

Fluidcontrolterminal FC-T-G1/2-NV77-XP-MA-DC

- BMW Specification -

Rapid filling and short oil change times require fixed connection points to connect factory standard circulation units quick and clean. Since hydraulic units are typically always crowded and to minimise installation for all of these functions, the Fluidcontrolterminal was designed. The flange with a connection bore pattern standardised for vent filters as per DIN 24557, Part 2 holds the vent filter, filling port as well as the level and temperature monitor.

The configuration of the backside of the Fluidcontrolterminal FC-T-G1/2-NV77-XP-MA-DC is customised to the requirements of BMW. It features two M12 plug bases, a temperature display and preset switching points. Please note, there are other BMW specific versions of the Nivotemp and Nivovent series.

Connecting flange as per DIN 24557, Part 2

Combined, continuous liquid level and oil temperature monitoring

Two adjustable alarm outputs each for level and temperature

Alternatively one analogue output each (can be set to current or voltage) for level and temperature plus two parametrisable alarm outputs

IO-Link interface built in

In normal mode the LED display shows the actual temperature, with status of the switching outputs

Standard menu structure based on VDMA standard sheet 24574 ff.

Filling port G1/2

Vent filter with filler cap

Contamination indicator

Low installation costs

Modular design (filling port and level switch)



Technical Data

Basic Unit

Operating pressure	max. 1 bar
Operating temperature	-20 °C to +80 °C
Fluid density	min. 0.8 kg/dm ³
Weight at L = 500 mm	approx. 5 kg

Material

Float SK 604	Hard PU
Switching tube	Brass
Stilling tube	Brass
Flange	Galvanised steel
Seals	Rubber cork/NBR/FKM
Level switch housing	PA
Filter housing/display	PA
Filter element	SM-L (3 µm)

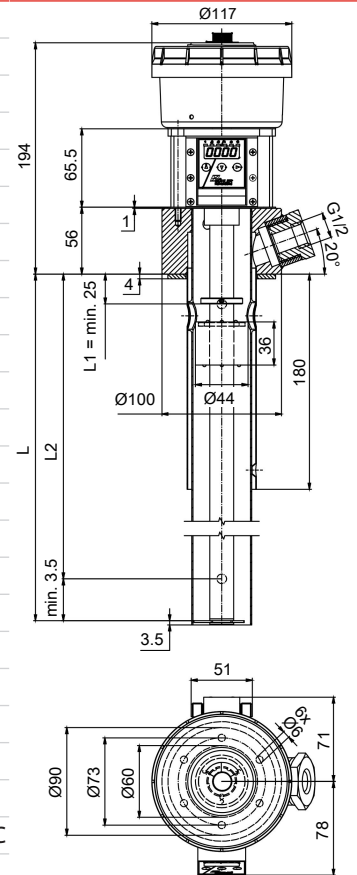
Vent filter **Filtration Group (Mahle) PI0125 (MA)**

Filter element	SM-L (3 µm)
Additional equipment	Contamination indicator

Analysis display electronics

Display	4 character 7 segment LED	
Operation	Via 3 keys	
Memory	Min./Max. data memory	
Starting current input	approx. 100 mA for 100 ms	
Current input during operation	approx. 50 mA (without current- and switching outputs)	
Supply voltage (UB)	10 - 30 VDC (nominal voltage 24 VDC)/with IO-Link 18 - 30 VDC	
Ambient temperature	-20 °C to +70 °C	
Display units	Level %, cm, L, i, Gal	Temperature °C, °F
Display range	adjustable	-20 °C to +120 °C
Alarm setting range	e.g. 0 to 100 %	0 °C to 100 °C
Display accuracy	± 1 % from end value	± 1 % from end value
Input values	Level	Temperature
Display housing	Reed-contact Resolution 5mm	Pt100 Cl. B, DIN EN 60751 Tolerance ± 0.8 °C

Dimensions



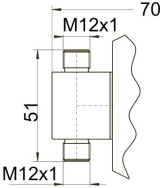
Fixing hole pattern as per DIN 24557, Part 2

	1D3S	1D1S-KN-KT
Optional switching outputs		
Plug (base)	2 x M12 – 4-pin	2 x M12 – 4-pin
Switching outputs (preset per Ordering Instructions)	4 parametrisable switching outputs Assignment 2 x level/2 x temperature preset or 1 x programmable with assignment options plus IO-Link	2 parametrisable switching outputs with arbitrary assignment level/temperature or 1 x programmable with assignment options plus IO-Link
Alarm memory	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook
max. switching current*	0.5 A per output continuous short-circuit protected	0.5 A per output continuous short-circuit protected
Contact load	max. 1 A total	max. 1 A total
Analogue outputs		1x level and 1x temperature
Programmable as		4 - 20 mA, 2 - 10 VDC, 0 - 10 VDC, 0 - 5 VDC
Max. burden Ω as current output		(U _b - 8 V) / 0.02 A
Min. input load as voltage output		10 kΩ

**Output 1 max. 0.2 A.

Standard pin assignment

Plug connection

	2 x M12 (EBS) (galvanically isolated)
Dimensions	
Number of pins	4-pin / 4-pin
DIN EN	61076-2-101
Voltage max.	30 VDC
Contact load max.	0.5 A per output
total max.	1 A

Version	1D3S		1D1S-KN-KT	
Plug	2x M12 4-pin		2x M12 4-pin	
Connection schematic	Plug A 	Plug B 	Plug A 	Plug B
Pin				
1	+24 VDC	+24 VDC	+24 VDC	+24 VDC
2	S2 (PNP)	S4 (PNP)	S2 (PNP)	Level (analogue)
3	GND	GND	GND	GND
4	S1 (PNP) *	S3 (PNP)	S1 (PNP)	Temp. (analogue)

* When used as IO-Link, PIN 4 on plug A = C/Q (switching and communications line). Plug B is then not required and must be sealed with a plug to maintain the IP rating (IP65)!

Ordering Instructions

Item no.	Type	Length (L)	Preset Level*	Preset Temperature**
101177900301	FCT-G1/2-NV77XP-MA-DC01/280-1D3S	280 mm	L1 = 150 mm NC (S1) L2 = 190 mm NO (S2)	T1 = 50 °C NC (S3) T2 = 60 °C NC (S4)
101177900302	FCT-G1/2-NV77XP-MA-DC02/370-1D3S	370 mm	L1 = 150 mm NC (S1) L2 = 200 mm NO (S2)	T1 = 50 °C NC (S3) T2 = 60 °C NC (S4)
101177900303	FCT-G1/2-NV77XP-MA-DC03/370-1D3S	370 mm	L1 = 200 mm NC (S1) L2 = 300 mm NO (S2)	T1 = 50 °C NC (S3) T2 = 60 °C NC (S4)
101177900304	FCT-G1/2-NV77XP-MA-DC04/500-1D3S	500 mm	L1 = 200 mm NC (S1) L2 = 300 mm NO (S2)	T1 = 50 °C NC (S3) T2 = 60 °C NC (S4)
			* Hysteresis 10 mm	** Hysteresis 5 K

with analogue outputs

Item no.	Type	Length (L)	Level (analogue)	Temp. (analogue)
101177900305	FCT-G1/2-NV77XP-MA-DC05/280-1D1S-KN-KT	280 mm	25 mm (20 mA) 245 mm-(4 mA)	0 °C = 4 mA 100 °C = 20 mA
101177900306	FCT-G1/2-NV77XP-MA-DC06/370-1D1S-KN-KT	370 mm	25 mm (20 mA) 335 mm-(4 mA))	0 °C = 4 mA 100 °C = 20 mA
101177900307	FCT-G1/2-NV77XP-MA-DC06/500-1D1S-KN-KT	500 mm	25 mm (20 mA) 465 mm-(4 mA)	0 °C = 4 mA 100 °C = 20 mA

*Function of level switching points NC = falling NO contact, NO = falling NC contact