SWI-94
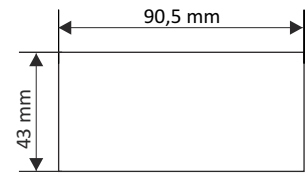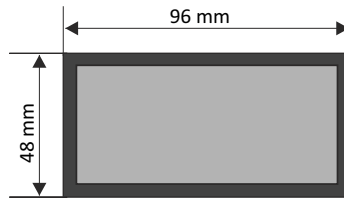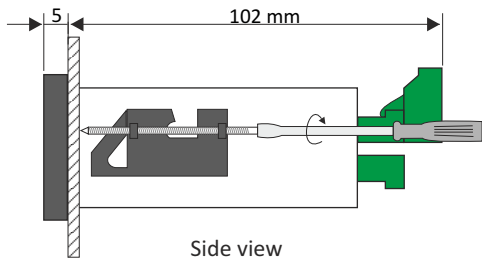
- weight meter to work with load cells in weighing and force measurement systems
- inputs: tensometer load cells 4-wire or 6-wire, 1 x digital
- **outputs: 2 x digital (REL or OC)**, 1 x analogue (active or passive)
- data sheet or dead weight calibration
- high protection class IP 65 (front side)
- RS-485 / Modbus RTU
- signal peak value detection

The **SWI-94** weight meter is designed for operations with load cells (strain gages) in simple industrial applications not requiring legal metrology approval. The meter is equipped with operating pushbuttons which allow tare weight setting, zero setting for empty balance and displaying of gross and net weight values. The readouts of the measured mass are presented on a 6-digit LED display. The REL / OC control outputs can adjust the level of measured signal and are controlled according to one or two threshold values. The meter's software allows performing two calibration methods: data sheet calibration or dead weight calibration. Moreover, the meter can be additionally equipped with analogue outputs, according to the customer selection: active current output, passive isolated current output or active voltage output. The meter can be configured with the local keyboard or via the RS-485 communication port.
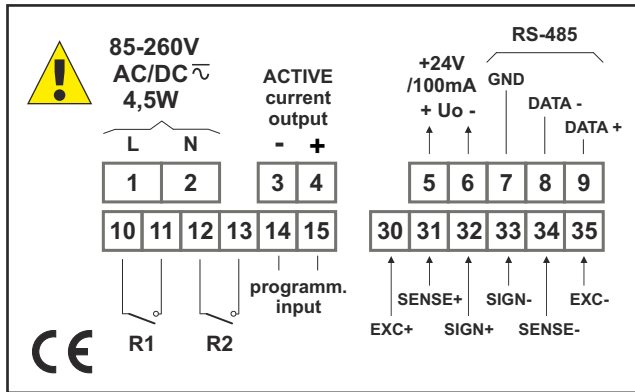
TECHNICAL DATA

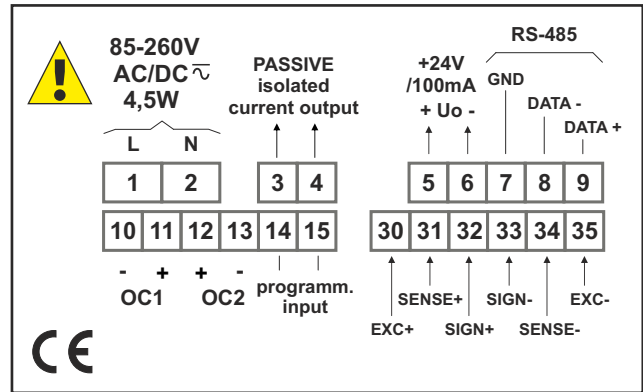|	
Power supply **Power consumption**	19V ÷ 50V DC; 16V ÷ 35V AC or 85 ÷ 260V AC/DC, all separated for 85 ÷ 260V AC/DC and 16V ÷ 35V AC power supply: max. 4,5 VA; for 19V ÷ 50V DC power supply: max. 4,5 W
Display	LED, 6 x 13 mm high, red, with 8-step adjustment of brighness
Displayed values	-99999 ÷ 999999 + decimal point
Measurement input	tensometer load cells 4-wire or 6-wire programmable sensitivity selectable up to 2 mV/V or 4 mV/V load cells power supply: 4,6 V ± 10%, I_{max} ~ 60 mA connections: max. 4 load cells 350Ω (min. resultant impedance of 80Ω)
Programmable digital input	separated, low level 0V ÷ 1V; high level 10V ÷ 30V (about 5.5 mA @ 24V)
Display divisions	max. 10 000 d
Tare range	100% of selected measurement range
Digital outputs	2 x REL I_{max}=1A, U_{max}=30VDC/250VAC (cosø=1) or OC I_{max}=30mA, U_{max}=30VDC, P_{max}=100mW
Analogue output	<u>active current:</u> operating range 0/4-20 mA (max. 0-24 mA), load resistance 700 Ω max., resolution 13 bit <u>passive current:</u> isolated, operating range 4-20 mA (max. 2,8-24 mA), load resistance 600 Ω@24VDC, resolution 13 bit <u>active voltage:</u> operating range 0/1-5V, 0/2-10V (max. 0-11V), load resistance min. 2000 Ω, resolution 13 bit
Power supply output	24V DC +5%, -10% / max. 100 mA, stabilized
Communication interface	RS-485, 8N1 and 8N2, 1200 bit/s ÷ 115200 bit/s, Modbus RTU (not galvanically isolated)
Operating temp.	0°C ÷ +50°C (standard), -20°C ÷ +50°C (option)
Storage temp.	-10°C ÷ +70°C (standard), -20°C ÷ +70°C (depending on option)
Protection class	IP 65 (front side), IP 65 frame as a standard; IP 20 (case and connection clips)
Case	panel mounting; material: NORYL - GFN2S E1
Dimensions	<u>case (WxHxD):</u> 96 x 48 x 100 mm <u>panel cut-out dimensions:</u> 90,5 x 43 mm <u>installation depth:</u> min. 102 mm <u>board thickness:</u> standard 7 mm or other depending on used board thickness brackets (see Accessories)
Weight	250 g max.

SIMEX Ltd., Wielopole 11, 80-556 Gdańsk, Poland, tel. (+48) 58 762-07-77, fax 58 762-07-70, www.simex.pl

SWI-94.1

simex

DIMENSIONS

Side view

Case dimensions

Panel cut-out dimensions

5 | 102 mm
96 mm | 48 mm
90,5 mm | 43 mm

EXAMPLARY PIN ASSIGNMENTS

85-260V AC/DC 4,5W	ACTIVE current output		+24V /100mA + Uo -	RS-485 GND DATA - DATA +
L N	- +		5 6 7 8 9	
1 2	3 4		30 31 32 33 34 35	
10 11 12 13	14 15		SENSE+ SIGN- EXC-	
R1 R2	programm. input		EXC+ SIGN+ SENSE-	

CE

version with 2 x REL and 1 x AO 0/4-20 mA, active

85-260V AC/DC 4,5W	PASSIVE isolated current output		+24V /100mA + Uo -	RS-485 GND DATA - DATA +
L N	- +		5 6 7 8 9	
1 2	3 4		30 31 32 33 34 35	
10 11 12 13	14 15		SENSE+ SIGN- EXC-	
- + + -	programm. input		EXC+ SIGN+ SENSE-	
OC1 OC2				

CE

version with 2 x OC and 1 x AO 4-20 mA, passive

ORDERING

SWI-94-1G3**X**-1-**X**-**XX**1

type of outputs:
3 : 2 x REL + 1 x AO *(0/4-20 mA, active, non-isolated)*
4 : 2 x OC + 1 x AO *(0/4-20 mA, active, non-isolated)*
9 : 2 x REL + 1 x AO *(4-20 mA, passive, isolated)*
A : 2 x OC + 1 x AO *(4-20 mA, passive, isolated)*
B : 2 x REL + 1 x AO *(0/1-5V, 0/2-10V, active, non-isolated)*
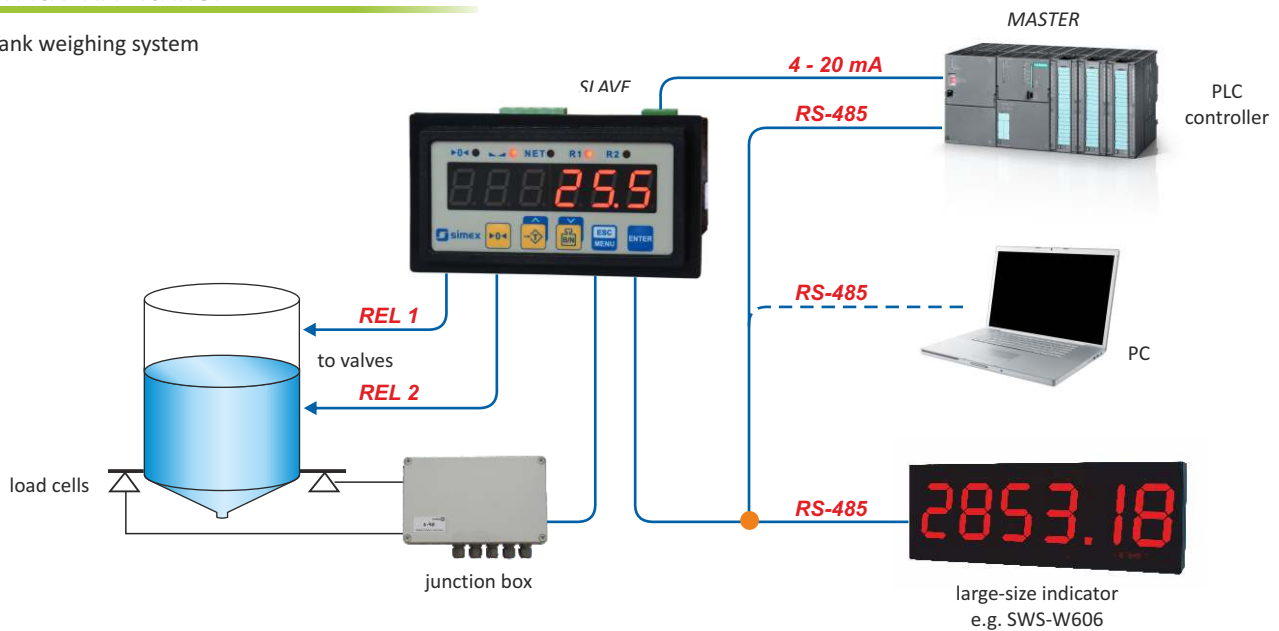**C** : 2 x OC + 1 x AO *(0/1-5V, 0/2-10V, active, non-isolated)*

options:
01 : IP 65 frame (standard)
0P : IP 65 frame + operating temp. -20°C ÷ +50°C
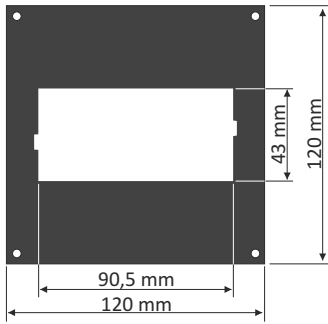
power supply:
3 : 24V AC/DC
4 : 85V - 260V AC/DC

TYPICAL APPLICATION

Tank weighing system

MASTER

SLAVE

4 - 20 mA

RS-485

PLC controller

RS-485

RS-485

PC

REL 1

to valves

REL 2

load cells

junction box

RS-485

large-size indicator
e.g. SWS-W606

SWI-94.2

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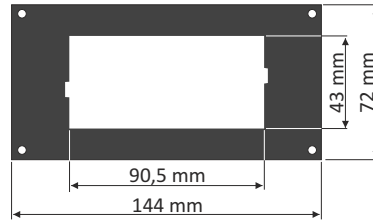## MOUNTING PLATES

SMP-99/94
to mount 96 x 48 mm
size unit in place
of 96 x 96 mm cut-out

SMP-147/94
to mount 96 x 48 mm
size unit in place
of 144 x 72 mm cut-out

BOARD THICKNESS BRACKETS / ADAPTORS

SPH-07
1 ÷ 7 mm board thickness
brackets (2 pcs)
standard included with device

SPH-45
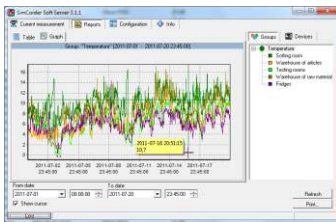1 ÷ 45 mm board thickness
brackets (2 pcs)

SPH-05
1 ÷ 5 mm board thickness
brackets (2 pcs)

SRH-94
brackets for mounting devices
on DIN 35/7.5 or 15 rail (2 pcs)

SOFTWARE

SimCorder Soft is a visualisation application created to facilitate work with advanced networks of the SIMEX devices, for acquisition, visualisation, reporting, archiving, exporting and printing of measurement data from all network devices. You can download measurements from the devices automatically or on demand. There is a possibility of immediate notification about emergency states via SMS or e-mail, which will often allow to quickly resolve an arising problem while avoiding long and expensive stoppages. You can view the measurement data, emergency states and configuration via the internet at every time.

JUNCTION BOX

SP-4 or **SP-6**
Load cell junction box
Junction box allows for quick and easy connection from 2 up to 6 load cells in multisensor systems, such as tank scales. The large enclosure of the junction box lets you put excess cable of the load cells inside the box (the cable length shortening is not recommended).

CONVERTERS

The **SRS-U4** module is designed to connect a USB host to slave devices equipped with RS-485 interface. The PC with special software can be used as a host. The **SRS-U4** unit guarantees full galvanic isolation between USB and RS-485 circuits. The converter can work with any devices equipped with RS-485 interface and contains integrated circuit which supports USB 1.1 and USB 2.0 standards. The main purpose is connection of PC host computer with industrial data acquisition and visualisation systems based on RS-485 interface.
The **SRS-U4** can be also manufactured with DIN mounting adaptor.

SIMEX Ltd., Wielopole 11, 80-556 Gdańsk, Poland, tel. (+48) 58 762-07-77, fax 58 762-07-70, www.simex.pl

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SWI-94.3