

- For limit level detection of liquids
- Media temperature up to +130°C
- Simple assembly, long service-life
- Housing and electrode is from stainless steel
- Designed with short bar electrode or dismountable rod electrode



Conductive probes CNP-18 are designed for direct detection of conductive liquids level (water, water solutions). The process connection is M18x1.5 threaded connection, and electrical by fixed cable or screw connector. The probes are connected to Dinel evaluation unit, type CDSU-522 (CDSU-522-W), or other types of evaluation units suitable for connection of the conductive sensors.

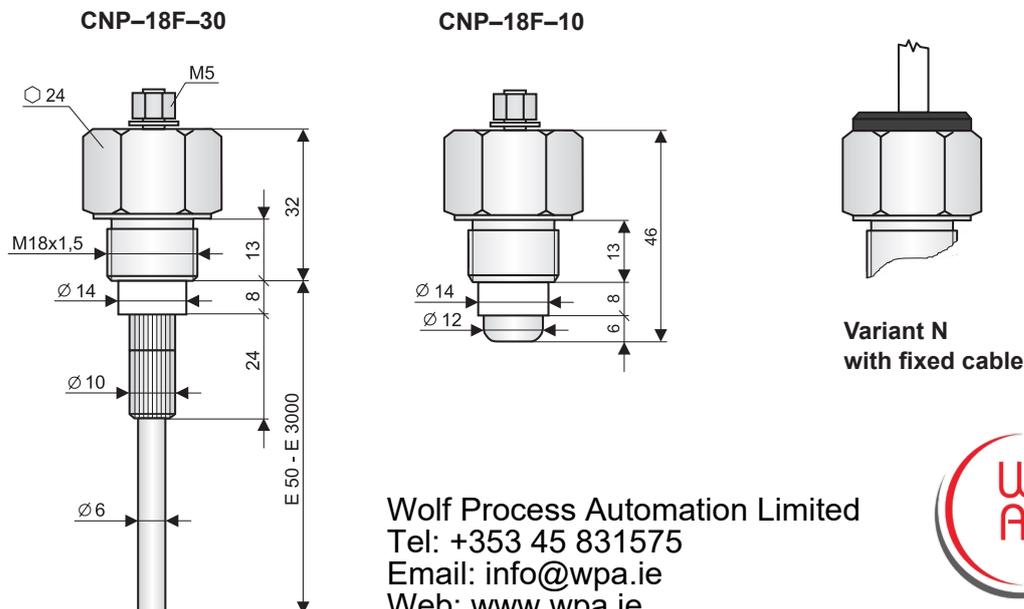
FEATURES OF VARIANTS

- | | |
|-------------------|--|
| CNP-18N-10 | Short bar electrode for horizontal mounting, fixed cable |
| CNP-18F-10 | Short bar electrode for horizontal mounting, screw connector |
| CNP-18N-30 | Dismountable rod electrode (from 50 up to 3000 mm) for vertical mounting, fixed cable |
| CNP-18F-30 | Dismountable rod electrode (from 50 up to 3000 mm) for vertical mounting, screw connector |

TECHNICAL SPECIFICATION

Ambient temperature		Max. 95°C
Maximum pressure	For 25°C For 95°C	4 MPa 1.5 MPa
Cable	CNP-18N CNP-18F	PVC 2x 0.75 mm ² (Screw connector)
Insulation bushing		PTFE (Polytetrafluorethylene)
Protection class (CNP-18N)		IP67
Housing material		St. steel W.Nr. 1.4305 (AISI 303)
Weight		Approx. 100 g

DIMENSIONAL DRAWINGS

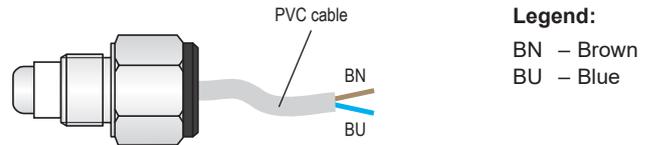


Wolf Process Automation Limited
 Tel: +353 45 831575
 Email: info@wpa.ie
 Web: www.wpa.ie

ELECTRICAL CONNECTION

Variants "CNP-18N" are manufacture with 2-wire fixing cable. Housing probe is electrically connection to blue conductor (BU), probe electrode is electrically connection to brown conductor (BN). Probe variants CNP-18F are manufacture with screw connector electrically connection to housing.

For evaluate the states of conductive probes we recommended use Dinel Level control relay units (CDSU-522 or CDSU-522-W).



Legend:
BN – Brown
BU – Blue

Fig. 1: CNP-18N cable connection

ACCESSORIES

Standard (included in the conductive probe price)

- 2 m cable (only for CNP-18N)

ORDER CODE

PRODUCT	
CNP-18	
PERFORMANCE TYPE	
N	fixed cable
F	screw connector M5
ELECTRODE TYPE	
10	bar electrode, length 14 mm
30	dismountable rod electrode, length 50 ... 3000 mm
PROCESS CONNECTION	
M18	metric thread M18 x 1,5
G1/2	thread G 1/2"
G3/8	thread G 3/8"
LENGTH OF ELECTRODE	
E	length of electrode in mm
CABLE	
K	cable length in m
CNP-18 N - 30 - M18 E1200 K 3 M	
EXAMPLE OF PRODUCT CODE	

CORRECT SPECIFICATION EXAMPLES

CNP-18N-10-M18 cable 10 m

(**N**) Fixed cable (length 10 m); (**10**) Bar electrode (length 14 mm); (**M18**) Process connection with metric thread M18x1.5

CNP-18F-30-M18 E450

(**F**) Screw connector M5; (**30**) Dismountable rod electrode (length 450 mm); (**M18**) Process connection with metric thread M18x1.5

CNP-18N-30-M18 E1200 cable 3 m

(**N**) Fixed cable (length 3 m); (**30**) Dismountable rod electrode (length 1200 mm); (**M18**) Process connection with metric thread M18x1.5



The manufacturer reserves the right to change the specifications and appearance of the product without prior notice.

CNP-dat-2.2



QMS
ISO 9001

Dinel, s.r.o.
U Tescomy 249
760 01 Zlín, Czech Republic

Phone: +420 577 002 003

sale@dinel.cz
www.dinel.cz

- Function of pump control (Low-high level control) or independent 2-channel function
- For connection of one or two probes
- Continuous sensitivity adjustment and time delay set up
- Optical state indication
- Cases for wall mounting or for mounting on DIN rail 35mm



Level control relay CDSU are dual channel units designed to evaluate the states of the conductive probes. They include power supply 5 V AC for supplying the probes. The DIP switches enable to select a basic mode (an independent function of two limit sensors) or the level control mode between the maximum and minimum level (pump control). The level control relay allows continuous sensitivity adjustment and time delay set up by trimmer.

FEATURES OF VARIANTS

CDSU-522 **DIN rail mounting**, continuous sensitivity adjustment, fixed output delay time.

CDSU-522-W **Wall mounted case**, possible outdoor installation (protection class IP65), continuous sensitivity adjustment and time delay set up.

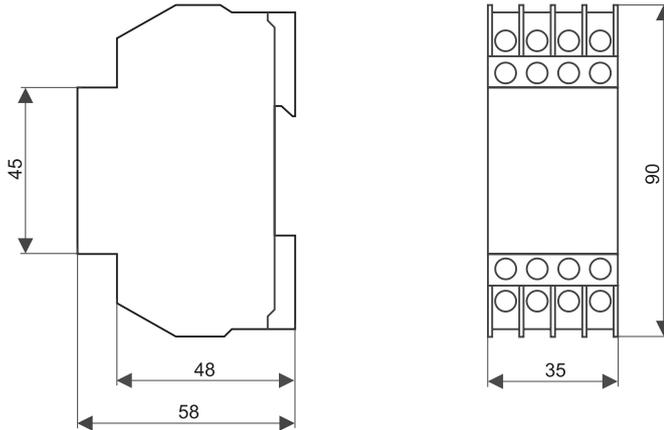
TECHNICAL SPECIFICATIONS

	CDSU-522	CDSU-522-W
Nominal supply voltage	230 V AC / 50 Hz (± 10 %)	230 V AC / 50 Hz (± 10 %)
Nominal power demand	4 VA	4 VA
Output voltage to supply probes	5 V AC / 70 Hz	5 V AC / 70 Hz
Output short circuit current	0.2 mA	0.2 mA
Max. duration of output short-circuit	Unlimited	Unlimited
No. of connecting probes	1 or 2 (+ common)	1 or 2 (+ common)
No. of switching channels	2	2
Input currents	0 ... 0.2 mA *	0 ... 0.2 mA *
Range of continuous sensitivity	10 ... 250 kΩ	10 ... 250 kΩ
Output delay	1 s	0.5 ... 10 s
Contact rating	Max. load current 2 A Max. switching voltage 250 V Max. switching power 500 VA	2 A 250 V 500 VA
Max. switching frequency at maximum load	360 / h	360 / h
Contact life at maximum load	Min. 10 ⁶ cycles	Min. 10 ⁶ cycles
Ambient temperature range	-20 ... +50°C	-20 ... +50°C
Maximum / recommended conductor size	4 mm ² / 0.5 ... 1 mm ²	2.5 mm ² / 0.14 ... 0.5 mm ²
Protection class	IP20	IP65
Weight	Approx. 0.2 kg	Approx. 0.35 kg

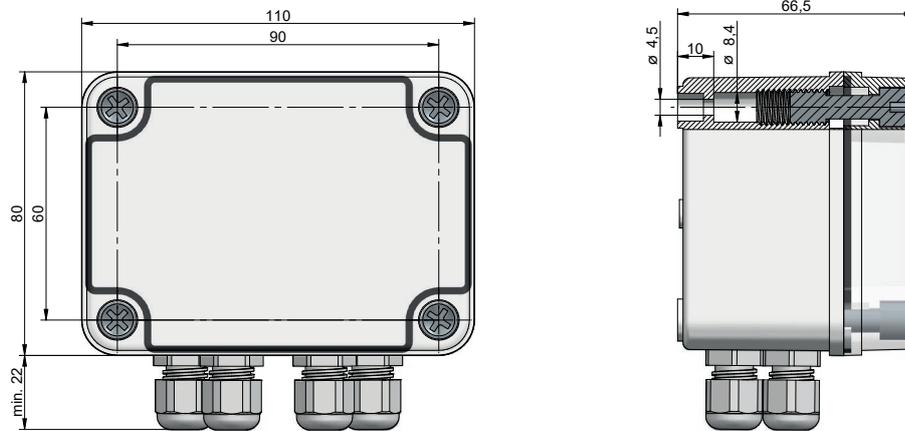
* by adjusted sensitivity

DIMENSIONAL DRAWING

CDSU-522

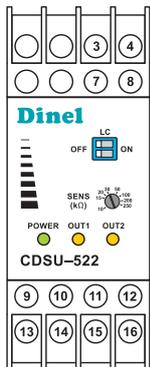


CDSU-522-W

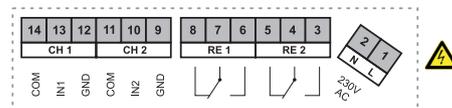
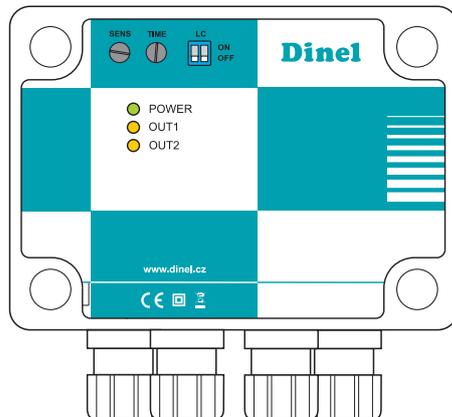


FRONT PANEL AND TERMINAL BLOCK

CDSU-522



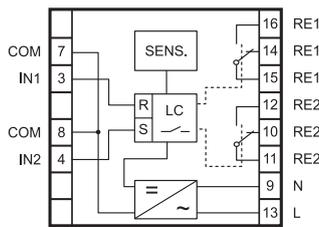
CDSU-522-W



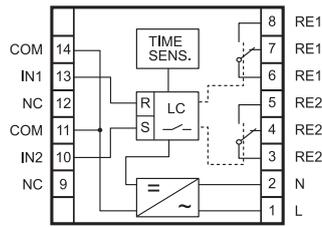
Terminal	CDSU-522	CDSU-522-W
1		L (230 V)
2		N (230 V)
3	IN1	RE2
4	IN2	RE2
5		RE2
6		RE1
7	COM	RE1
8	COM	RE1
9	L (230 V)	
10	RE2	IN2
11	RE2	COM
12	RE2	
13	N (230 V)	IN1
14	RE1	COM
15	RE1	
16	RE1	

Note: Due to the safety protection, both relay outputs (RE 1 and RE 2) must be connected to the same voltage level (such as 230 V and 230 V or 24 V and 24 V).

INNER BLOCK DIAGRAMS



CDSU-522



CDSU-522-W

Legend:

- COM** – Common conductive probe
- IN1** – Measuring conductive probe No. 1
- IN2** – Measuring conductive probe No. 2
- RE1** – Relay No.1 contacts
- RE2** – Relay No.2 contacts
- L, N** – Supply voltage input (230 V AC)
- NC** – Not connected

Note: The relays are released in inner block diagrams.

OPERATING ELEMENTS

- **Switch “LC”** – *position OFF:* Activation of the basic mode
– *position ON:* Activation of the pump control mode
- **Trimmer “SENS”:** Setting the sensitivity (10 to 250 kΩ)
- **Trimmer “TIME” (CDSU-522-W):** Setting the output delay (0.5 to 10 s). Level control relay aren't responding on short-term level changes, which are smaller than present (setted) value.

FUNCTION DESCRIPTION

Basic mode – “LC” switch in OFF position

- Activation the probe connected to IN 1 input causes closing the output relay RE 1 terminals 16; 15 (CDSU-522) or 8; 6 (CDSU-522-W) are closed and shining LED indicator “OUT 1”.
- Activation the probe connected to IN2 input causes closing the output relay RE 2 terminals 12; 11 (CDSU-522) or 5, 3 (CDSU-522-W) are closed and shining LED indicator “OUT 2”.

Pump-up function – “LC” switch in ON position

- When the level drops below the probe connected to IN 1 (MIN) input, the output relay RE 1 terminals 16; 15 (CDSU-522) or 8; 6 (CDSU-522-W) are closed. LED indicator “OUT 1” start shining. This starts the active device (pump, valve, etc.) and the level goes up. When the level reaches the position of the probe connected to IN 2 (MAX) input, the output relay RE 1 terminals 16; 15 (CDSU-522) or 8; 6 (CDSU-522-W) are open. This stops the active device and the level goes down. LED indicator “OUT 1” darkens.

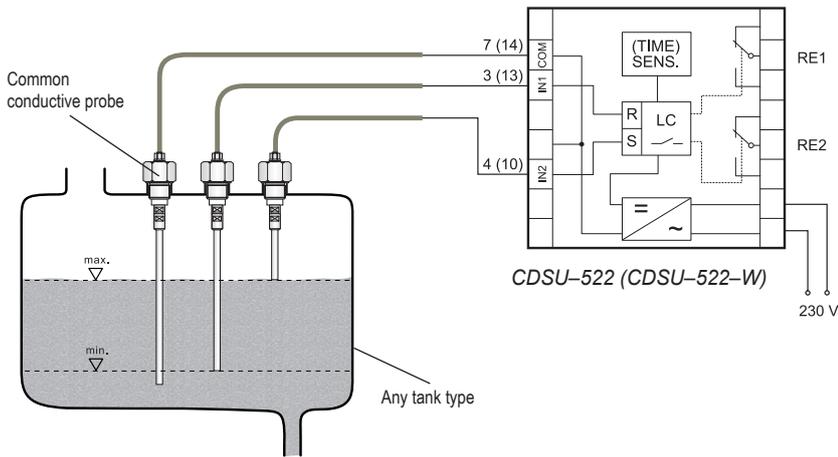
Pump-down function – “LC” switch in ON position

- When the level drops below the probe connected to IN 2 (MAX) input, the output relay RE 1 terminals terminals 14; 15 (CDSU-522) or 7; 6 (CDSU-522-W) are closed. LED indicator “OUT 1” darkens. This starts the active device (pump, valve, etc.) and the level goes down. When the level reaches the position of the probe connected to IN 1 (MIN) input, the output relay RE 1 terminals 14; 15 (CDSU-522) or 7; 6 (CDSU-522-W) are open. This stops the active device and the level goes up. LED indicator “OUT 1” start shining.

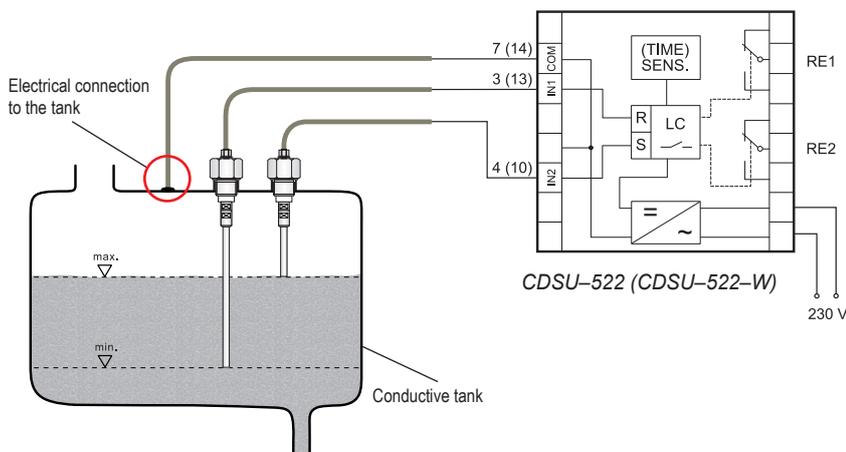
STATUS SIGNALIZATION

LED indicators	Colour	Function
“POWER”	Green	Shines – Device connected to supply voltage, correct function Dark – Power loss or internal failure
“OUT 1”	Orange	Shines – The output relay RE 1 is closed Dark – The output relay RE 1 is open
“OUT 2”	Orange	Shines – The output relay RE 2 is closed Dark – The output relay RE 2 is open

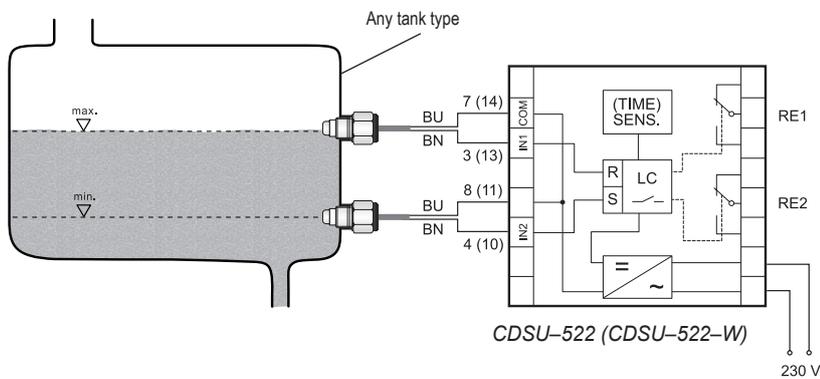
WIRING EXAMPLES



Level control relay CDSU for connection to three conductive probes (CNP-18-30) in **any** tank type.



Level control relay CDSU for connection to two conductive probes (CNP-18-30) in **conductive** tank type.



Level control relay CDSU for connection to two conductive probes (CNP-18-10) in **any** tank type.

Legend:

BN – Brown
BU – Blue

Note: The relays are released in inner block diagrams.

SAFETY, PROTECTION AND COMPATIBILITY

Level control relays are equipped with protection against current overload. Units are sheltered by fuse T 50 mA. Electrical equipment of protection group II. Electrical safety according to EN 61010-1.

Electromagnetic compatibility according to EN 55022, EN 61000-4-2, -3, -4, -5, -6, -11 and EN 61000-6-2.



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Dinel, s.r.o.
U Tescomy 249
760 01 Zlín, Czech Republic

Phone: +420 577 002 003

CDSU-dat-4.4

sale@dinel.cz
www.dinel.cz