- **Two-wire connection, two independent relay outputs**
- **Integrated power supply for supplying the sensors**
- **Wall-mounted case**
- **Function of pump control**
- **Optical state indication**
- **Simple operation and installation**

Evaluation and switching units are designed to evaluate the states of the limit sensors and conductive probes. They include power supply 5 V AC or 12 V DC (depending on the version) for supplying the sensors. 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).

FEATURES OF VARIANTS

- ***DSU–1222–W*** ***For limit sensors with 2 and 3-wire performance connection****,* stabilized power supply 12 V DC.
- ***SDSU–1222–W*** ***For connection of third wire programmable sensors*** – as e.g. FLD–48 "Meduse". It includes programming buttons for setting the sensor and stabilized power supply 12 V DC.
- ***CDSU–522–W*** ***For conductive probes***, continuous sensitivity setting and delay period, it includes power supply 5 V AC.

TECHNICAL SPECIFICATIONS

		DSU-1222-W	*SDSU-1222-W*	*CDSU-522-W*
Nominal supply voltage		230 V / 50 Hz (± 10%)		
Nominal power demand		4 VA		
Output voltage		12 V DC (± 10%)		5 V AC (± 5%)
Maximum output current (incl. input IN1,2)		max. 50 mA		—
Output short circuit current		typ. 300 mA		0,2 mA
Max. duration of output short-circuit		unlimited		
Max. input (short circuit) current		max. 6 mA		0,2 mA
Input currents	- to switch on - to switch off - threshold current	min. 2 mA max. 1 mA typ. 1,5 mA		0 to 0,2 mA (by adjusted sensitivity)
Range of continuous sensitivity		—		10 to 250 kΩ
Output delay		—		0,5 to 10 sec.
Contact rating	- max. load current - max. switching voltage - max. switching power	2 A 250 V 500 VA		
Max. switching frequency at max. load		360 / h		
Contact life at max. load		min. 10^6 cycle		
Ambient temperature range		–20°C to +50°C		
Max. conductor size		4 mm^2		
Protection class		IP 65		

Operating elements

DSU, SDSU, CDSU

switch "LC"	*– OFF*	Activation of the basic mode
	– ON	Activation of the pump control mode

DSU-1222-W

switch "CH 1,2"	*– P*	The unit reacts to the current flowing into the input term. (10, 13). Designed for PNP type sensors
	– N	The unit reacts to the current flowing from the input terminals (10, 13). Designed for NPN and S type sensors

SDSU-1222-W

switches "CH 1,2"	Selection set sensors (buttons "SETTING OFF", "SETTING ON" belong to the selected sensor)
button "SETTING ON"	Setting the selected sensor to open state
button "SETTING OFF"	Setting the selected sensor to closed state

CDSU-522-W

trimmer "SENS"	Setting the sensitivity (10 to 250 kΩ)
trimmer "TIME"	Setting the output delay (0,5 to 10 sec.)

Type of sensors output

DSU-1222-W

2-wire connection – output – electronic current switch type S (SO, SC)
3-wire connection – output – open collector output – type NPN (NO, NC) and type PNP (PO, PC).

The sensor type selection on the unit is performed by switching the DIP switch to P position (sensors PO, PC) or to N position (other types of sensors). Mutual combination of PO, PC sensors with other types is not permissible. Combining sensors NO, NC, with SO and SC is possible.

SDSU-1222-W

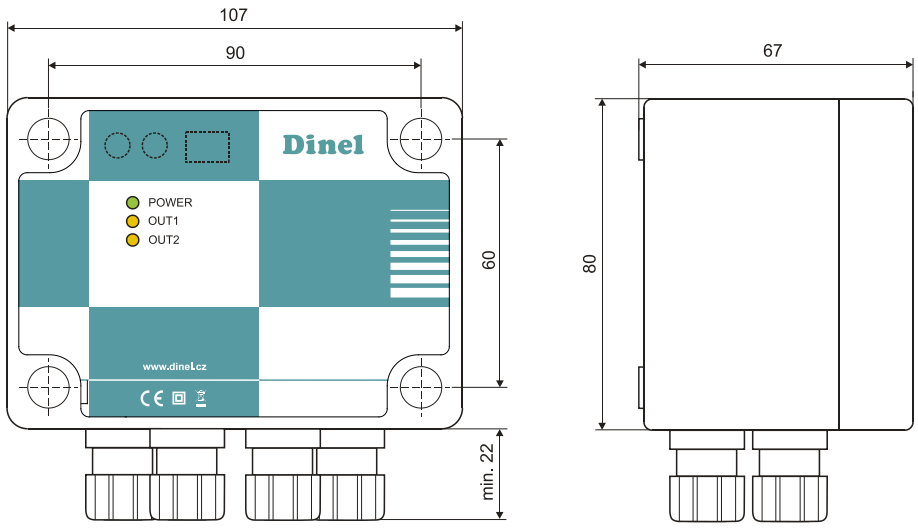
2-wire connection – electronic current switch S (SO, SC) + third programming wire.

CDSU-522-W

1-wire connection – individual measuring conductive probe and common conductive probe
2-wire connection – conductive probes of Dinel CNP–18N type (common conductive probe is not necessary)

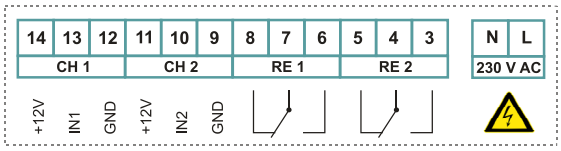
Dimension drawing

(the look of the unit front panel is for information purposes, it differs as per individual types)

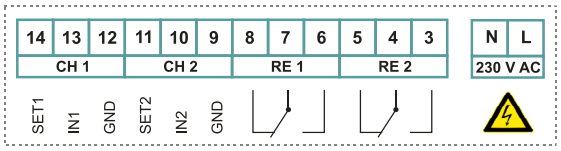


Terminal of units

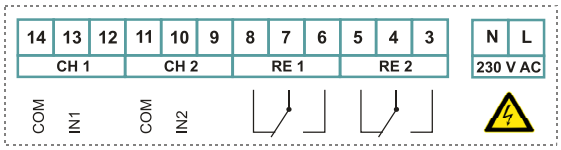
DSU–1222–W



SDSU–1222–W



CDSU–522–W



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).

Function description *(applies to all types)*

***Basic mode** – LC switch in OFF position*

Activation the sensor (probe) connected to IN 1 input causes closing the output relay RE 1 (terminals 7-6 are closed) and shining LED indicator "OUT 1".

Activation the sensor (probe) connected to IN 2 input causes closing the output relay RE 2 (terminals 4-3 are closed) and shining LED indicator "OUT 2".

***Pump-up function** – LC switch in ON position*

When the level drops below the sensor (probe) connected to IN 1 (MIN) input, the output relay RE 1 closes (terminals 7-6 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 sensor connected to IN 2 (MAX) input, the output relay RE 1 opens (terminals 7-6 are open). This stops the active device and the level goes down. LED indicator "OUT 1" darkens.

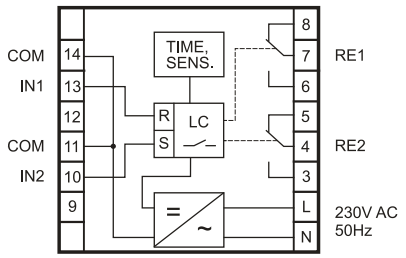
***Pump-down function** - LC switch in ON position*

When the level drops below the sensor (probe) connected to IN 2 (MAX) input, the output relay RE 1 opens (terminals 7-8 are closed), LED indicator "OUT 1" darknes. This starts the active device (pump, valve, etc.) and the level goes down. When the level reaches the position of the sensor connected to IN 1 (MIN) input, the output relay RE 1 closes (terminals 7-8 are open). This stops the active device and the level goes up. LED indicator "OUT 1" start shining.

Note: DSU–1222–W and SDSU–1222–W in pump function:

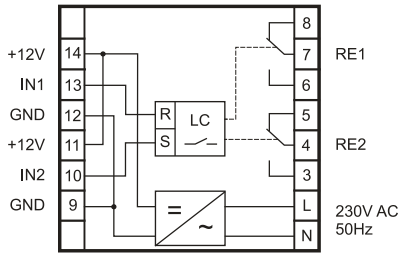
– For **minimum level**, select such sensor, which is open when the liquid level is not present (PO, NO, SO)
– For **maximum level**, select such sensor, which is closed when the liquid level is not present (PC, NC, SC)

Inner block diagrams



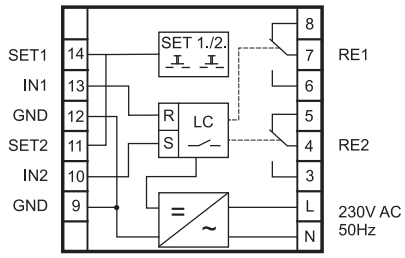
CDSU–522–W

COM	*common conductive probe*
IN1	*measuring conductive probe 1*
IN2	*measuring conductive probe 2*
RE1	*relay 1 contacts*
RE2	*relay 2 contacts*
L,N	*supply voltage input*



DSU–1222–W

+12V	*sensor supply*
IN1	*sensor 1*
IN2	*sensor 2*
GND	*ground*
RE1	*relay 1 contacts*
RE2	*relay 2 contacts*
L,N	*supply voltage input*



SDSU–1222–W

SET1	*setting sensor 1*
SET2	*setting sensor 2*
IN1	*sensor 1*
IN2	*sensor 2*
GND	*ground*
RE1	*relay 1 contacts*
RE2	*relay 2 contacts*
L,N	*supply voltage input*

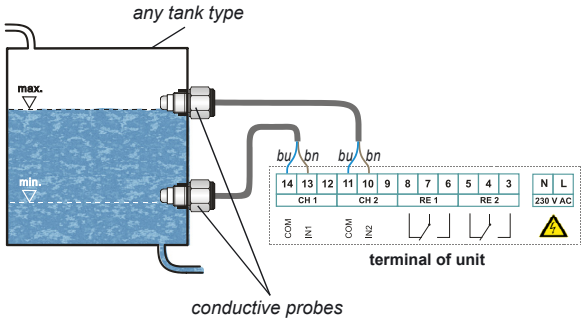
Note: The relays are released in inner block diagrams

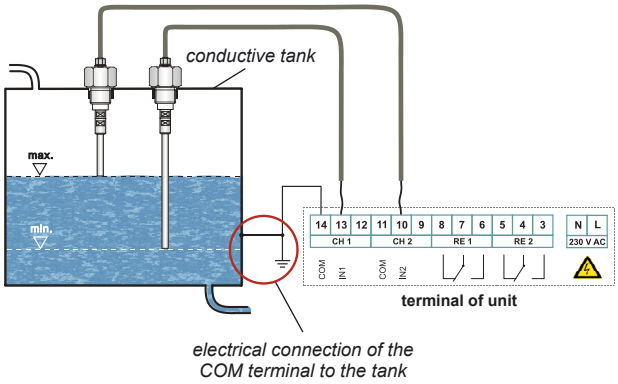
STATUS SIGNALIZATION

LED indicators	*colour*	*function*
"POWER"	green	**Shines** – 230 V AC power is on
"OUT 1"	orange	**Shines** – the output relay RE 1 is closed (terminals 7-6 are closed and 7-8 are open) **Dark** – the output relay RE 1 is open (terminals 7-6 are open and 7-8 are closed)
"OUT 2"	orange	**Shines** – the output relay RE 2 is closed (terminals 4-3 are closed and 4-5 are open) **Dark** –the output relay RE 2 is open (terminals 4-3 are open and 4-5 are closed)

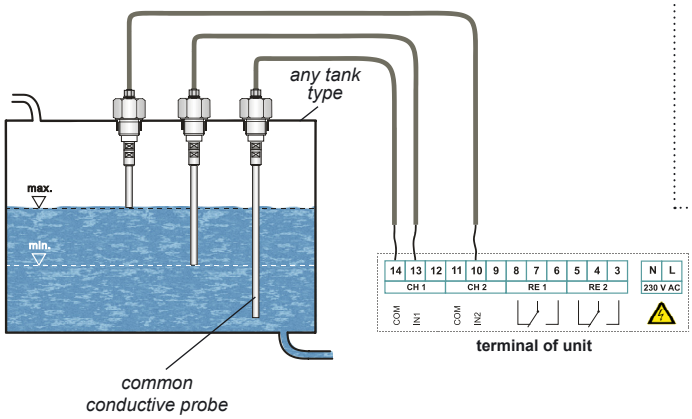
WIRING EXAMPLES

CDSU–522–W unit connection to the conductive probes (Dinel CNP–18)*





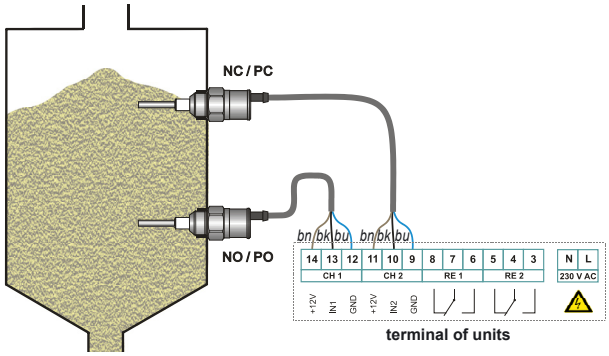
Note: The conductive tank enable the COM terminal to be connected electrically directly to the tank. The common conductive probe is not required



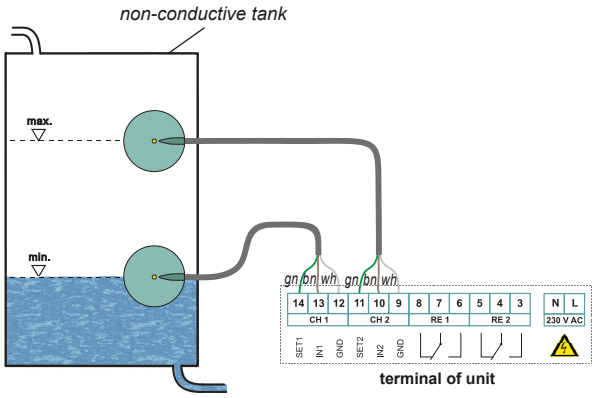
Note: The common conductive probe must be placed as close to the tank bottom as possible.

** The same method can be used for connecting other types of conductive probes and limit sensors to the respective evaluation units.*

DSU–1222–W unit connection to the limit sensors (Dinel DLS–27N)



SDSU–1222–W unit connection to the third wire programmable limit sensors (Dinel FLD–48N "Meduse")



legend:

wh – white
bn – brown
gn – green
bk – black
bu – blue

Safety, protection and compatibility

Evaluation switching units 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
EMC according to EN 55022, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, and EN 6100-6-2.

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