

CONNECT - I/O interface

CONNECT**EN**

Operation manual



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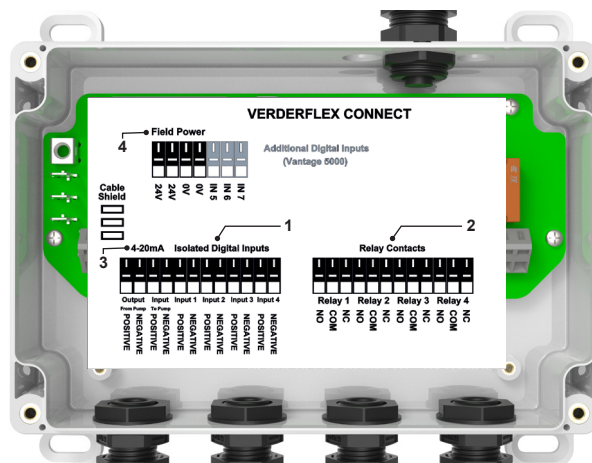
a **VERDER** company



The *Verderflex Connect* features:

- 4x single pole relay outputs
- 4x isolated IEC 61131-2 Type 3 inputs
- Pass-through for 4-20mA input and output from pump
- Connections are via screwless terminal blocks

In addition, the Vantage 5000 version has pass-through for three additional pump-specific inputs.



1. Pump Digital Inputs:

Low level (inactive) voltage		High level (active) voltage		Hysteresis	Input current
Min.	Typ.	Typ.	Max.	Typ.	Max.
8.7V	9.2V	10.4V	10.95V	1.2V	2.47mA

These inputs have two terminals; Positive(+) and Negative(-). The inputs have protection against reverse polarity and over voltage to 60V. These inputs have basic isolation from the pump 0V reference. If no signal is present on these inputs then the respective pump input will default to the inactive state.

Input assignment:

Isolated inputs					Non-isolated inputs		
Input 1	Input 2	Input 3	Input 4		IN 5	IN 6	IN 7
Vantage 5000	Stop	Start	Direction	Manual / Auto	Product source empty	Product destination full	Bund detect
Ds500 / Ds4F	Software selectable - see manual				N/A		

NOTE:

IN's 5, 6, 7 are not isolated and do not comply with IEC 61131-2. Instead, they are inactive when not connected and active when connected to the *Field Power* 0V terminal. Refer to the Vantage 5000 manual for details of how these functions operate.

On the Ds range pumps (Ds500+ / Ds4F) the function of the four inputs can be assigned in software. Please refer to the appropriate manual for more information.

2. Relay Outputs:

These are controlled by the four pump outputs of a Vantage/Ds pump. The trigger for these outputs is configured via the pump software – refer to the pump manual for more information.

Relay specifications:

Type	Rating
SPDT	5A at 250V AC / 30V DC (resistive)

For inductive loads, appropriate protection or derating should be applied.

In all cases, reducing the load will increase the life of the relay.

Terminal connections:

Contact	Function
COM (Common)	The single "Output" terminal for the controlled circuit. It is connected to either the NC or NO terminal, depending on the state of the connected pump output.
NO (Normally Open)	Pump Output Active: Connected to the COM terminal. Pump Output Inactive: Disconnected from the COM terminal.
NC (Normally Closed)	Pump Output Active: Disconnected from the COM terminal. Pump Output Inactive: Connected to the COM terminal.

3. 4-20mA

The 4-20mA input and output from the pump are passed through to the labelled connections. These should be connected as indicated in the product manual. No isolation or further protection is provided.

4. Field Power

A 24V 'Field Supply' is provided, sourced from the pump. This can supply up to 50mA and can be used with passive devices such as switches to trigger the digital inputs.

NOTE: When this supply is used, it is important to ensure there is also a connection between the 0V terminal and the ground / negative reference of the connected equipment. When used with the isolated digital inputs, this is the negative terminal of the input used. This will breach the isolation barrier, so these inputs are no longer isolated.

Cable Shield

Three 6.35mm (¼") spade terminals are provided for the termination of cable shields. It is the responsibility of the installer to provide a suitable connection to system earth to provide effective termination.

It is recommended that right-angle spade connectors are used to avoid wires preventing the lid from closing fully.

Cable Entry

Four M16 glands are fitted to the enclosure, which can clamp cables with an OD between 3 and 8mm. Ensure glands are properly tightened to retain sealing of the enclosure. If a gland is not needed it should either be sealed with a suitable bung or replaced with a blanking piece.

Terminal Blocks

The terminal blocks can accept solid or stranded wire between 28-12AWG / 0.08 – 3.31mm². The recommended strip length is 5-6mm.

The recommended operating tools are Wago 236-332 or 236-335.

0V / Negative connections

Several 0V / Ground references may be present within a system where an external connection to equipment such as a PLC is present. In some instances, it may not be desirable to connect the 0V reference on the pump to a system 0V reference. This is unavoidable where 4-20mA is used. However, both the digital inputs and the relay outputs in the Verderflex *Connect* box can offer isolation.

The 0V field power and negative 4-20mA connections are common. These are connected to the 0V pump reference and therefore no isolation is present. Where field power is used with the digital inputs, isolation is bypassed.

The isolated digital input negative connections are arranged as pairs. These are not connected to the pump / field power 0V reference by default.

Input 1 and Input 2 have a common negative connection.

Input 3 and Input 4 have a common negative connection.

At least one of each pair used should have a connection to a 0V / ground reference. It is acceptable to link between the two pairs within the breakout box if only a single reference wire is available.

Backwards compatibility with Vantage 5000 units

The *Verderflex Connect* is compatible with all Vantage 5000 units featuring the D-sub connector.

Backwards compatibility with Ds500+ / Ds4F units

The *Verderflex Connect* is not compatible with units manufactured before July 2026 (only compatible with pn: 155.X.2XXX).

Original manual

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