Product catalogue Dosistar

Mit Leidenschaft und Präzision

1 Dosistar VD variants

The model range Dosistar V/ VD/ VDA can drive DC pumps in the voltage range from 12V to 24V, found on most agriculture vehicles. They can be used to build dosing systems for different applications (for instance dosing of acid, grain preserving agent, ensilage agent, ...). All devices can alter the flow rate as they adjust the power for the pump.

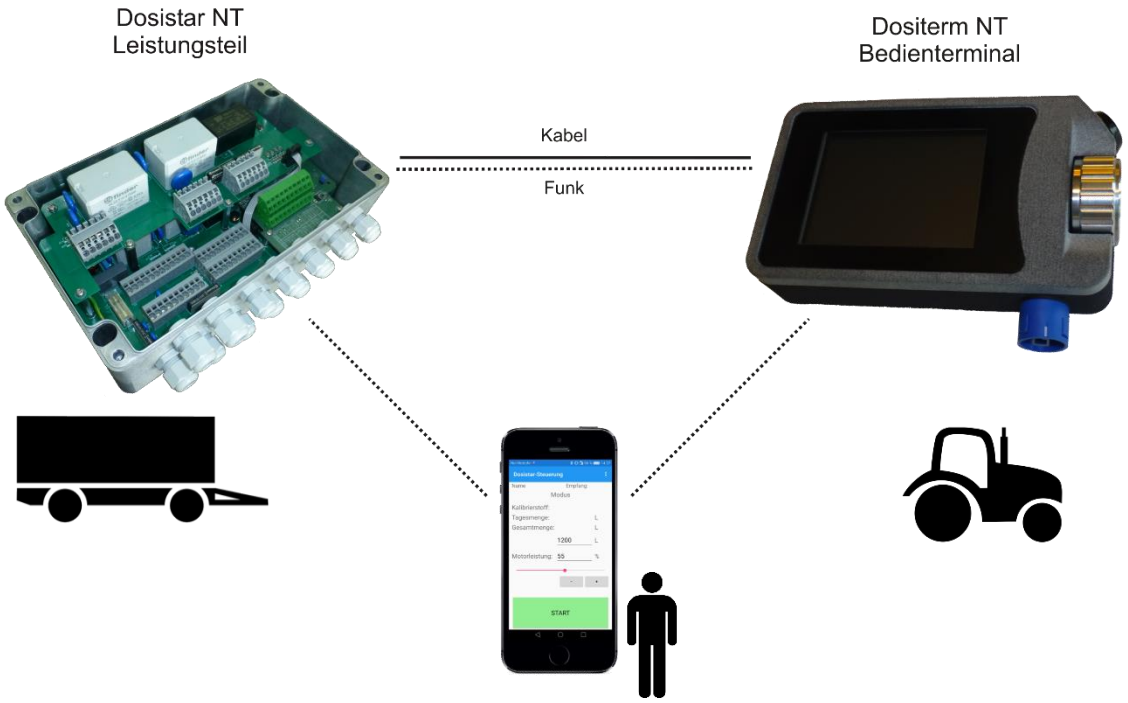
Article number	Article description
200101001 	**Dosistar V** - very easy installation, budget-priced entry-level device - adjusting the pump-power between 0...100%, no regulation of the flow rate - remote controllable with pick-up-switch - displays actual status: on / off and pick-up activated / deactivated - reverse battery protection and overload protection - useful also for many other 12V-power-regulation tasks: e.g. controlling fans
200201001 	**Dosistar VD** - setting the desired flow rate as liter per hour / milliliter per hour - constant flow rate regulation through power-control of the dosing-pump - informative display shows the actual flow rate, summed up daily- and overall dosing amounts - easy use: only one rotary knob - remote controllable with pick-up-switch - three function modes available: regulation of flow rate / dosing of fixed batches / area dependent dosing (based on vehicle speed) - extensive protection for high reliability against: - short circuit, overload (overload current adjustable) and reverse battery protection, warnings against overtemperature, underdosing and dry running pump
200201003 	**Dosistar VDA** - is a modification of the DOSISTAR VD, the basic properties are the same - additional output for driving a transportation relay or an electromagnetic valve. It switches the unregulated supply voltage simultaneously to the main pump, so it can activate a chain conveyor or open the dosing outlet - no input for wheel-speed-sensor, so no area dependant (speed-proportional) dosing possible

Important technical data at a glance			
Device	**V**	**VD**	**VDA**
operating voltage V_{CC}	12...24V		
Output	0...V_{CC}, $I_{NOMINAL}$ = 9A, I_{PEAK} = 12A	0... V_{CC}, $I_{NOMINAL}$ = 8A, I_{PEAK} =12A	0... V_{CC}, $I_{NOMINAL}$ = 8A, I_{PEAK} = 12A
Inputs	Pick-up-switch	Flowmeter Pick-up-switch Wheel-sensor	Flowmeter Pick-up-switch
Auxiliary outputs	-	-	switching output: 0V or V_{CC}
Dimensions & Weight	120mm * 95mm * 85mm 0,45kg		
Sensor supply	-	12V / 100mA	
Functions	adjusting the pump speed, STOP at activated pick-up-switch	constant flow rate regulation: 0.1L/h .... 9999L/h dosing of fixed batches between: 0.1L .... 9999.9L summing up of day and overall dosing amount user-language selectable: German, English, Estonian, Netherlands, Danish, Finnish, French (other languages on request)	

2 Dosistar NT

The Dosistar NT model line is the redevelopment of the Dosistar pump controls. The devices allow the control and regulation of pumps in different performance classes, and are usable in a wide array of dosing applications in industrial or agricultural environments.

They unify the proven operating and device concept of the Dosistar model line with the newest technology.



The Dosistar NT devices have two main components:

- The power unit, which contains the power electronics and the necessary interfaces for controlling and monitoring the pump, and all other peripheral components.
  - Dosistar NT-LV (control of medium-power DC pumps: up to 35A)
  - Dosistar NT-LVP (control of high-power DC pumps: up to 180A)
  - Dosistar NT-Switch (switching of pumps via internal relays, single or multi-channel, ideal for mixing liquids)
- The Dositerm NT control unit, a compact and intuitive user interface.

The separation into two devices keeps the assembly costs down and cable length short. A complicated installation of entire wire harnesses from the machine to the user is no longer necessary.

The Dosistar NT devices can have multiple optional wireless interfaces. 866Mhz wireless communication between power and control unit, as well as WLAN and Bluetooth modules can be integrated into the devices. This allows a multitude of new applications. Remote control via mobile phone or downloading internal data logs to a PC are equally possible.

All power units of the Dosistar NT model line have a robust and waterproof casing of protection class IP 68 (dustproof, protection against water jets and immersion). They are perfectly viable for use in rough agricultural environments. The Dositerm NT control unit has a protection class of IP 54 (protection against dust ingress in damaging quantities and splash water from any direction).

All Dosistar NT models have by default two dosing modes, flow regulation and charge dosing. During flow regulation a liquid is continuously dosed, flow rate and amount are logged and displayed. The dosing only ends if the user manually stops it. During charge dosing the dosing process automatically stops once a predetermined amount has been pumped.

The Dosistar NT-LV and Dosistar NT-LVP models have an additional area dependent dosing mode in which the amount dosed is controlled by an external speed signal.

Of course, device specific special modes or customer specific additions or adjustments are possible.

All devices possess the proven alarm and protection functions against dosing errors and dry running pumps. Depending on the power unit additional protection functions complement the device (e.g. adjustable current limit, short circuit protection and temperature control).

If you are interested in our devices, here is a short checklist which helps us to find the optimal solution for your application:

- Which supply voltage is available?
- What is the nominal voltage and current rating and how big is the maximum flow rate of the pump?
- Which active periphery components have to be controlled by the Dosistar NT?
- Which sensors will be connected with the Dosistar NT and what supply voltage do these sensors need?
- What are the required cable lengths?

Not 100% what you were searching for? Contact us anyways!

Due to the modular design of the devices we are well prepared for future developments and new applications. We will gladly offer advice and help you with finding your individually optimised solution.

Dositerm NT control unit

The Dositerm NT control unit is usable with all available Dosistar NT power units. Its small dimensions help to keep your vehicle-cockpit tidy.

Article number	Article description
202011001 	**Dositerm NT control unit** - Compatible with all power units of the Dosistar NT model line with automatic detection of the attached device - Robust construction (IP54) - 2.8'' colour display, control via rotary encoder with good tactile feedback - Implemented languages: German, English, Netherlands, Danish other languages on request - Configuration of all dosing applications (flow control/ charge dosing/ device specific special modes) - Display of measurements, alarms, dosing amounts, etc. - Configuration and management of flow meter and medium settings - Configuration of additional sensor inputs and auxiliary outputs - Customer management with individual memories for daily and total quantities - Easy mounting with holding magnet

Important technical data at a glance	
Supply voltage V_{CC}	5V … 30V
Display	2,8'' colour display
Controls	rotary encoder (can be used "blind")
Data log	Position via internal GPS & dosing information
Communication with power unit	Cable or 866MHz wireless
Communication PC	Bluetooth, WLAN, USB
Dimensions	122mm * 70mm * 35mm
Weight	250g
protection class	IP 54
Mounting	Holding magnet with mounting bracket

Dosistar NT-Switch

The Dosistar NT-Switch are designed for switching medium to high power pumps. Due to the switching characteristics of the outputs (internal relays), the pumps will always run at 100%. There is no active flow regulation.

The Dosistar NT-Switch are designed as multi-channel devices. They are especially suitable for applications in which multiple liquids have to be dosed. The modular design of the device allows a multitude of different variants which can be customised for your specific application.

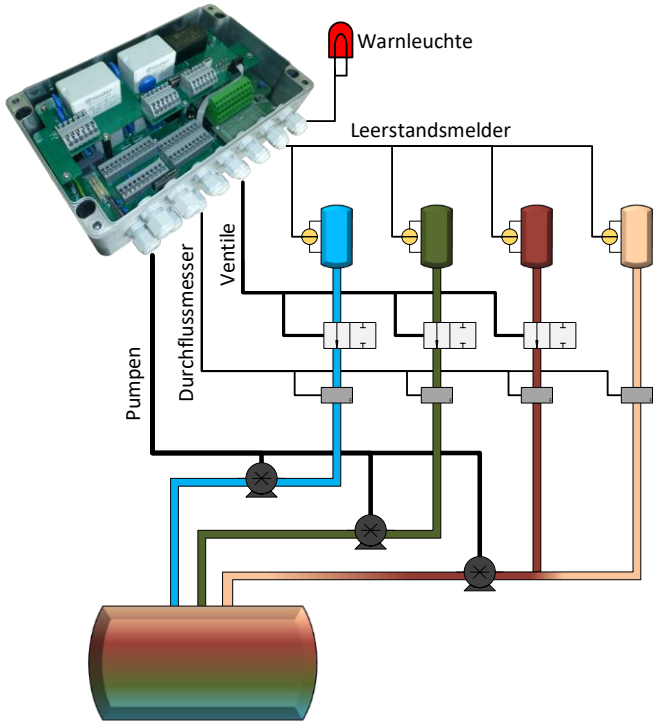
With the Dositerm NT control unit it is possible to assign each component to one or more medium channels. This flexibility allows it to adapt the device to any hardware configuration.

Once the medium channels have been configured, dosing profiles can be saved in the device. A dosing profile contains the following information:

- What substance (calibration value of the flow meter)
- What amount (absolute when charge dosing / percentage during flow measurement)
- How many partial charges (periodic rotation between all liquids for optimal mixing)
- Which pipe (choosing a medium channel)

Once the configuration has been saved in the device, starting a dosing process is but a buttons press away.

The Dosistar NT-Switch is available in both a 230 V_{AC} variant for stationary use and a 12/24V_{DC} variant for mobile applications.



example configuration for mixing of up to 4 liquids

Article number	Article description

202041001
 
	Dosistar NT-Switch
	- Functionality in maximum configuration:
	  - 4 power relays (switching of medium to high power pumps)
	  - 4 transport relays (potential free relay contacts for switching small loads, e.g. warning lamps or shut-off valves, function freely configurable)
	  - 1 alarm relay (potential free relay contact for signalling dosing errors)
	  - 4 impulse inputs for flowmeter
	  - 4 configurable digital inputs (e.g. level indicators or pause buttons)
	- 12/24V_{DC} and 230V_{AC} variants available
	- Configurable connection of the individual components
	- No flow control (components always run at 100%)
	- Flow measurement or charge dosing
	- Dosing alarms (protection against dosing errors and dry running pumps)
	
	The device is accessed with the **Dosistar NT control unit** (see above)

Important technical data at a glance	
Supply voltage V_{CC}	230V_{AC}, 2~ (Dosistar NT-Switch 230V) 10…30V_{DC} (Dosistar NT-Switch 12/24V)
Output power relays	1…4 pcs. V_{CC}, 9A each (Dosistar NT-Switch 230V) 1…4 pcs. V_{CC}, 20A each (Dosistar NT-Switch 12/24V)
Output transport relays	1…4 potential free relay contacts, max. 230V, 5A each
Output alarm relay	1 potential free relay contacts, max. 230V, 5A
Inputs	1…4 impulse inputs for flow meter 1…4 configurable digital inputs Supply: 12V, 500mA total (optional 24V, 250mA total)
Protection class	IP 68
Dimensions	262mm * 186mm * 100mm
Weight	2,8kg

2.1 Dosistar NT-LV

The Dosistar NT-LV is a device for controlling pumps of medium power.

The device regulates the flow rate to a constant value set by the user. The Dosistar NT LV is adaptable to a wide variety of flow meter, e.g. flow meter turbines and ultrasonic sensors.

Article number	Article description
202021001 	**Dosistar NT-LV** - Control of 12/24V_{DC} pumps of medium power - Auxiliary outputs for switching small loads: alarm relay, transport relay, optional reserve relay - Impulse input for flow meter and wheel sensor - configurable digital inputs (e.g. level indicators or pause buttons) - Flow control/ charge dosing/ area dependent dosing (based on vehicle speed) - Dosing alarms (protection against dosing errors and dry running pumps) - Overheat, overcurrent and short circuit protection The device is accessed with the **Dosistar NT control unit** (see above)

Important technical data at a glance	
Supply voltage V_{CC}	10…30V
Output	0…$V_{CC,}$ $I_{NOMINAL}$ = 35A, I_{PEAK} = 40A (<3 Sekunden)
Auxiliary outputs	Alarm relay, transport relay, optional reserve relay max. 230V, 5A each, potential free switching contacts
Inputs	Impulse input for flowmeter and wheel sensor 3 configurable digital inputs 1 optional analogue input optional input for a 4-20mA signal from a scale
Sensor supply	12V, 500mA total (optional 24V, 250mA total)
Protection class	IP 68
Dimensions	262mm * 226mm * 100mm
Weight	3,5kg

2.2 Dosistar NT-LVP

The Dosistar NT-LVP is a device for controlling high-power DC pumps. Combined with high performance pumps dosing systems with high flow rates can be realised.
The device regulates the flow rate to a constant value set by the user. The Dosistar NT-LVP is adaptable to a wide variety of flow meter, e.g. flow meter turbines and ultrasonic sensors.

Article number	Article description
202031001 	**Dosistar NT-LVP** - Control of 12/24V_{DC} pumps of high power - Auxiliary outputs for switching small loads: alarm relay, transport relay, optional reserve relay - Impulse input for flow meter and wheel sensor - configurable digital inputs (e.g. level indicators or pause buttons) - Flow control/ charge dosing/ area dependent dosing - Dosing alarms (protection against dosing errors and dry running pumps) - Overheat, overcurrent and short circuit protection - Optional input for analog scale to enable mass flow dependant dosing The device is accessed with the **Dosistar NT control unit** (see above)

Important technical data at a glance	
Supply voltage V_{CC}	10…30V
Output	0…$V_{CC,}$ $I_{NOMINAL}$ = 180A, I_{PEAK} = 200A (limited thermally)
Auxiliary outputs	Alarm relay, transport relay, optional reserve relay max. 230V, 5A each
Inputs	Impulse input for flow meter and wheel sensor 3 configurable digital inputs 1 optional analogue input input for a 4-20mA signal from a scale
Sensor supply	12V, 500mA total (optional 24V, 250mA total)
Protection class	IP 68
Dimensions	262mm * 226mm * 145mm
Weight	7,7kg

3 Optional Upgrades

Optional upgrades to further adjust the functionality of the Dosistar VD/ VDA and NT devices.

Article number	Article description
209801022 	**Dosistar VD/ VDA Bluetooth upgrade** - Optional extension with Bluetooth module - Available for all Dosistar VD/VDA models - Enables remote control via smartphone app - Range up to 30m - No restrictions to normal device functionality - Control by the rotary knob remains unchanged - Adding more functions to the smartphone app is possible (e.g. improved data log with GPS tracking). Contact us for more information.
209801023 	**Acoustic alarm upgrade** - Optional upgrade with Piezo-buzzer - Available for all Dosistar VD/VDA variants and for the Dositerm NT control unit - Generates different sound patterns (pulsing/continuous) for occurring warnings and alarms - Additional sound patterns for specific operation states are possible. Contact us for additional information.

4 Dosistar Disccontrol

The devices intended for use on fertilizer distributors. They can control the amount and throwing range of the fertilizer. All devices can drive proportional magnetic valves up to 24W. It is also possible to drive minor pumps/motors directly, if they don't exceed this power rating.

Through the universal hardware design these devices can also be used in different applications, where control of low power actors is demanded.

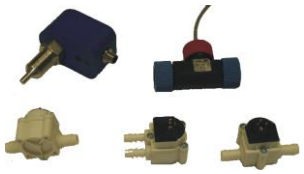
Article number	Article description
201211003 	**Dosistar Disccontrol ST** - combination of Dosistar Disccontrol and Dosistar ST - only one device for all functions - clean and tidy cockpit - functionally identical to the single devices

Important technical data at a glance	
Operating voltage V_{CC}	12...24V
Outputs	driving capability for 3 magnetic valves
Inputs	rotation speed chain conveyor (1...1000 Imp/s) wheel sensor (1...10000 Imp/s) rotation speed left disk rotation speed right disk
Dimensions & weight	120mm * 240mm * 85 mm 0,7kg
Sensor supply	V_{CC} not regulated / 100mA

5 Accessories

IML Instrumenta Mechanik Labor Electronic GmbH can deliver necessary small parts and accessories to build a complete dosing system.

Article number	Article description
209801011 	**flowmeter connection with cable** flowmeter cable for connection with the FHK / FHKU flowmeter length: 30 cm
209801012 	**flow meter cable assembly, per additional meter** Cable length can be specified by the customer. Cable assemblies for different applications can be made on demand. Contact us for more information.
209801008 	**Pick-up-switch with magnet and cable extension** Pick-up-switch: this switch can automate starting and stopping of the dosing application If the pick-up-switch is connected to the mower, the dosing can be automatically halted whenever the mower is lifted. We recommend reed contact switches for this application.

Article number	Article description
On demand 	**flow meter** all dosing devices with flow regulation and / or flow measurement require an external flow meter. Out of experience we recommend the following types: - mechanical turbine-type flow meters with nozzles between 1 and 10mm. The housing is made of Arnite and withstands many chemicals. The connection type of this flow-meters depends on the exact type. - ultra sonic flow meters - magnetic-inductive flow-meters. This type is nearly immune against fluids with varying viscosity.

The following table gives a rough orientation for choosing a flow meter.

Recommended flow rates for different Digmesa flow meter			
flow meter nozzle size	**Imp/L (according to data sheet)**	**max. flow rate [L/h] (according to data sheet)**	**min. recommended flow rate [L/h]**
1mm	2223	35	17
1,2mm	1787	46	21
1,5mm	1386	80	26
2mm	1013	139	36
2,5mm	754	164	48
3mm	572	293	63
4mm	382	435	95
5,6mm	256	498	141
7mm	165	1080	219

Working outside these upper and lower bounds is possible within certain limits. It is however not recommended because measurement and control errors might be introduced to the system. Contact us for more information.

With Passion and Precision

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