

DISOMAT® Tersus

Weighing electronics

- A weighing terminal with all the equipment
- Clear operator guidance on colored, graphical LCD display
- Built-in Ethernet port
- 4 built-in USB Ports
- Connection for industrial fieldbuses
- Bluetooth interface (optional)
- Built-in legal-for-trade memory (optional)
- Remote α/n swivel keyboard (optional)
- Modular and expandable I/O
- Also available with two measuring channels



You can also have the option of activating its configuration as a vehicle scale (inbound/outbound scale) or a crane scale with collective load memory.

Furthermore, you can adapt the functionality of the DISOMAT® Tersus to virtually any weighing job by adapting the links between the logical function blocks.

You can do either this by using the convenient DISOPLAN PC program (a graphic interface) or directly on the device. This makes it easy and cost-effective to adapt the terminal locally without major programming effort.

In the optional two-channel measuring instrument design, the DISOMAT® Tersus can also be used for operating twin-unit road weigh bridges or two-trolley cranes with a separate overload indicator, or more you can simultaneously monitor the levels of two bins. You can even carry out to feeding processes at once.

Equipment

The weight is displayed permanently on the backlit, color display in QVGA (320 x 240 dots) format, also while the operator makes entries in the 7-line

Application

The compact DISOMAT® Tersus weighing terminal is ideal for use in a wide range of weighing applications, regardless of whether you're focusing on operating scales or data processing systems, controlling processes or communicating with on-site systems. The device has four predefined configurations as function variants stored for typical applications that can be easily called up:

These function variants

- Cargo scales
- Crane scales
- Filling scales
- Discharge Scales

They offer the user a proven scope of functions adapted to each individual application including the option of adapting the weigh terminal to the special requirements of his scale.

dialog field of the display or during status messages.

For instance, this might be information on the progress of feeding in progress (a block diagram), on the position of the inputs or outputs or help for operating the terminal.

A special mode ("the telephone alphabets") can also be used to key in α -characters via keyboard. There is also the option of a remote raised keyboard to make it more convenient to key in inputs, particularly for frequent text inputs.

A second, independent control terminal can be added at any time with a second DISOMAT® Tersus in the mirror' configuration.

You can use a total of 8 binary inputs and 12 binary outputs for controlling the scale and DISOMAT® Tersus. An analog I/A module (two input/to outputs) can also be added.

You can adapt the functionality of the inputs/outputs by linking the function blocks in broad limits to the application's requirements. The number of binary inputs/outputs can be expanded as required with upgrade modules.

Three serial interfaces enable you to connect peripheral units such as printers and remote displays while connecting up data with the data processing or PLC unit. If necessary, another serial interface can be retrofitted.

There are coupling modules available that can be retrofitted for coupling the most common industrial fieldbus systems (PROFIBUS DeviceNet) – and the Ethernet interface (100 MBaud) is even standard terminal equipment.

The DISOMAT® Tersus has 4 built-in USB ports for connecting up the external keyboard, a legal-four-trade memory and a printer.

The DISOMAT® Tersus measuring equipment has extremely high resolution and outstanding measuring speed featuring great reserves even for the most difficult weighing applications, such as scales with minor load cell utilization, scales whose load sensor is in the explosive range, and for fast filling processes. Even extreme temperature demands are no problem for this terminal – the rated temperature range extends from -30 °C ... +60 °C.

The scale specifications (including the calibration data) are stored in the connecting plug of the load cell cable (dongle). If there is a fault, any component in the terminal can be replaced without having to recalibrate or reverify it.

Together with its modular design, this keeps downtimes and repair expenditures on the terminal to a minimum.

The available housing designs

- Desk-top model
- Panel mount unit
- Stainless steel unit
- Field device
- and 19" rack

They offer the right packaging for practically every environment.

Operation and Settings

The standard DISOMAT® operating languages are German and English.

You can easily load other operating languages into the device via the PC-assisted DISOPLAN parametrizing and configuration program (WINDOWS program) (Italian, Spanish, French, Polish, Czech, Hungarian and Russian are currently available. Other languages are available on request).

DISOPLAN also allows:

- the graphic configuration of the function blocks
- set all instrument parameters
- adjust the terminal
- easily format printed vouchers
- Recording weight curves
- Reading out the entire terminal configuration (back-up)
- Restoring the saved data to a DISOMAT® Tersus (Restore). This allows e.g. a replacement device to be prepared at short notice. Together with the dongle concept, a short down time can be guaranteed if there is a fault while at the same time guaranteeing minimal spare parts stocks

DISOPLAN communicates with the DISOMAT® either

- serially
- via Ethernet
- or via Bluetooth (optional)

All parameter and adjustment data are stored in the terminal to protect them from power failure. The real-time clock runs for at least 7 more days.

Print

Variable print pattern formatting allows you to freely lay out your weighing report.

You can graphically configure the printed vouchers in DISOPLAN (direct preview).

You can print out the following along with weight data:

- Date and Time
- Serial no.
- Balance totals
- The number of balanced weighings
- 5 strings up to 25 digits
- 3 saved texts
- each with 26 characters

The arrangement of printing elements is defined in a format and you can store 6 different formats.

They offer the right packaging for virtually every environment.
 The available housing designs for DISOMAT® Tersus

VTG 20450 table-top terminal



Protection class: IP54,
 Plastic,
 10 cable inlets including supply connections and load cell cables
 Weight: 3.7 kg

Panel mount unit VEG 20450



Protection class: Front IP54, otherwise IP20,
 Plastic,
 Panel cutout 138.5 mm x 282 mm
 Weight: 3.5 kg

19" rack VNG 20450



with panel mount unit VEG 20450
 Depth 197 mm + 25 mm for connecting cable
 Protection class: Front IP54 otherwise IP20
 Weight: 7.5 kg

Crane/field device VFG 20450



with panel mount unit VEG 20450,
 Sheet steel,
 Protection class: IP54,
 Weight 11 kg
 * Bezel with front frame: 236 mm

Stainless steel unit VKG 20450



Table-top mounting
 Protection class: IP65
 Weight: 5 kg
 The VKG 20450 can also be mounted on the wall with the attached holder.
 (cable outlets below)

Technical Data

Display	Color LCD, 240 x 320 pixels, 120 mm x 90 mm, Weight display 22 mm digit height,
Keyboard	Membrane keyboard with 33 multiple-function keys, 12 of which are configurable function keys
Supply voltage	85 ... 250 VAC, 47 ... 63 Hz 24 VDC (18 ... 36 VDC)
Power consumption	max. 20 VA
Temperature range	Operating temperature: -30 °C ... +60 °C able for legal-for-trade: -30 °C ... +40 °C
Electromagnetic ambient conditions	E2 (OIML D11)
Input signal	0 ... 35 mV
Sensitivity	0.4 µV/d
Scan rate	132 measurements/s
Increment value	1, 2, 5, etc. adjustable from 0.01 ... 5000
Unit	kg, g, t, lb, N, kN
Number of digits	Legal-for-trade operation: max. 8000 d Multi-range scale 3 x 4000 d Multi-interval scale 3 x 4000 d
Taring	Up to 100 % of the weighing range
Zeroing system	Can be set to a max. 20 % Automatic zero point lag 0.5 d/s, can be switched off
Filter	Network-synchronous noise-signal suppression Interference signals ≥ 100 dB Common mode rejection ≥ 110 dB Software filter, filter time 0 ... 10 s
Linearity error	< 0.025 ‰
Zero point stability, TK₀	< 0.4 µV / 10 K corresponds to 0.012 ‰ / 10 K
Range stability, TK_c	< 0.03 ‰ / 10 K
Accuracy, F_{comb}	< 0.05 ‰ / 10 K
Date/time:	Real-time clock, back-up time min. 7 days
Load cell impedance	At least 43 Ω (corresponds to 8 x 350 Ω - load cell or > 20 RT load cells @ 4000 Ω)

	also valid as minimum total impedance for two-channel terminals (such as 2 x 4 x 350 Ω)
Load cell supply	12 V alternating voltage supply
Binary inputs	8 inputs, indirect coupled, securely isolated, 18 ... 36 VDC Auxiliary 24 V supply for controlling the inputs (max. 150 mA)
Binary outputs	12 outputs, electrically isolated, securely isolated (relay), passive. Load capacity 24 VDC/VAC max. 500 mA, 90 ... 250 VAC max. 300 mA. The refresh rate of the outputs in the 'fast comparator' function is 132 x per second
Serial interfaces	3 interfaces for printer, DP or secondary display S1 and S2: convertible to RS232 RS422/485-4-wire RS485-2-wire The change can be made using software (no jumpers) S3: RS232 fixed, using Bluetooth as an option max. baud rate for all interfaces: 38400 Baud
Data processing procedures	Siemens 3964R S5 (RK512) Modbus Standard Schenck DDP 8672 procedure Schenck DDP 8785 poll procedure
Secondary display procedures::	DTA DDP8861 DDP8850
Ethernet	10/100BASE-T, full duplex-compatible
USB ports	4 x USB 2.0 Host (Master)

Options

Second measurement input	such as for scales with switching and network switching
Remote PC swivel keyboard	VTT 28000 (USB)
Data input via barcode scanner	on request
Legal-for-trade ability VMM20450 data memory for weigh data as a substitute for check printer	Memory capacity min. 256 MB for typically 3 m. weighing operations
Expansion card VEA 20451	2 outputs, 0(4) ... 20 mA, Max load 500 Ω

	Resolution: 10,000 parts Refresh rate: 10/s 2 inputs 0(4) ... 20 mA, and 0 ... 10 V Linearity <0.15 ‰ Zero-point stability: <0.25 ‰/10 K Range stability: <0.25 ‰/10 K Additionally: two binary outputs open collector 24 VDC, galvanically free, max. 200 mA
Option card serial	1 additional serial interface RS 232 / RS 485-2 / RS 485-4
Fieldbus card PROFIBUS	Protocol PROFIBUS DP and DP-V1
Fieldbus card PROFINET I/O	Protocol PROFINET IO Conformance Class B
Fieldbus card DeviceNet	
Bluetooth module (serial interface S3)	Class 1 or 2 module, maximum transmission link 100 (15) m
Radio data transmission	For printing data or data processing connection
I/O extensions	Binary inputs/outputs (max. additional 16 inputs or 16 outputs) Added analog output
The matching barrier subassemblies for connecting intrinsically safe weighing platforms and operating units in the ATEX 2G category (zone 1)	
Other options or customised functions for your applications at request	



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