

# Multiterminal MT

Global competition demands standardized basic functions from hydraulic systems with a flow volume of up to 100 l/min and tank sizes up to 150 liters. National and international standards also require minimum maintenance and monitoring requirements. The Multiterminal ideally fulfills these tasks in the performance class mentioned. In a compact basic housing it combines essential functions such as filling, ventilation and return filtration, offers the monitoring functions temperature and level as well as the safe taking of oil samples from tank and return line. The Multiterminal can be installed easily accessible on just one opening on the tank top, making maintenance considerably easier. The filter elements are standardized according to DIN 24550, temperature and level are communicable via IO-Link.

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Return filter for DIN elements up to NG 100

Three connections for return line

Filling port with quick coupling

Filling control optional

Electronic return filter monitoring

Sampling ports in tank and return line

Air breather with integrated liquid level and temperature monitoring

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## Technical Data

### Multiterminal

#### Material

Multiterminal block	GK-ALSi12
Block seal	GI cork
Filter cover and bell cover	Plastic

#### Filter data (return filter)

Bypass opening pressure	$\Delta p$ 3.5 bar $\pm$ 10 %
Filter sizes	NG 40/NG 63/NG 100
for filter elements per	DIN 24550

#### Weight

Multiterminal base version (NG 40, NG 63 or NG 100)	~ 3.5 kg
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## Dimensions

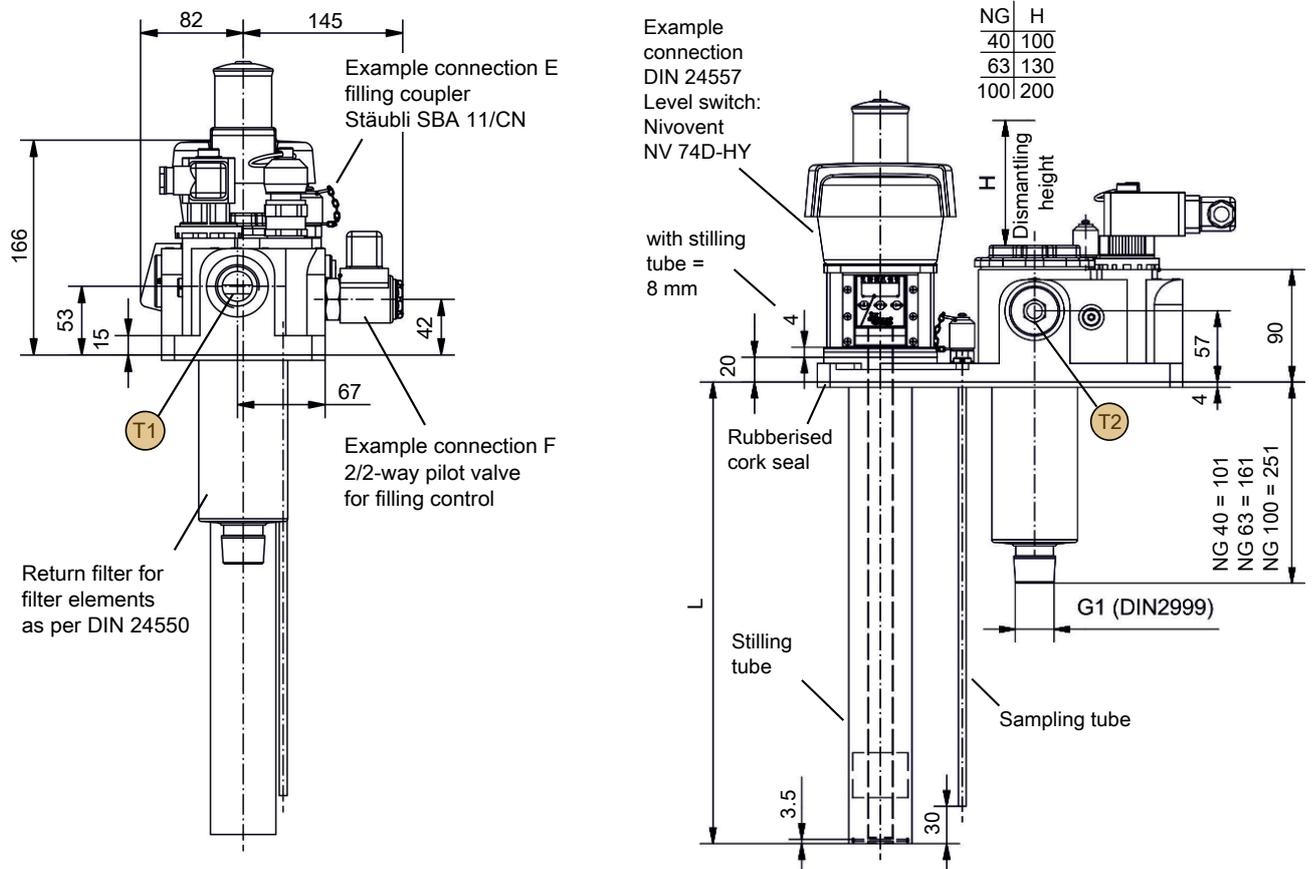
### NOTICE

### Sample multiterminal equipment

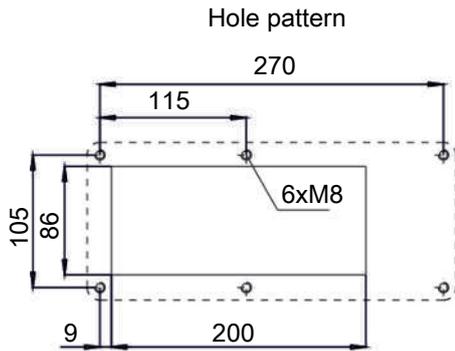


The drawing shows the sample equipment of the multiterminal. The hole pattern as per DIN 24557 and the connections D, E, F can optionally be equipped as specified below. The connections T1, T2, T3, X1, X2 and X3 are prefixed as specified. The built-in return filter (without filter element) is available in three different nominal sizes and is part of the basic multiterminal.

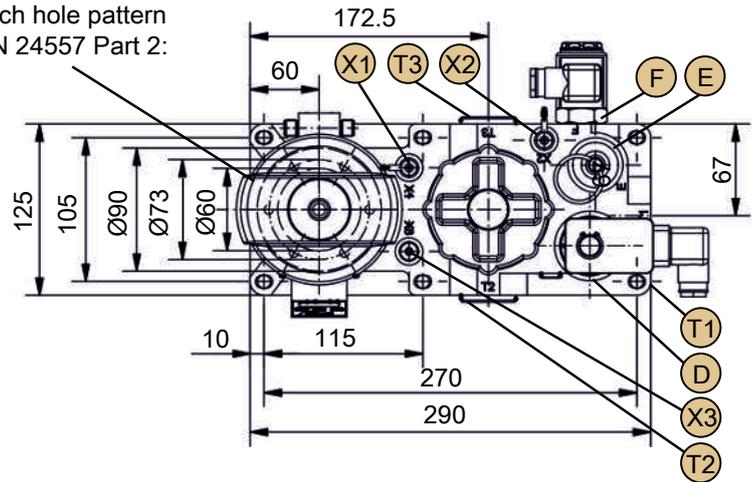
### Dimensions



## Hole pattern



Level switch hole pattern  
as per DIN 24557 Part 2:  
6xM5



## Optional connections:

- D = back pressure sensor or sealing plug M30x1.5
- E = G1/2 filling coupler
- F = Flutec 2/2-way pilot valve or M27x2 sealing plug
- DIN 24557/T2 = Nivovent 7 series level- and temperature switch (others on request), as desired

## Prefixed connections:

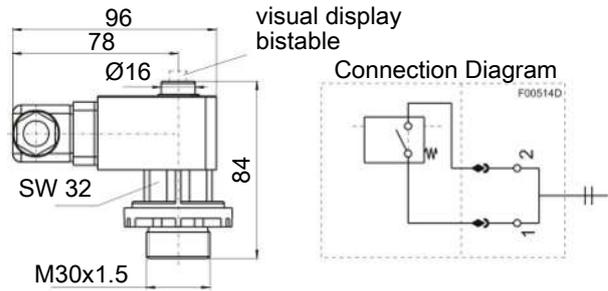
- T1 = available G1 connection to return filter
- T2/T3 = G1 sealing plug (alternative connections for return filter - connection T1)
- X1 = G1/8 Minimes screw connection with attached tube for sampling from the tank
- X2 = G1/8 Minimes screw connection for sampling upstream from the return filter
- X3 = G1/8 sealing plug (alternative connection for X1)

(The equipment on connection T1, T2 and T3 as well as connections X1 and X3 can be interchanged by the customer.)

**Connection D - Back Pressure Sensor Or Sealing Plug**

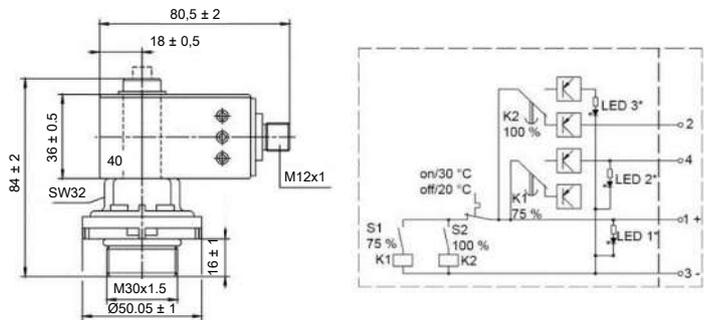
**Type Filtration Group PIS 3085/2.2**

Max. operating voltage	250 VAC / 200 VDC
Max. switching current	1 A
Max. switching output	70 W
Rated pressure / temperature	10 bar / -10 to + 80°C
Gauge pressure	2.2 bar
Display type	Visual / electric
IP rating	IP65 (mated)
Contact type:	NO contact / NC contact
Electrical connection	DIN EN 175301-803, PG11
Material	PA 66 / PA 6



**Type Filtration Group PIS 3153/1.7/2.2**

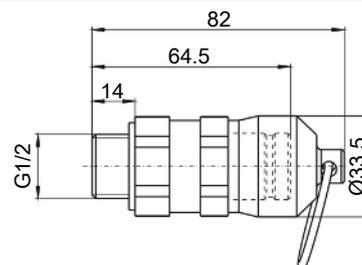
Max. operating voltage	10-30 V
Max. switching current	1 A
Max. switching output	20 W
Rated pressure / temperature	10 bar / -10 to +80°C
Gauge pressure	1.7 / 2.2 bar
Display type	Visual / electric
IP rating	IP65 (mated)
Contact type:	NO contact / NC contact
Electrical Connection	M12x1
Material	PA 66 / PA 6



**Connection E - Filling Coupler Or Sealing Plug**

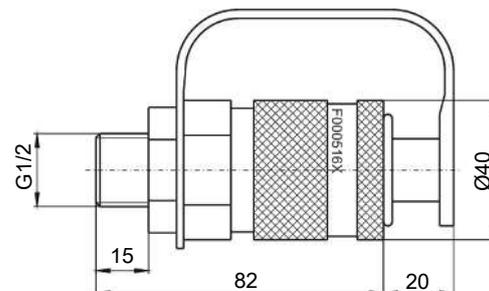
**Type Stäubli SBA 11/CN**

	(receptacle)
Nominal width	11
Thread	G ½
Material	Chromium steel / tempered steel



**Type Walther MD-012**

	(filling coupler)
Nominal width	12
Thread	G ½
Material	Galvanised / bronzed steel



**Connection F - Filling Control Or Sealing Plug**

**Function description of the filling control:**

The filling control is used to automatically stop tank filling once the maximum level is reached. The valve is controlled using the top level contact Lx.

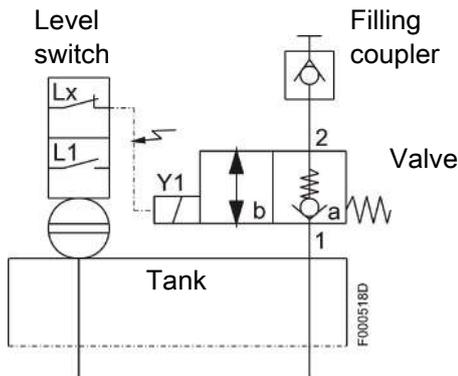
When the system is switched on, the valve switches to position "b", i.e. the valve is flowing freely from 2 to 1, oil can be added using the filling coupler.

When the top level contact (NC contact on Lx) is reached, the valve returns to position "a". The valve is closed from 2 to 1 and oil cannot enter the tank through the filling coupler.

During operation, a second level contact (NO contact on L1) emits an alert when the oil level is low. In the case of external control, the tank can now automatically be filled via the filling coupler or service staff be prompted to add oil.

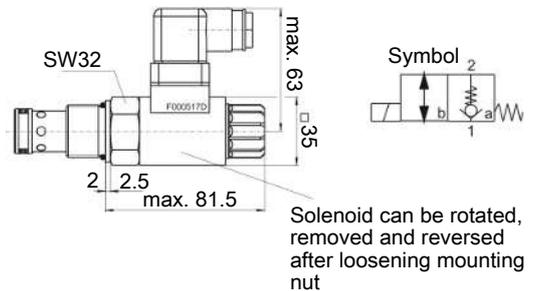
In both cases, when the top level contact Lx is reached, the valve is switched back to position "a" and filling stops.

The entire control unit for automatic filling with NV 7x series level switch (except NV73 K/KN) of your choice is also available from Bühler Technologies GmbH.



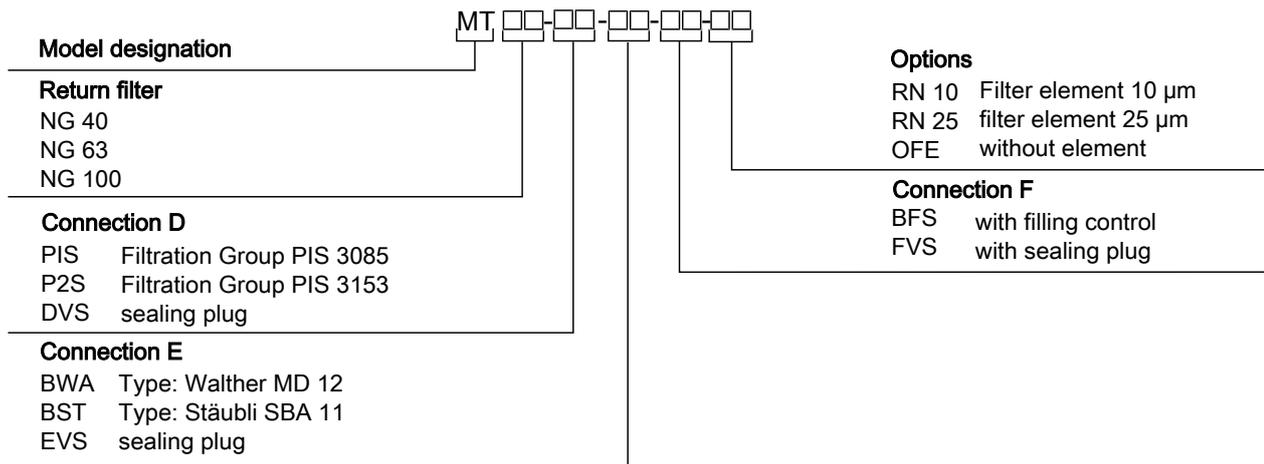
**Type Flutec (2/2-way pilot valve)**

Q max.	100 L/min.
p max.	280 bar
Nominal voltage	24 VDC (-5/+10%)
Nominal current	1.04 A
IP rating	IP65
Hydraulic fluid temperature range	min. -20 °C, max. +80 °C
Viscosity range	min. 10 mm <sup>2</sup> /s, max. 380 mm <sup>2</sup> /s
Connector	DIN EN 175301-803, PG11



For hydraulics as per DIN 51524 Part 1 and 2  
 Max. operating fluid contamination as per NAS 1638 Class 10.

## Multiterminal Model Key



### Ordering example:

You require:

Basic NG 63 multiterminal optional connections equipped as follows:

Connection:

D (back pressure sensor)	Filtration Group PIS 3085
E (filling coupler)	Walther MD-012
F (filling control)	Sealing plug M27x2
Accessories	Filter element N 0063 RN 10, filter fineness 10 µm

Order:

MT NG 63-PIS-BWA-FVS-RN10

Connection DIN 24557 Part 2 (Level-/temperature switch with vent filter)

### Example:

Level switch type Nivovent NV 74 for multiterminal, brass, length L= 370 mm (measured from multiterminal block bottom edge), M12 plug, one level contact at L=190 mm as falling NO contact (NO), one temperature contact 60 °C as NC contact (NC) and vent filter with visual contamination indicator.

Order:

NV 74-HY-MS-M12-370-1K-TK60NC-MT-VS

L1=190 mm f.S.

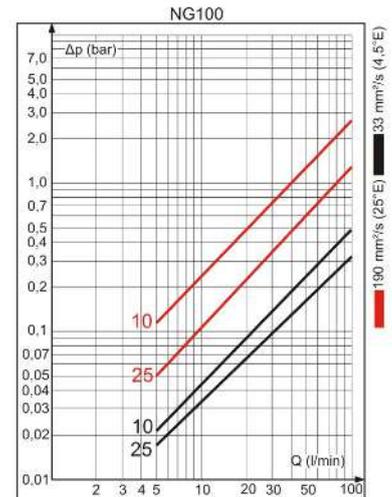
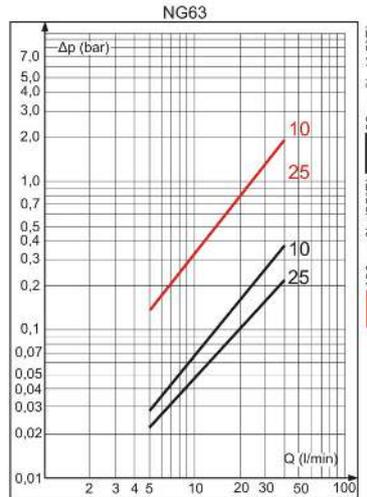
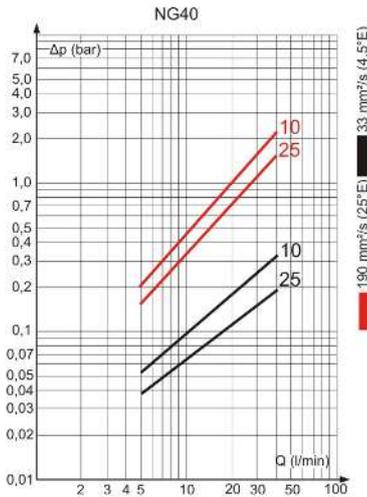
## Spare Parts And Consumables

### Return filter replacement elements:

Filter	Filter unit	Filter element	Item no.
NG 40	10 µm	N0040RN2010	76910962
	25 µm	N0040RN2025	76911127
NG 63	10 µm	N0063RN2010	76910970
	25 µm	N0063RN2025	76911135
NG 100	10 µm	N0100RN2010	76910988
	25 µm	N0100RN2025	76911143

For air filter elements, please refer to the respective operating and installation instructions for the level switch or the documentation from the air filter manufacturer.

## Return filter performance curves:



## Connection DIN 24557

### NOTICE

### Multiterminal MT equipment



With the DIN 24557 Part 2 connection equipped with a level/temperature switch, the multiterminal always consists of two parts. The first part being the multiterminal MT from this data sheet, and the second part being a Nivovent NV 7x series level switch (see ordering example). This also shows a list of the NV Nivovent models which can be used. Please refer to the respective data sheet for the exact configuration of the level switch. (Please contact us regarding built-in filling control.)

Multiterminal base unit consists of:

Multiterminal block, block seal, connections T1-T3, X1-X3 pre-equipped as specified.

## Level Switch Overview

Level switch

NV 74 for multiterminal

For technical data, please see data sheet no. 10 0205

- Hydac vent filter
- Easy and quick to adjust level contacts
- Plug and play system
- Up to 4 contacts
- Bi-metal contacts, Pt 100 or 4-20 mA output signal for temperature
- **NV 74D plus display and control unit**
- Easy to operate via three keys
- Bevelled LED display for optimal visibility
- Up to 4 programmable temperature switching outputs
- Optional continuous temperature output signal, programmable 4-20 mA, 0-10 V or 2-10 V



### Level switch

### NV 71 for multiterminal

For technical data, please see data sheet no. 10 0204

- Hydac vent filter
- Easy and/or adjustable level contacts
- Up to 4 contacts
- 230 V supply voltage possible
- Bi-metal contacts, Pt 100 or 4-20 mA output signal for temperature
- **NV 71D plus display and control unit**
- Easy to operate via three keys
- Bevelled LED display for optimal visibility
- Up to 4 programmable temperature switching outputs
- Optional continuous temperature output signal, programmable 4-20 mA, 0-10 V or 2-10 V



### Level switch

### NV 73 for multiterminal

For technical data, please see data sheet no. 10 0206

- **Continuous liquid level measurement**
- Hydac vent filter
- Alternatively with continuous temperature measurement 4-20 mA output
- Resolution 5 mm
- Various plug options



### Level switch

### NV 77-XP for multiterminal

For technical data, please see data sheet no. 10 0203

- **Continuous liquid level measurement**
- Hydac vent filter
- 4-20 mA
- Resolution 5 mm
- Sensor length up to 1420 mm
- **Display and control unit**
- 4 switching outputs programmable as level- and temperature alarm output
- Alternatively 2 switching outputs programmable as level- and temperature alarm outputs + 1 analog output each for continuous level- and temperature analysis
- Analog output programmable 4-20 mA, 0-10 V, 2-10 V or 0-5 V

