



flow & process solutions





Potravinářský průmysl
Farmaceutický průmysl
Biotechnologie
Petrochemie
Chemický průmysl
Energetika
Úprava vody
Papírenství a zpracování celulózy
Plynárenský průmysl
Keramický průmysl
Zpracovatelský průmysl



Firma s tradicí od r. 1990 se při svém vzniku zaměřila na dodávky základních komponent, přístrojové a měřicí techniky a dodávky technologií pro farmaceutický a potravinářský průmysl. Cílem bylo zajistit kompletní dodavatelsko - inženýrské služby, včetně servisu. V roce 1998, který byl pro firmu velmi významným mezníkem, proběhla transformace společnosti do nynější formy. V dalších letech činnosti společnosti dochází k rozšíření portfolia a je navazována spolupráce s partnery v oblasti armatur, komponent, ventilů, procesní měřicí techniky a čerpadel.

Oblastí působnosti je potravinářský, farmaceutický průmysl, biotechnologie, chemický průmysl, petrochemie, úprava vody, papírenství a celulóza, energetika, keramický průmysl a zpracovatelský průmysl.

Firma REGOM INSTRUMENTS je díky širokému dodavatelskému portfoliu a bohatým zkušenostem schopna zajistit dodávky armatur, komponent, čerpadel, přístrojů a zařízení.

Cílem společnosti REGOM INSTRUMENTS je poskytování kvalitních služeb a spolehlivých dodávek pro co nejširší okruh zákazníků.

Product Information NFP-41

FOOD

Level Detector with integrated Temperature Sensor NFP-41



Application / Specified Usage

- Level detection and temperature measurement in one device

Application Examples

- Dry running and temperature protection in pipes
- Level detection and temperature measurement in vessels

Hygienic Design / Process Connection

- Hygienic process connection with CLEANadapt
- Conforming to 3-A Sanitary Standard for versions with DIRECTadapt
- All wetted materials are FDA-conform
- Sensor completely made of stainless steel
- Complete overview of process connections: see order code
- The Anderson-Negele CLEANadapt system offers a flow-optimized, hygienic and easily sterilizable installation solution for sensors.

Features

- CIP-/ SIP-cleaning up to 140 °C / max. 120 minutes
- Level detection and temperature measurement in one measurement point
- Available with or without integrated electronic

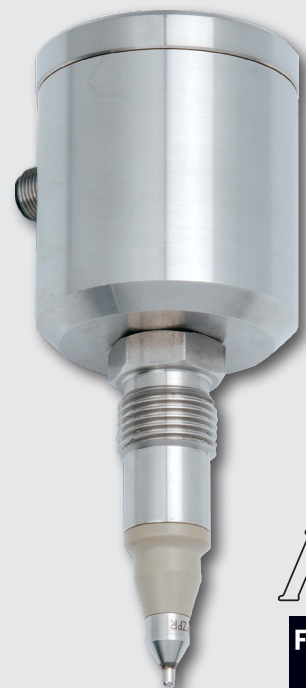
Options / Accessories

- Integrated temperature and level electronic (MPU-4, MNV-1)
- Readymade connecting cable for M12 plug-in

Communication

 4...20 mA

Temperature sensor NFP-41



Specification NFP-41		
Process connection	conforming to 3-A	CLEANadapt G1/2"
Insertion length		29 mm
Material	head protection tube M12-plug insulator	stainless steel 1.4301 (AISI 304) stainless steel 1.4404 (AISI 316) stainless steel 1.4301 (AISI 304) PEEK (FDA approval number 21CFR177.2414)
Sensing resistor	acc. ITS 90	1xPt100 class A
Protection class		IP 69 K
Temperature range	ambient sensor tip	-50...+80 °C -50...+150 °C
Operating pressure		max. 10 bar
Electrical connection	plug-in connection	M12-plug, 5 pins
Thread size G1/2"	Sealing system PEEK	10 Nm torque max.

Level Module MNV-1		
Temperature	operating storage	-10...+80 °C -20...+90 °C
Humidity	without condensate	0...95 %
Supply		15...36 V DC
Sensor measurement		free of DC voltage
Sensitivity	MNV-1	0.1; 1; 10; 100 kΩ selectable
Output	short-circuit-proof	active 50 mA
Delay	fix	0.5 s
Switching logic	MNV-1	via jumpers (full/empty selectable)

Transmitter MPU-4		
Temperature ranges	standard	-10...+40; 0...50 °C / 100 °C / 150 °C
Accuracy		< ±0.25 % (range 0...150 °C)
Temperature drift	zero, span	< 0.01 %/K
Electrical connection	supply	8...35 V DC
Output	analog	4...20mA
Temperature range	ambient storage	-40...+85°C -40...+120°C
Humidity	without condensation	0...98 %

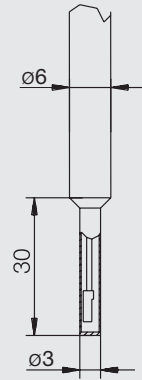
Accuracy classes of temperature sensors Tolerances for Pt100 acc. to DIN EN 60751			
Pt100	A	1/3 B	1/10 B
0 °C / 100 Ω	±0.15 K / ±0.06 Ω	±0.10 K / ±0.04 Ω	±0.03 K / ±0.01 Ω
100 °C / 138.5 Ω	±0.35 K / ±0.13 Ω	±0.27 K / ±0.10 Ω	±0.08 K / ±0.03 Ω

Sensor tip diameter and response time

All temperature sensors are available with smaller sensor tips, to ensure a shorter response time. The below-mentioned times were measured by immersing a temperature sensor from room temperature into boiling water.

Sensor tip Ø 3 mm

Response time: $t_{50} \leq 0.5 \text{ s}$
90 %-time: $t_{90} \leq 1.5 \text{ s}$



Mounting Instruction

- Take attention of the maximal torque when you build in the sensor!
- To guarantee a safe function, take a look on a good electrical connection between process connection of the sensor and the pipe or vessel.
- **Do not use any kind of sealing band like e.g. TEFLON tape!**
- Using the sensor in pipes for dry running protection, take care that the electrode will emerge if the pipe runs out. We propose to install the sensor in vertical pipes.
- Vessel resp. pipe wall must be made of steel!
- Please mounting and demounting the sensor, please use the spanner flat only! Do not use the connecting head!
- **Do not shorten the electrode!**

General Operating Manual

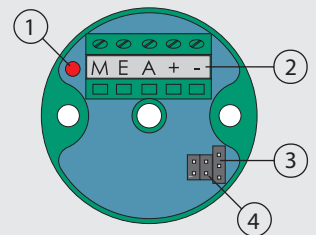
- Mount the sensor into the fitting and perform wiring according to connection figures.

Startup the level module MNV-1

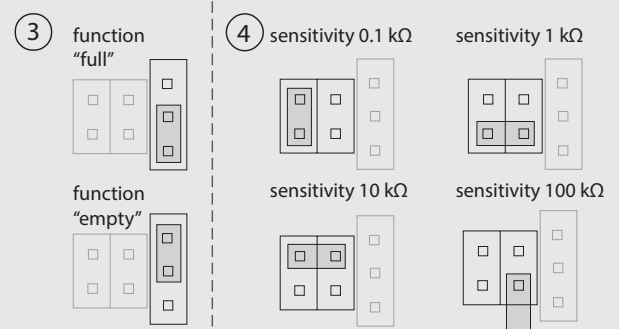
- Connecting to the voltage supply
- Setup the switching logic: see figure
- Select the lowest sensitivity (0.1 kΩ).
- Wetting the electrode with the medium with the lowest conductivity
- If the output is switching, the setup is finished.
- If the output is not switching, increase the sensitivity until the output is switching. Setup is finished.

Level transmitter MNV-1C

- 1: LED sensor (lights up when the sensor is immersed, independent of the switching function)
- 2: Terminal block
- 3: Full/empty jumper
- 4: Sensitivity jumper



Configuration of the MNV-1C level transmitter

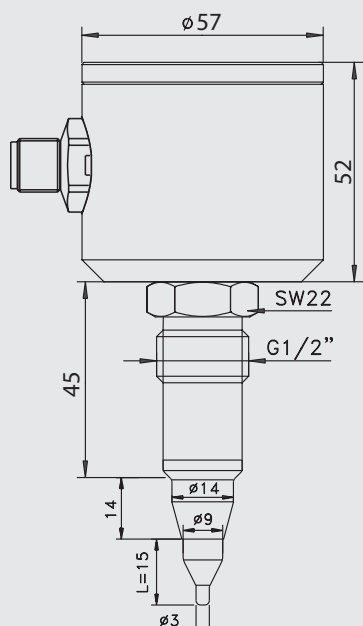


Standard setting on delivery

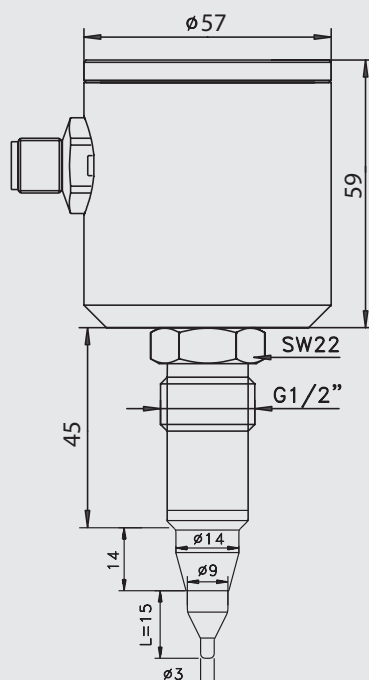
3: full

4: 10 kΩ

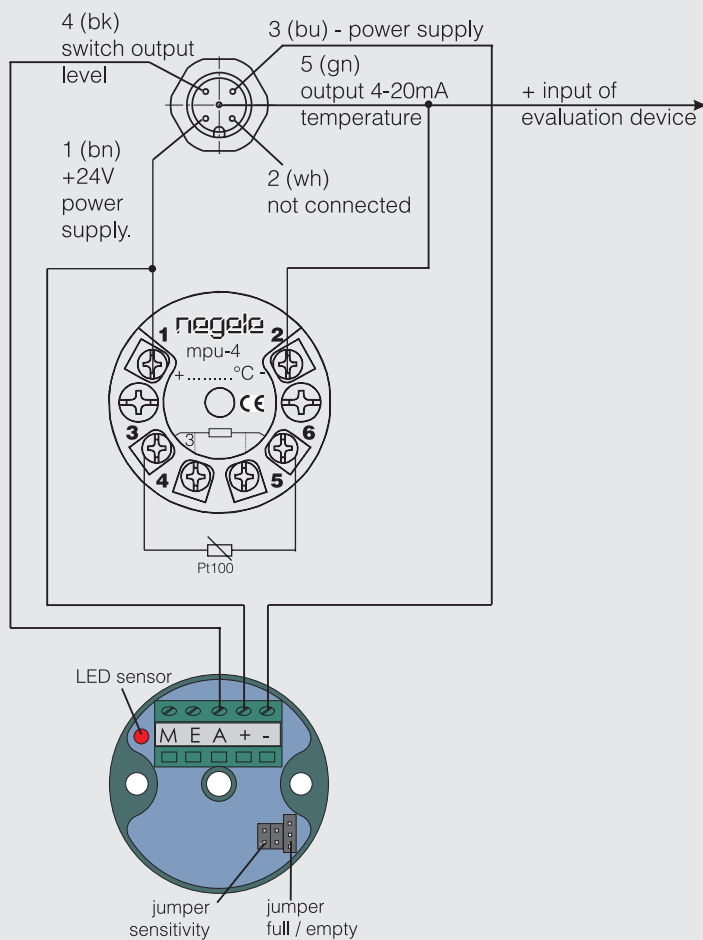
NFP-41



NFP-41 with MNV-1 and MPU-4 integrated

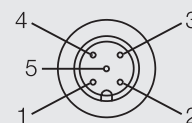


Electrical connection with transmitter for temperature and level

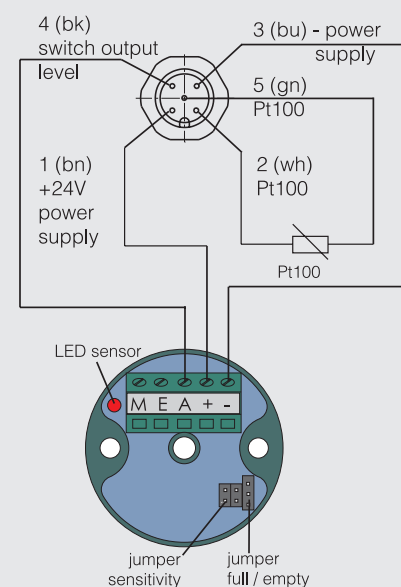


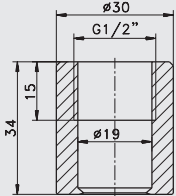
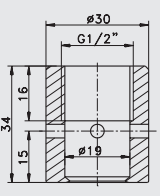
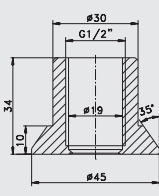
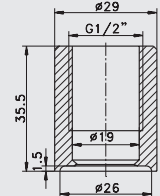
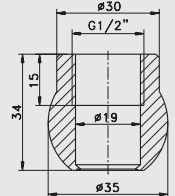
Without level transmitter

- 1: not connected
- 2: Pt100
- 3: GND
- 4: probe
- 5: Pt100

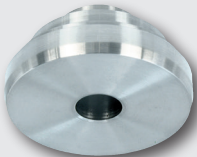
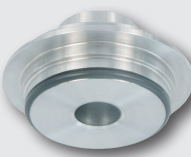
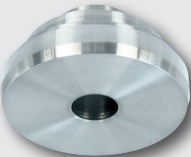


With level transmitter and Pt100

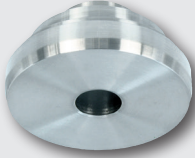


Weld-in sleeves					
CLEANadapt G1/2"					
					
	Cylindrical sleeve	Cylindrical sleeve with leakage hole	Weld-in sleeve with collar	Cylindrical sleeve with weld-in ring	Weld-in ball
	EMZ-132 * (for vessels)	EMZ-131 * (for vessels with leak monitor)	EMK-132 * (for thick-walled vessels)	EMS-132 * (for installation on pulled-out pipes)	KEM-132 * (for sloped installation)

* Deliverable with material 1.4435 and 3.1 inspection certificate on request.

Adapter to standard process connections						
CLEANadapt G1/2"						
Diameter	Milk pipe (DIN 11851)	Tri-Clamp	Varivent-Inline	Tri-Clamp with tell-tale hole	DRD (press ring optional)	
DN10	-	-	AMV-132/DN10	AMC-131/DN10	AMK-132/DN50	
DN15	-	AMC-132/DN10	AMV-132/DN10	AMC-131/DN10	AMK-132/DN50	
DN20	AMK-132/DN20	AMC-132/DN10	-	AMC-131/DN10	AMK-132/DN50	
DN25 1"	AMK-132/DN25	AMC-132/DN25	AMV-132/DN25	AMC-131/DN25	AMK-132/DN50	
DN32	AMK-132/DN32	AMC-132/DN25	AMV-132/DN25	AMC-131/DN25	AMK-132/DN50	
DN40 1½"	AMK-132/DN40	AMC-132/DN25	AMV-132/DN40	AMC-131/DN25	AMK-132/DN50	
DN50 2"	AMK-132/DN50	AMC-132/DN50	AMV-132/DN40	AMC-131/DN50	AMK-132/DN50	
	2½"	AMK-132/DN65	AMC-132/2½"	AMV-132/DN40	AMC-131/2½"	-
DN65	AMK-132/DN65	AMC-132/DN65	AMV-132/DN40	AMC-131/DN65	AMK-132/DN50	
	3"	-	AMC-132/DN65	AMV-132/DN40	AMC-131/DN65	-
DN80	AMK-132/DN80	AMC-132/DN80	AMV-132/DN40	AMC-131/DN80	AMK-132/DN50	
DN100	AMK-132/DN100	-	AMV-132/DN40	AMC-131/DN100	AMK-132/DN50	

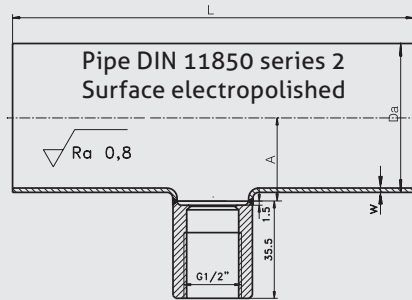
Adapter to standard process connections

G1/2"						
Diameter		APV-Inline	SMS	BioControl		
DN20		-	AMK-132/20	-		
DN25	1"	-	AMK-132/25	-		
DN32		-	AMK-132/32	-		
DN40	1½"	AMA-132	AMK-132/40	AMB-50/½" and AMB-65/½" from DN40 up to DN100		
DN50	2"	AMA-132	AMK-132/50			
DN65	2½"	AMA-132	AMK-132/65			
DN80		AMA-132	AMK-132/80			
DN100		AMA-132	AMK-132/100			

Adapter G1/2" to other thread sizes and accessories

G1/2"					
	Adapter	Adapter	Adapter	Adapter	Blind plug
	AMG-1 (CLEANadapt G1" to CLEANadapt G1/2")	AMG-132 (Standard thread G1" to CLEANadapt G1/2")	AMG-132 / 3/4" (Standard thread G3/4" to CLEANadapt G1/2")	AMG-132 / 1¼" (Standard thread G1¼" to CLEANadapt G1/2")	BST-130 (to close a CLEANadapt G1/2" measurement point)

Dimensions EHG-DIN2-... / 1/2"



EHG-DIN2-... / 1/2"



Dimensions table EHG-DIN2-... / 1/2"

Type	DN	L	A	Da x W
EHG-DIN2-25 / 1/2"	25	100	15	29 x 1.5
EHG-DIN2-40 / 1/2"	40	120	22	41 x 1.5
EHG-DIN2-50 / 1/2"	50	140	29	53 x 1.5
EHG-DIN2-65 / 1/2"	65	160	38	70 x 2.0
EHG-DIN2-80 / 1/2"	80	180	46	85 x 2.0
EHG-DIN2-100 / 1/2"	100	200	55	104 x 2.0
EHG-DIN2-125 / 1/2"	125	375	69,5	129 x 2,0
EHG-DIN2-150 / 1/2"	150	450	82,0	154 x 2,0

Transport / Storage



- No outdoor storage
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration
- Storage temperature -55 °C...+90 °C
- Relative humidity max. 98 %

Conventional Usage



- Not suitable for applications in explosive areas.
- Not suitable for applications in security-relevant equipments (SIL).

Cleaning / Maintenance



- In case of using pressure washers, don't point nozzle directly to electrical connections!

Reshipment



- Sensors shall be clean and must not be contaminated with dangerous media!
- Use suitable transport packaging only to avoid damage of the equipment!

Note on CE



- Applicable directives:
Electromagnetic Compatibility Directive 2014/30/EU
- Compliance with the applicable EU directives is identified by the CE label on the product.
- The operating company is responsible for complying with the guidelines applicable to the entire installation.

Standards and Guidelines



- You have to comply with applicable regulations and directives.

Disposal



- Electrical devices should not be disposed of with household trash. They must be recycled in accordance with national laws and regulations.
- Take the device directly to a specialized recycling company and do not use municipal collection points.

Conditions for a measuring point according to 3-A Sanitary Standard 74-06



- The sensors NFP-41 conforming to the 3-A Sanitary Standard.
- The Sensors are designed for CIP-/ SIP-cleaning. Maximum 140 °C / 120 minutes.
- Only with the build-in system **CLEANadapt** (EMZ, EMK, EHG with pipe diameter ≥ DN25, ISO 20 and 1", Adapter AMC and AMV) allowed.
- Using the weld in sleeve EMZ, EMK the weld must comply to the requirements of the current 3-A Sanitary Standard.
- Mounting position, self draining and the position of the leakage hole must be in accordance to current 3-A Sanitary Standard.

Order Code

NFP-41

Sensor length

015

(Sensor length in mm)

Electrical connection

M12

(M12- Stecker)

Transmitter

X

(without)

MNV

(integrated level transmitter)

MNV/MPU

(integrated level and temperature transmitter)

Measurement range temperature transmitter

-10...40

(range -10...+40 °C)

0...50

(range 0...+50 °C)

0...100

(range 0...+100 °C)

0...150

(range 0...+150 °C)

NFP-41 / 015 / M12 / MNV/MPU / 0...150

Accessories

PVC-cable with M12-connection made of 1.4305, IP 69 K, unshielded

M12-PVC / 5-5 m

PVC-cable 5-pin, length 5 m

M12-PVC / 5-10 m

PVC-cable 5-pin, length 10 m

M12-PVC / 5-25 m

PVC-cable 5-pin, length 25 m

PVC-cable with M12-connection, brass nickel-plated, IP 67, shielded

M12-PVC / 5G-5 m

PVC-cable 5-pin, length 5 m

M12-PVC / 5G-10 m

PVC-cable 5-pin, length 10 m

M12-PVC / 5G-25 m

PVC-cable 5-pin, length 25 m

Programming adapter

MPU-P 9701

Programming adapter for
MPU-4, MPU-H and MPU-M

PVC-cable with M12-connection



Programming adapter MPU-P 9701





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