.



WARNING!

During installation, protections against over currents, mass losses, overtemperatures and emergency stop devices must be provided



WARNING!

It's asked to be sure that the device is properly grounded. Connect the earthing terminal in accordance with the standards for electrical installations (ground resistance $\leq 100 \Omega$)

**WARNING!**

Do not carry the drive by the cables, as it can cause malfunction or injury.

**WARNING!**

Do not step on or place heavy objects on the component, as it can result in malfunction or injury

**WARNING!**

Do not cover the inlets, outlets and ventilation slots of the component as this can cause overheating resulting in fire or malfunction of the component. In addition, foreign bodies, such as metal fragments or liquids, must be prevented from entering the product.

**WARNING!**

The component must only be supplied with voltages isolated from the mains voltage and within the limits indicated. If you do not respect these limits, you risk ruining the component.

**WARNING!**

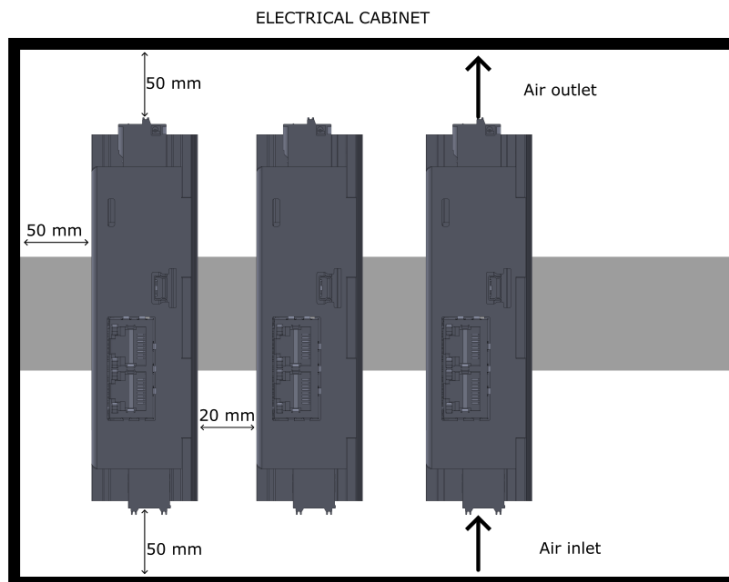
Keep the power and signal lines at a distance of at least 300mm and use twisted pairs or shielded cables. Also, use cables with a suitable cross-section for their use.

4 TRANSPORT AND HANDLING

Once the goods are received, it's recommended to check that the packaging is intact and that there is an exact correspondence with the material ordered.

5 INSTALLATION

The component has been designed to be installed inside an electrical panel, in communication with a PLC and which controls a GP pump. There must be at least 50mm of space around the component to properly cool the component itself; In addition, there must be at least 20mm between one component and another, as shown in the diagram below.



WARNING!

The ventilation points must not be covered and no foreign objects must enter them, otherwise there is a risk of malfunctioning of the component, possibly overheating and risk of fire.



It is recommended that you perform a component check before beginning the installation. If it is evidently damaged, please contact the manufacturer.



WARNING!

Please remove the packaging with the utmost care. If damage is caused to the component, the manufacturer is not liable.



Dispose of the packaging correctly, considering the different nature of the components and following the regulations in force in the country.

5.1 Placement

N.A.

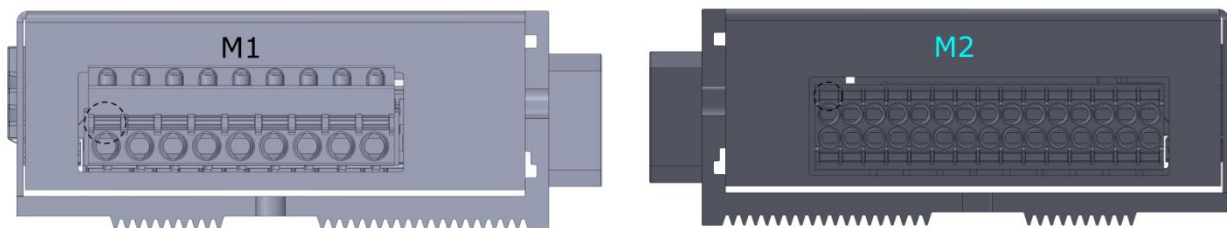
5.2 Connections

In this chapter, we want to explain the connection method that must be used for the component. The following types of connection are provided:

- How to connect the cables to the M1 and M2 terminal blocks;
- How to make the connection of the component ground;
- How to install and uninstall the component on the electrical panel bar;
- Electrical connection;

5.2.1 Cable connection on M1 and M2 terminal blocks

You can see that on both terminal blocks there are buttons (for each pin) that can accommodate a small flat screwdriver (see figures below). By placing a screwdriver on them, you can press and open the pin where the cable must be inserted to perform the wiring. Similarly, by pressing on the same points, you can remove the cables.



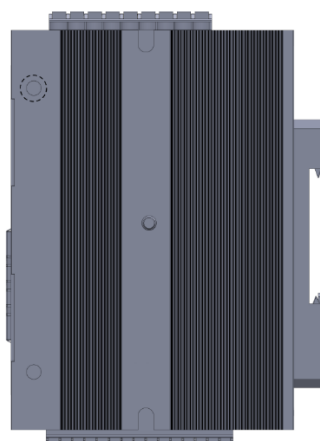
5.2.2 Component Grounding Connection

In the refrigeration area of the component, there is a screw with a plate identifying the grounding. In this case, a cable with a slot connection must be provided, as in the figure, unscrew the screw and insert the screw in its place, with the grounding cable locked inside it.



WARNING!

To be effective, the cable must touch the screw and the wall of the component.



Example of a slot connection to be used

5.2.3 Installation and removal of the electrical panel from the bar

To install the component on a panel bar, you must insert the component from the movable side located under the bar and push up while inserting the other side. When you hear a docking sound, the component is in place.

To remove the component from a panel bar, you must first push it upwards and then rotate it perpendicular to the bar to remove the component itself.

5.2.4 Electric

Authorized personnel		PPE to wear					
Component status	Component installed in place						
Power Values	See chapter 2.2						
Necessary preparations	Electrical cable with correct power supply						
Materials needed	N.A.						
Equipment needed	N.A.						

WARNING!

Attention must be paid to the following aspects when connecting the component:



- ALWAYS connect the component ground;
- NEVER reverse the power supplies (48 VDC and 0 VDC);
- Avoid short circuits and polarity reversals

Any aspect listed above that you do not pay attention to will ruin the component or burn it, making it ineffective.



The electricity connection is at the expense of the customer.



It is advisable to see [chapter 2.2](#) to check the voltages, currents and types of cables to be used.

The drive has two separate power supplies, one for logic (24VDC) and one for power (48VDC); This is to insert the power of the pump into a safety circuit, in case it is necessary to cut power to it, even if the pump is not considered dangerous as it has no external movement parts. In addition, before proceeding with the connection, it must be checked that the following are earthed:

- The power supply;
- The drive case;
- The power connection on the terminal block;
- The speaker cable shield;
- The encoder cable screen

POWER CONNECTOR (M1)

The power connector (No 04, Figure 01, [chapter 2](#)) is used to bring power to the drive and connect the power supply to the motor. It is recommended to keep about 10mm of length of uncovered cable, i.e. copper wires available to make the connection, or 10mm of ferrule (if you use it), as in the following image:

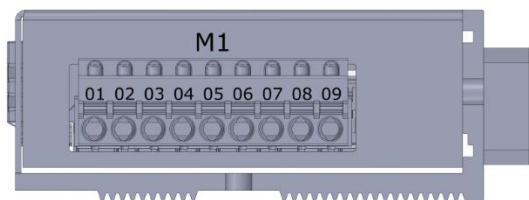


Both flexible and solid conductors may be used, with or without collar, with or without cross-section included as recommended in [chapter 2.2](#).



To reduce electromagnetic interference (EMI) it is required to install a filter ferrite at a maximum distance of 150mm from the drive on the motor cable, as explained in [chapter 2](#). The filter is composed of low-grade ferrite that has high losses at radio frequencies, so the filter works as a high impedance at those frequencies, acting as a filter for those disturbances.

Below is a list of the connector pins and their function:



PIN	Signal Name	Description
01	Phase B-	Phase B- Output
02	Phase B	Phase B Output
03	Phase A-	Phase A Output-
04	Phase A	Phase A Output
05	Ground	Bulk
06	Ground	Bulk
07	Common	Common reference of DC supply voltages
08	Power supply	Power stage power supply DC input (48-65 VDC)
09	Logic supply	Control stage power supply +24VDC input

SIGNALS CONNECTOR (M2)

The control connector (No.03 Figure 01 [chapter 2](#)) has the function of supplying the IO side of the drive, connecting the encoder signals, connecting the inputs and outputs of the digital signals and connecting the analog inputs.



WARNING!

The digital outputs are protected against overloads (max. 500mA) and short circuits; In the event of overload, the output switches off until the fault is removed. If inductive loads (such as relays, solenoid valves) are to be driven, connect a flyback diode in parallel to the load.



WARNING!

Some inputs share the same pins as other signals. Never activate an output when the relative pin is used as an input, to avoid damage to the connected devices

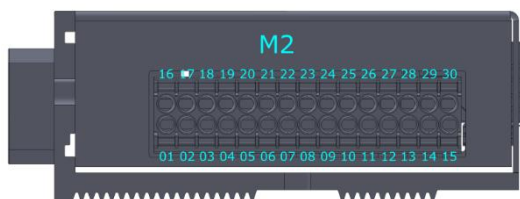


On the following page you can see the general functions of the various driver pins.

PIN	General purpose inlet	General purpose outlet	Service entrances	Analog Inputs	Analog outputs	Power supply
01						5VDC encoder (max 100 mA)
02			Common encoder inputs			
03			Channel A-motor encoder			
04			Channel B-motor encoder			
05			Channel Z- motor encoder			
06	Digital Input 5		Channel A+ motor encoder			
07	Digital Input 6		Channel B+ motor encoder			
08	Digital Input 7		Channel Z+ motor encoder			TOP Input
09	Digital Input 8		Channel A+ external encoder			Forward limit switch
10	Digital Input 9		Channel B+ external encoder			Reverse limit switch
11	Digital Input 0		Channel Z+ external encoder			
12	Digital Input 1					
13		Digital Output 0				
14						5VDC output (max 100 mA)
15	Common Digital Input	Common Digital Output				SSP Input OK
16						5VDC output (max 100 mA)
17			Common encoder inputs			
18		Digital Output 5				SSP Output OK
19					Analog output	
20				Common Analog I/O	Common Analog I/O	
21				Analog Input		
22		Digital Output 2		Analog Input 1		
23		Digital Output 3		Analog Input 2		
24			Channel A- external encoder			
25			Channel B- External encoder			
26			Channel Z- external encoder			
27	Digital Input 2	Digital Output 6				
28	Digital Input 3	Digital Output 7				SSP Input 1
29	Digital Input 4	Digital Output 4				SSP Input 2
30		Digital Output 1				

SIGNAL CONNECTOR CUSTOMIZATION (M2) FOR GP

The program inside the drive already provides the following connections:



PIN	Program Function
01	Not used
02	Not used
03	Not used
04	Not used
05	Not used
06	Encoder channel A
07	Encoder channel B
08	Encoder channel Z
09	Predetermined dosage
10	Alarm Reset
11	Not used
12	Enable
13	Alarm
14	Not used
15	Reserved
16	Not used
17	GND
18	Reserved
19	Not used
20	Analog GND
21	Pressure sensor
22	End of dosage
23	Ongoing dosing
24	Not used
25	Not used
26	Not used
27	JOG Dosage
28	In 1 electr. Power
29	In 2 electr. Power
30	Ready drive



All signals are PNP

Below there is a description of the points written above, highlighting their function.

ELECTRONIC POWER DISCONNECTOR (PINS 28 & 29)

Using the SSP 1 and SSP 2 input, the drive's built-in electronic disconnect switch can be controlled; with both signals at 24VDC, you can power the power stage of the drive.

ENCODER SIGNALS

The drive provides a connection for differential encoder signals; You can then connect the encoder line driver directly to the drive.

DRIVE LOGIC

The drive has been designed to be able to perform all the dosing functions required for a screw pump and can all be parameterized via ProfiNET TCP/IP; Without this communication, you must use the drive with only one static data set. Using the inputs (or variables) via ProfiNET you can activate the following functions of the drive:

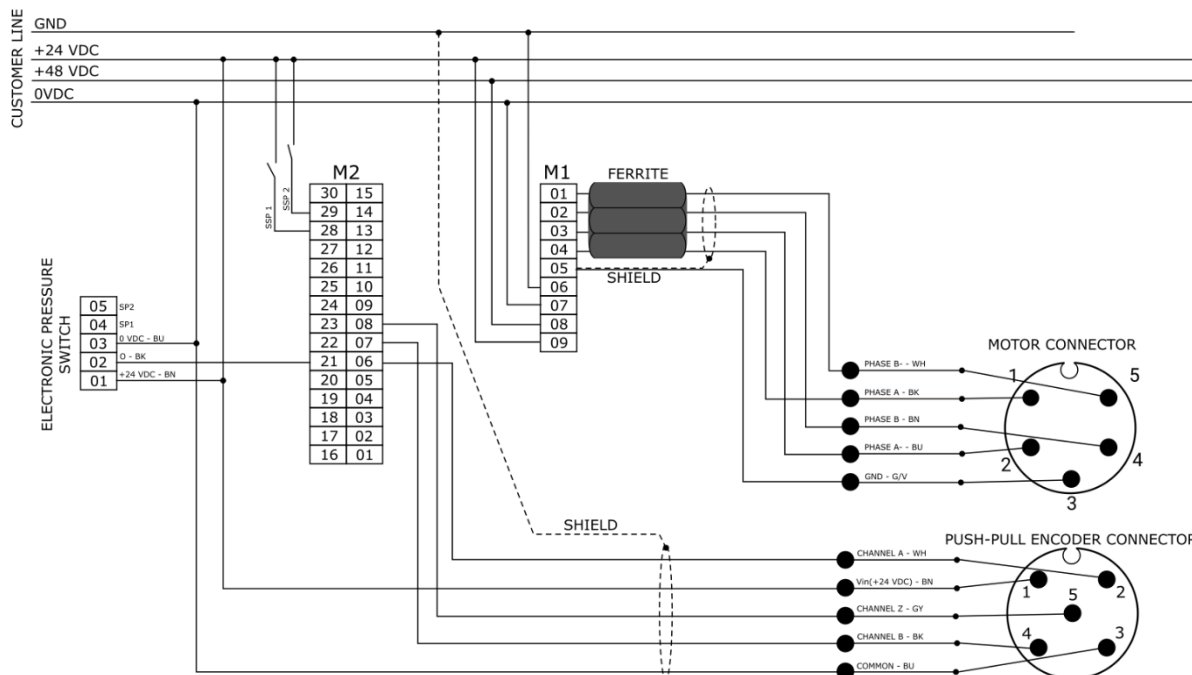
- **ENABLE:** with digital input 1 (PIN 12) it is possible to pair the pump motor; if the power supply is lacking, the SSP signals or the pump is physically disconnected, the drive gives the power timeout alarm;
- **JOG DOSING:** With digital input 2 (PIN 27) it is possible to activate the pump to dose at a constant speed. The pump stops dosing as soon as the control is removed;
- **PREDETERMINED DOSING:** With input 8 (PIN 09) you can activate the dosing of a set quantity. The inlet must be kept active until the end of dispensing, in which the "end of dosing" state is activated, ending the dosing;
- **ALARM RESET:** Input 9 (PIN 10) enables alarm restart;
- **ALARM:** With digital output 0 (PIN 13) the alarm status is triggered when one or more alarms are active inside the drive;
- **READY:** With digital output 1 (PIN 30), you have the status that determines that the motor is in torque and there are no active alarms. This indicates that it is ready to perform a machining;
- **END OF DOSAGE:** With digital output 2 (PIN 22), the end of dosage status is activated, i.e. the state that confirms the end of a predetermined dosage;
- **DOSING IN PROGRESS:** With digital output 3 (PIN 23) the command is activated that allows you to connect a solenoid valve at the exit of the pump (with a programmable delay).

PRESSURE SENSOR

A pressure sensor can be connected to the pump discharge with a full scale of 200 bar, with 0 – 10 VDC output (see wiring diagram)

CONNECTION EXAMPLE

Below we want to give a graphic example of connecting the drive to a GP pump.



Variants to GP pump cables are listed below:

GP ENGINE CONNECTOR PIN NUMBER	COLOR	DESCRIPTION	PIN DRIVE
01	BLACK	PHASE A	M1.4
02	BLUE	PHASE A-	M1.3
03	YELLOW-GREEN	GROUNDING	M1.5
04	BROWN	PHASE B	M1.2
05	WHITE	PHASE B-	M1.1

GP PUSH-PULL ENCODER CONNECTOR PIN NUMBER	COLOR	DESCRIPTION	PIN DRIVE
01	BROWN	+24 VDC	+24 VDC
02	WHITE	CHANNEL A	M2.6
03	BLUE	COMMON	0 VDC
04	BLACK	CHANNEL B	M2.7
05	GREY	CHANNEL Z	M2.8

5.3 Commissioning

The commissioning of the component is carried out once the positioning and connection of the connections has been completed. Before commissioning the component, the following checks must be carried out:

- Check that the connections have been connected correctly;
- Check that the component is free of dirt or residues of various kinds;
- Check that the component is connected well in its position;
- Check the distances between the various components, that they are respected;



WARNING!

If even one of the above points does not comply, commissioning must not be carried out. Commissioning should only be carried out when all points have been successfully completed.

6 SOFTWARE

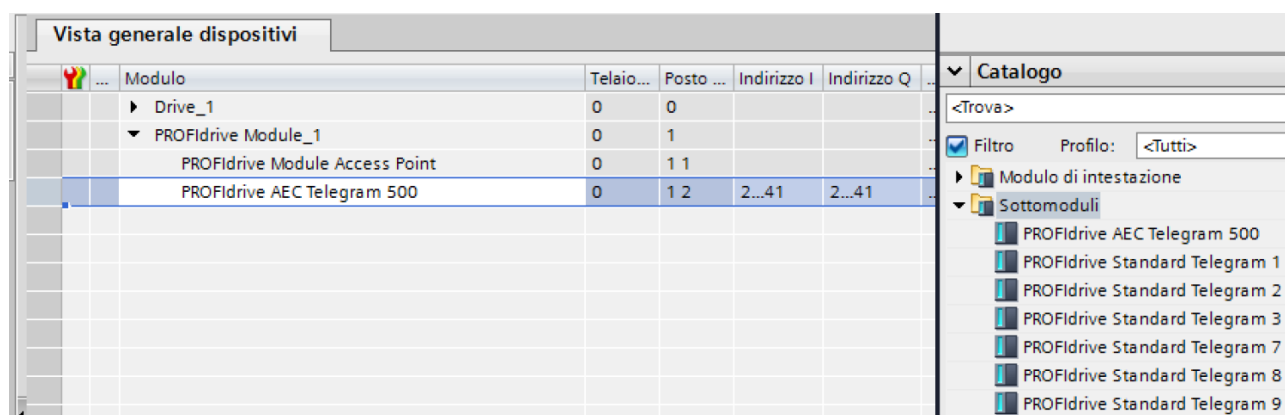
In this component there can be the following ways of interfacing with the customer system:

- Interfacing via TCP/IP profinet;

These types of interfacing take advantage of the ethernet ports on the component (No.06 and 07, Figure 01, [chapter 2](#)).

6.1 Interfacing via ProfiNET TCP/IP

Using this mode, one or more drives can be inserted into the PLC network configuration using the GSDML file provided. The real-time data exchange must be configured in the drive using the "PROFIdrive AEC Telegram 500" module, as shown in the image.



In addition, this module provides for the exchange of 10 INT32 variables for the inputs and 10 INT32 variables for the outputs (40+40 Bytes), as shown in the following tables:

PLC INPUT	DRIVE VARIABLES	FUNCTION	BIT DESCRIPTION
Var_1	V111	STATUS	Bit 0 – Alarm Bit 1 – Ready Bit 2 – End of dosage Bit 3 – Dosing in progress Bit 4 – Power Enable Alarm Bit 5 – Standby Bit 6 – Pressure Alarm
Var_2	V112	Encoder position	Relative position of the encoder, it is reset at the end of the jog dosage and at the completion of the predetermined one. Remains with interrupted predetermined dosage (200 bar sensor)
Var_3	V113	Pressure	Outlet pressure in hundredths of a bar
Var_4	V114	Analog Input	Analog input value 4095 = 10V = 200 bar
Var_5	V115	Last dosage pressure	Last dosage pressure in hundredths of a bar
Var_6	V116	Rstflag	Drive RSTFLG Log Value Bit 0 – Drive Enabled Bit 1 – Alarm Actuation Bit 2 – Synchronized motor dimension (zero axis) Bit 3 – Engine in motion Bit 4 – Engine in acceleration Bit 5 – Constant Speed Motor Bit 6 – Motor Decelerating Bit 7 – Information in the RstscIIP Register Bit 8 – Home Ended with Error Bit 9 – Current State (0 = CurOff ; 1 = CurON) Bit 10 – Motor in place Bit 11 – Chase Error Bit 12 – Motor moved during disabled state
Var_7	V117	Ralarm	RALARM register value of the drive Bit 0 – HW Overcurrent Bit 1 – SW Overcurrent Bit 2 – I2T Bit 3 – Position Error Bit 4 – Chase Error Bit 5 – Overload digital output Bit 6 – Over Temperature Bit 7 – Overvoltage Bit 8 – Undervoltage Bit 9 – Encoder Timing Error Bit 10 – Phase A motor disconnected Bit 11 – Phase B motor disconnected Bit 12 – Positioning Timeout From 13 to 15 bit – Reserved
Var_8	V118	PID Out	Not used in Mode 0
Var_9	V119	Out speed	Not used in Mode 0
Var_10	V120	Current error	Not used in Mode 0

PLC INPUT	DRIVE VARIABLES	FUNCTION	BIT DESCRIPTION
Var_1	V101	Controls	Bit 0 – Free
			Bit 1 – Enable
			Bit 2 – Continuous dosing
			Bit 3 – Predetermined Dosage
			Bit 4 – Alarm Reset
			Bit 5 – EV Output Control
Var_2	V102	Dosing speed	In rpm
Var_3	V103	Dosage quantity	Dosage steps 2048 = 1 engine rpm
Var_4	V104	Reserved	-
Var_5	V105	Reserved	-
Var_6	V106	Ramp	Acceleration and deceleration in rps ² *100
Var_7	V107	Maximum pressure	Maximum pressure allowed in hundredths. At "0" the check is disabled
Var_8	V108	Mode	Must be set to 0
Var_9	V109	Delay dispensing	Delay (in ms) between dosing control and pump movement
Var_10	V110	Delay suck back	Suck back delay in ms

7 PROCEDURE

In this chapter it's explained the main configurations that can be used on the component covered by this manual.

There are no special procedures, apart from those indicated in [chapter 5.2](#)

8 MAINTENANCE

This component does not require routine maintenance.



WARNING!

If the component needs to be checked, the power supply must be removed before any operation on the component can be started.

9 TROUBLESHOOTING

This chapter deals with the most common problems that may arise when using the component of this manual.



WARNING!

Once the operator has found a problem or assumes that there is a problem, they must call the technician in charge of maintenance. Maintenance should always be performed by a specialized and qualified technician.

DEFECT	CAUSE	SOLUTION
Drive alarm	Cable connection	Check that the cables are properly connected
No communication with PLC	Wiring	Check that the cables are properly connected
	Configuration	Check that the Ethernet LED is flashing correctly
Drive won't turn on/respond	Cable connection	Check that the ProfiNET name you set matches the name in the PLC network design
The drive has a high temperature to the touch	Clogged cooling system	Check that the power cables are properly connected
		Clean the cooling zone of the component

10 END OF LIFE

We recommend that you commission specialist companies for this purpose and must always observe the applicable laws on waste disposal.