

# HRP Weighing Platforms

## SERIES

High Resolution Platforms

## USER MANUAL

IMMU-31-07-07-18-EN



JULY 2018

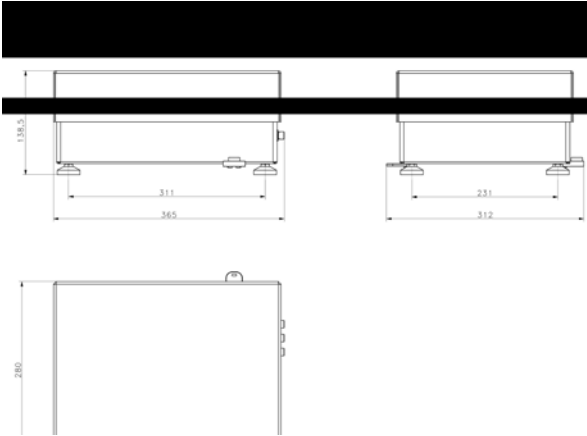
# CONTENTS

1. GENERAL INFORMATION	4
1.1. Dimensions	4
1.2. Connectors Arrangement	6
1.3. Technical Specifications	9
1.4. Intended Use	9
1.5. Good Weighing Practice	10
1.6. Temperature Stabilization Time	11
1.7. Warranty Conditions	12
1.8. Supervision over Metrological Parameters	13
1.9. User Manual Significance	13
1.10. Operator Training	13
1.11. Maintenance	13
2. UNPACKING AND INSTALLATION	15
2.1. Place of Use	15
2.2. Unpacking and Installation	15
2.3. HRP 16, 32 Platform	16
2.4. HRP 62, 120 Platform	17
2.5. HRP 150, 300 Platform	21
2.6. HRP 300.1, 600, 1100 Platform	24
2.7. HRP 2000 Platform	29
3. ADJUSTMENT	34
3.1. Operator Start Mass	35
4. COMMUNICATION PROTOCOL	36
4.1. Communication with Module	36
4.2. Default Communication Parameters	36
4.3. HRP Configuration Using MWMH-Manager	37
4.4. Cooperation with Weighing Indicators	37
4.5. Cooperation with R-LAB Program	38
4.6. Radwag Communication Protocol	38
4.7. Commands Overview	40
4.8. Error Messages	52
4.9. Communication and Power Supply Cables	52
4.10. Platform Power Supply	55
5. TRANSPORT AND STORAGE	56
5.1. Delivery Check	56
5.2. Packaging	56

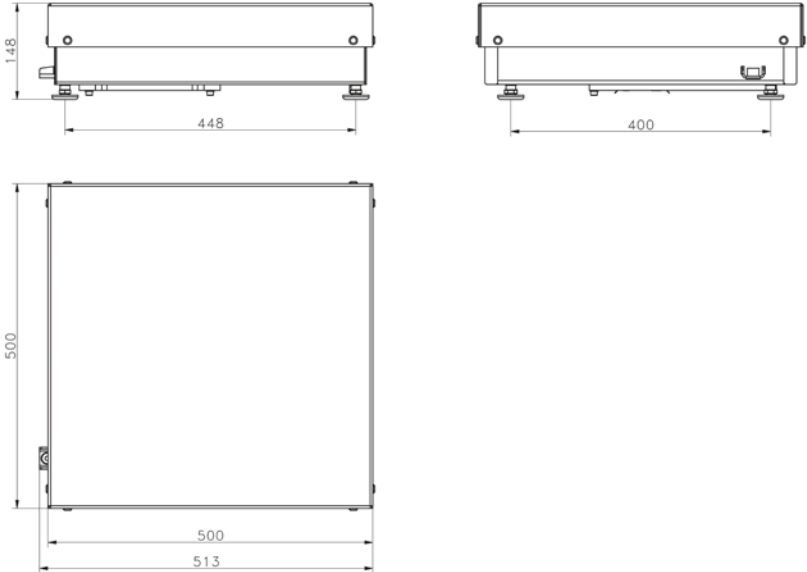
# 1. GENERAL INFORMATION

## 1.1. Dimensions

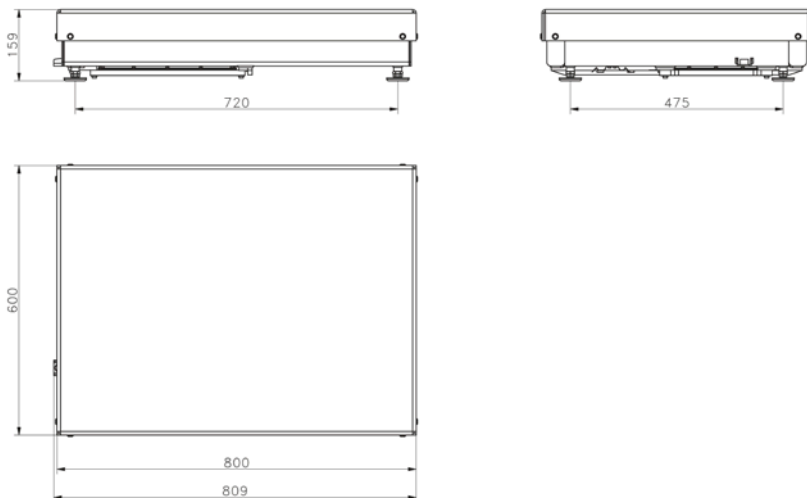
HRP 16, 32



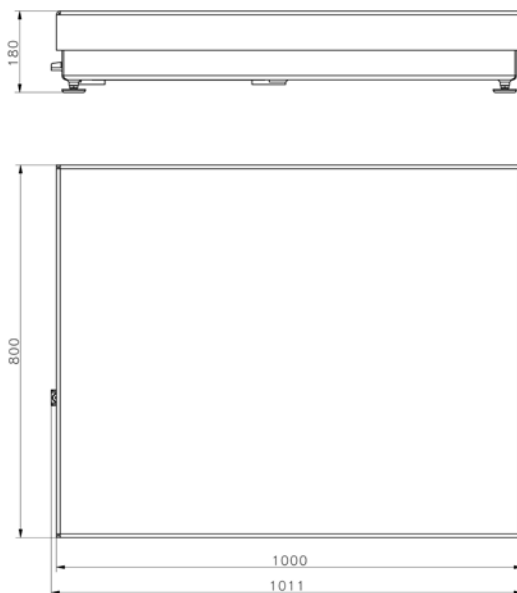
HRP 62, 120



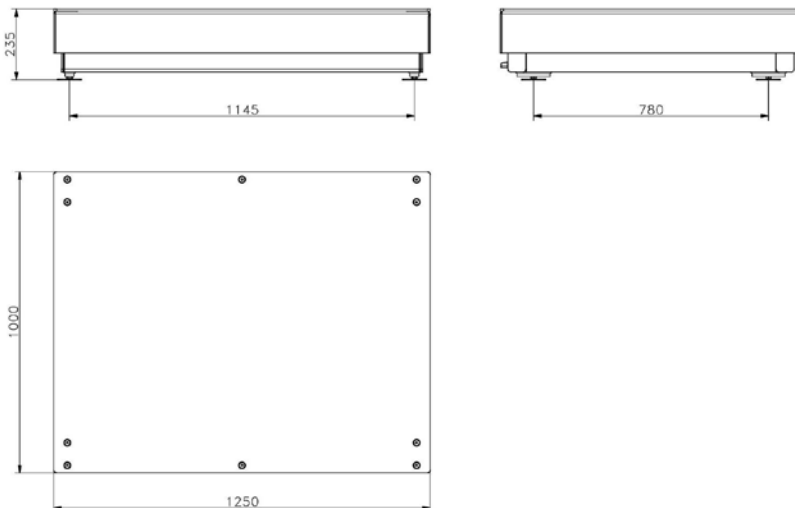
## HRP 150, 300



## HRP 300.1, 600, 1100

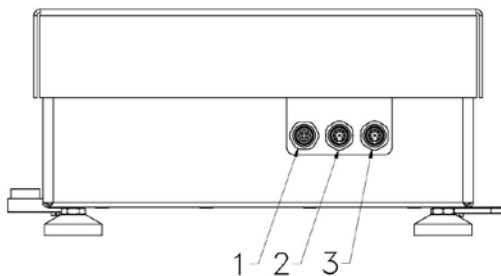


## HRP 2000

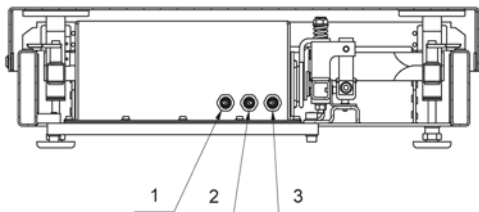


## 1.2. Connectors Arrangement

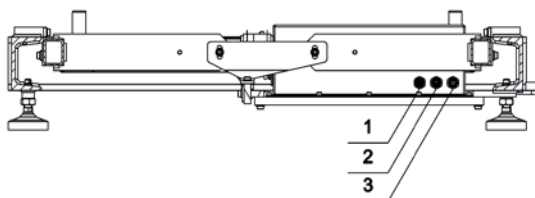
### HRP 16, 32



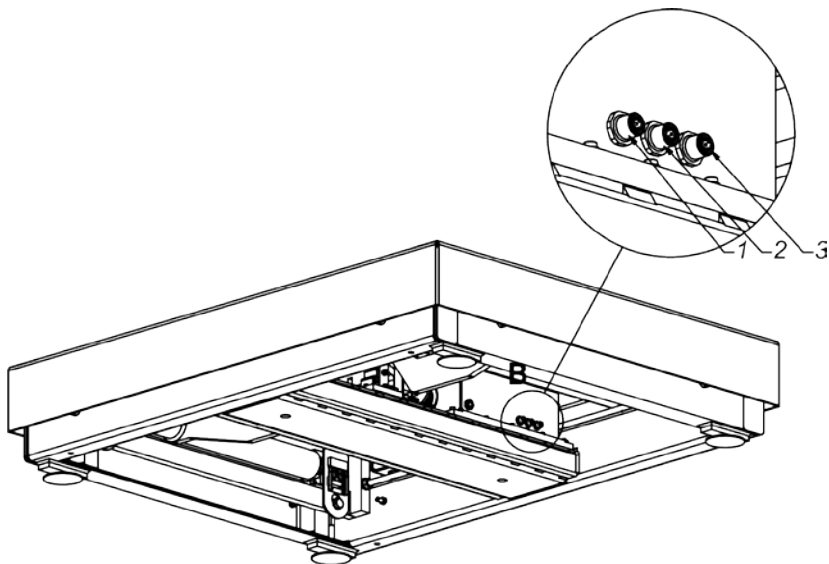
HRP 62, 120



HRP 150, 300, 300.1, 600, 1100



HRP 2000

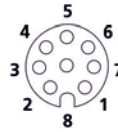


Connectors arrangement for: HY 10.xx. HRP; PUE7.1.xx.HRP

**1**

**2**

**3**



No connector

No connector

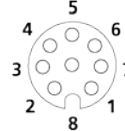
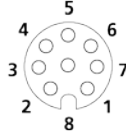
HY10; PUE7.1;  
PC + power supply

Connectors arrangement for: PL.xx HRP with Ethernet and IN/OUT

**1**

**2**

**3**



ETHERNET

IN/OUT  
(optional connector)

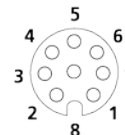
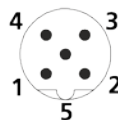
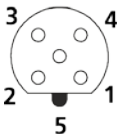
RS232, RS485  
+ power supply

Connectors arrangement for: PL.xx HRP with Profibus

**1**

**2**

**3**



Profibus OUT

Profibus IN

RS 232 + power supply



### 1.3. Technical Specifications

Power supply	12 ÷ 24 V DC
Operating temperature	+10 - +40 °C
Relative humidity	15% ÷ 80%
Ingress protection	IP 66/67 (for cleaning purposes)
Outputs supply voltage	12 ÷ 24 V DC
Max outputs current	100 mA
Control voltage range for outputs	12 ÷ 24 V DC

### 1.4. Intended Use

The series of HRP professional high resolution platforms suits every single branch of industry. HRP series is perfect for applications requiring high accuracy, precision and repeatability of measurement in challenging industrial environment.

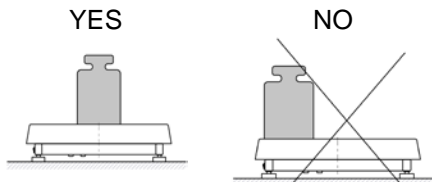
Automatic adjustment performed by means of an internal adjustment weight is a warranty for a remarkably effective operation and repeatability of indications. The automatic adjustment saves time and lets to avoid performing the process manually, making it comfortable and easy.

#### Features:

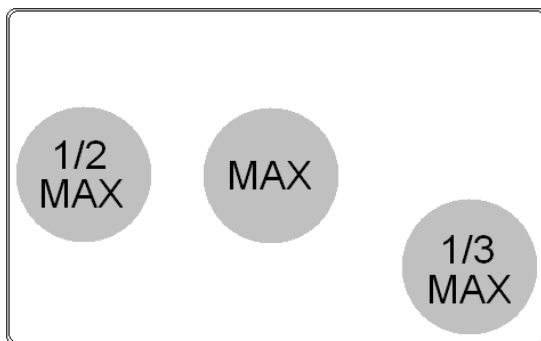
- Brand new design of the electromagnetic mechanism housed in a stainless steel dust-proof and waterproof casing,
- High ingress protection IP67,
- Communication interfaces: RS 232, RS 485, Ethernet, optionally: Profibus and IN/OUT for cooperation with peripheral devices,
- Cooperation with HY 10, PUE 7.1 and PUE 5 indicators,
- Cooperation with MWMH-Manager software.

## 1.5. Good Weighing Practice

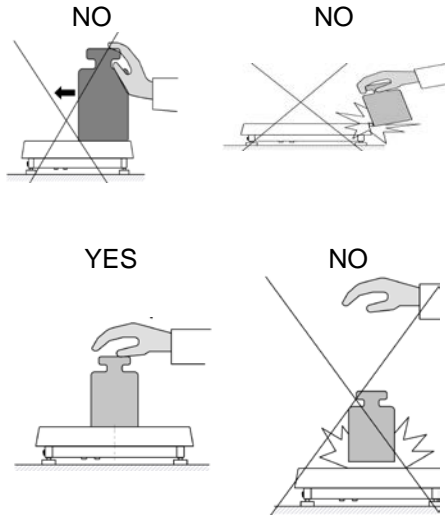
- A. Prior the first use, carefully read this User Manual. Use the platform only as intended;
- B. Place weighed loads in the centre of the weighing pan;



- C. Load the weighing pan with loads of gross weight which does not exceed maximum capacity;
- D. In case of eccentric loading make sure that:
  - a) the weight of loads placed close to one of the pan edges does not exceed  $\frac{1}{2}$  of max capacity,
  - b) the weight of loads placed in the pan corner does not exceed  $\frac{1}{3}$  of max capacity.



- E. Mind not to leave heavy loads on the weighing pan for longer periods of time;
- F. Avoid side shocks;



G. In case of damage, immediately unplug the device from the mains.

H. Platform to be decommissioned, should be decommissioned in accordance with valid legal regulations;

### 1.6. Temperature Stabilization Time

Before start of the measuring processes, it is necessary to wait until the platform reaches thermal stabilisation.

Platforms stored in much lower temperatures than the workroom temperature, before being plugged to the mains (e.g. during winter period), must be subjected to thermal stabilisation. The thermal stabilisation period takes about 8 hours. During the thermal stabilisation, the indications on the screen can change. Potential workroom temperature change shall occur gradually and slowly in the course of the weighing instrument operation.

## 1.7. Warranty Conditions

- A. RADWAG feels obliged to repair or exchange all elements that appear to be faulty by production or by construction.
- B. Defining defects of unclear origin and means of their elimination can only be realized with assistance of manufacturer and user representatives.
- C. RADWAG does not bear any responsibility for damage or losses resulting from unauthorized or inadequate performing of production or service processes.
- D. The warranty does not cover:
  - mechanical damage caused by product exploitation other than intended, damage of thermal and chemical origin, damage caused by lightning, overvoltage in the power network or other random event,
  - damage caused by product exploitation other than intended,
  - mechanical damage, if service claims removing or destroying protective stickers which secure the platform's housing against unauthorized access,
  - damage caused by liquids, water and natural wear,
  - damage caused by inappropriate setting or by electrical wiring failures,
  - damage caused by overloading of the mechanical measuring system,
  - inappropriate cleaning habits.
- E. Loss of warranty takes place if:
  - a repair is carried out outside RADWAG authorized service point,
  - service claims intrusion into mechanical or electronic construction by unauthorized people,
  - the platform does not bear company security stickers.
- F. For detailed warranty conditions read the warranty certificate.

## 1.8. Supervision over Metrological Parameters

Metrological parameters need to be checked in determined time intervals. Inspection frequency is conditioned by ambient conditions in which the module is used, kind of carried out processes and adopted quality management system.

## 1.9. User Manual Significance

Even if you are experienced and have worked with this type of device before it is very important to read the installation manual carefully before switching it on.

## 1.10. Operator Training

The platform should be utilized and supervised only by users who have been trained to operate such type of a weighing instrument.

## 1.11. Maintenance

### **Caution:**

- *Be careful so as not to damage the mechanism.*
- *For maintenance use mild cleanser preventing corrosion.*
- *Avoid directing strong stream of water directly onto weighing module's gasket membrane.*

### Cleaning Stainless Steel Components

Avoid using cleansers containing any corrosive chemicals, e.g. bleach (including chlorine). Do not use cleansers containing abrasive substances. Always remove the dirt using microfiber cloth to avoid damage of protective coating.

In case of a daily maintenance:

- Remove the dirt using cloth dipped in warm water.
- For best results, add a little bit of dishwashing detergent.

### Cleaning Powder-Coated Components

For preliminary cleaning process stage you need running water or wet sponge featuring large holes, this will help you to remove loose, heavy dirt.

Do not use cleansers containing abrasive substances.

Next, using cloth and cleanser-water solution (soap, dishwashing liquid) gently rub the cleaned surface.

Avoid using cleanser without water since it may result with damage of the cleaned surface, please mind that large amount of water mixed with cleanser is a must.

### Cleaning Aluminium Components

While cleaning aluminium components use products acid by nature, e.g. spirit vinegar, lemon. Do not use cleansers containing abrasive substances. Avoid using hard brush, this may cause scratches. It is recommended to use microfibre cloth.

While polishing the surface use circular movements. Use clean, dry cloth to make the surface shine. For best results, add a little bit of dishwashing detergent.

## **2. UNPACKING AND INSTALLATION**

### **2.1. Place of Use**

- \* Make sure that the ambient temperature ranges between +10 °C ÷ +40 °C
- \* Make sure that the relative humidity is not higher than 80%,
- \* Slow temperature change in the course of operation,
- \* Ground the module's base should static electricity affect the weighing result.

### **2.2. Unpacking and Installation**

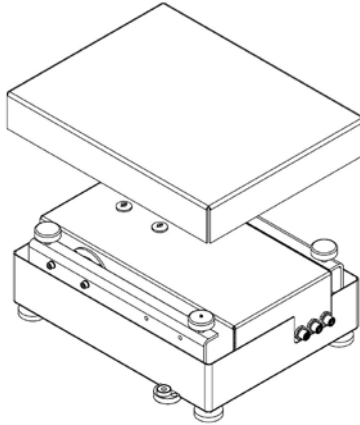
Cut the adhesive tape. Take the device out of the packaging. Open the accessory box, take the device components out of it and install them.

Be particularly careful while unpacking the device and installing its components so as not to cause any damages to the platform mechanism. Do it in accordance with the description below.

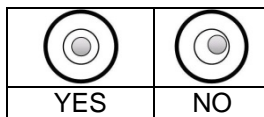
Upon completing mechanical installation, carry out electrical connections. Depending on the preferred communication type, connect communication cables to the appropriate connectors (for connectors description refer to section 1.2 of this user manual). It is recommended to use original communication cables supplied by RADWAG. Nominal voltage of the power supply (specified on the power supply data plate) has to be compatible with the mains nominal voltage.

## 2.3. HRP 16, 32 Platform

1. Take the platform out of the packaging.



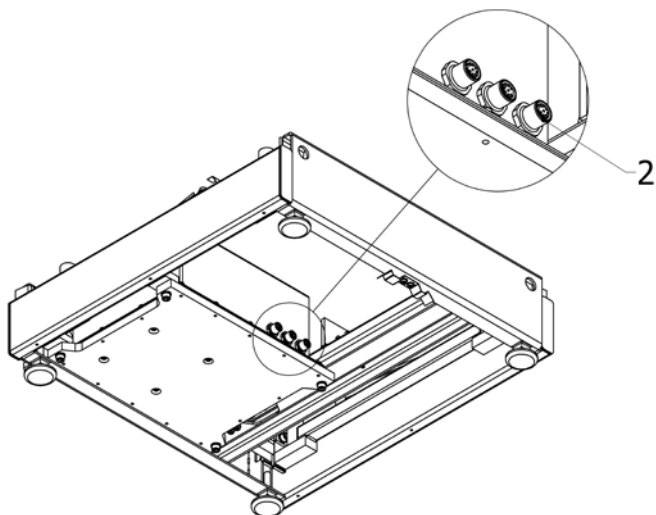
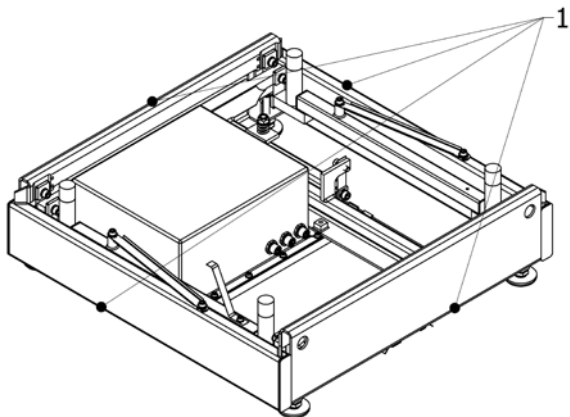
2. Install the weighing pan.
3. Connect the indicator or computer to the weighing module.  
For detailed description of connectors refer to section 1.2. of this user manual.
4. Place the platform at the place of use on a flat and even surface. Keep it far away from any sources of heat.
5. Level the device, to do it turn its feet left/right. Keep turning the feet until the air bubble takes central position.





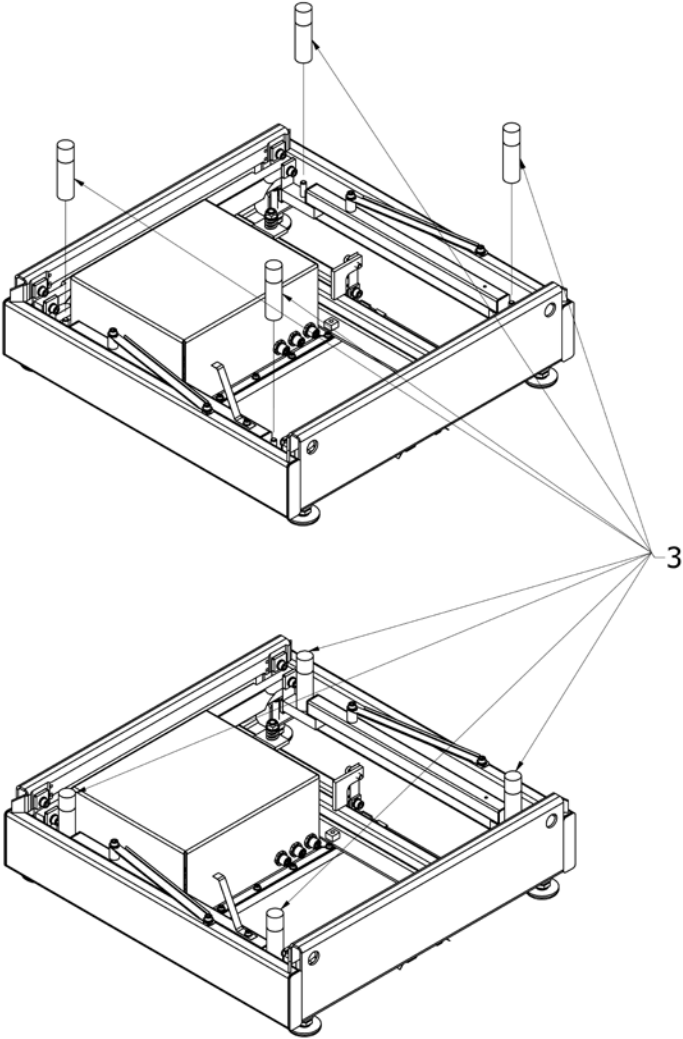
## 2.4. HRP 62, 120 Platform

1. Take the platform out of the packaging, make sure that you touch 'OUTER FRAME' only.

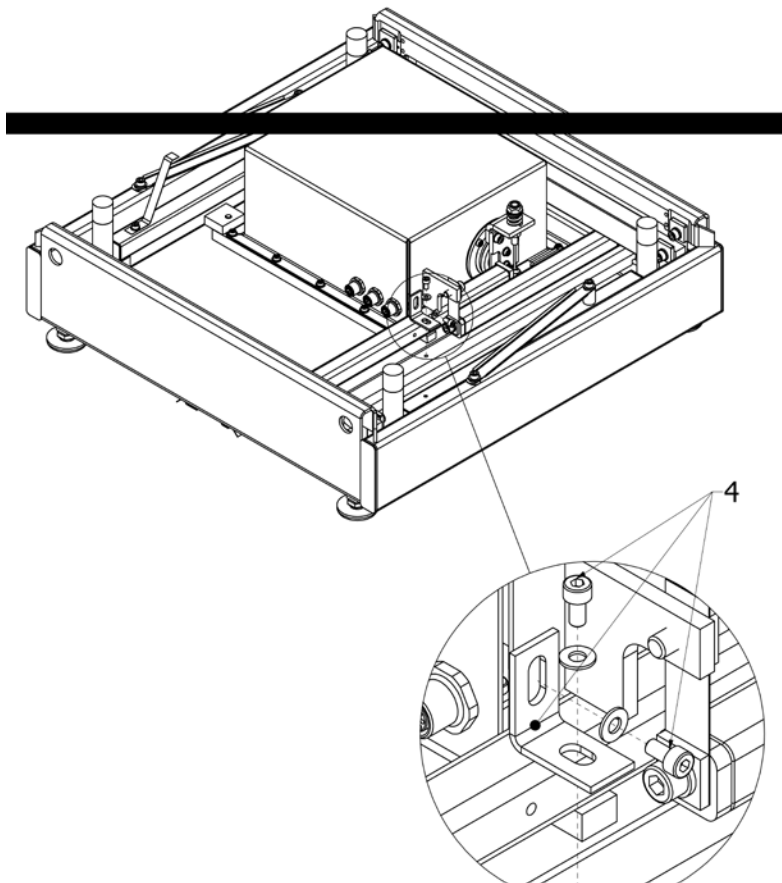


2. Connect the indicator or computer to the weighing module. For detailed description of connectors refer to section 1.2. of this user manual.

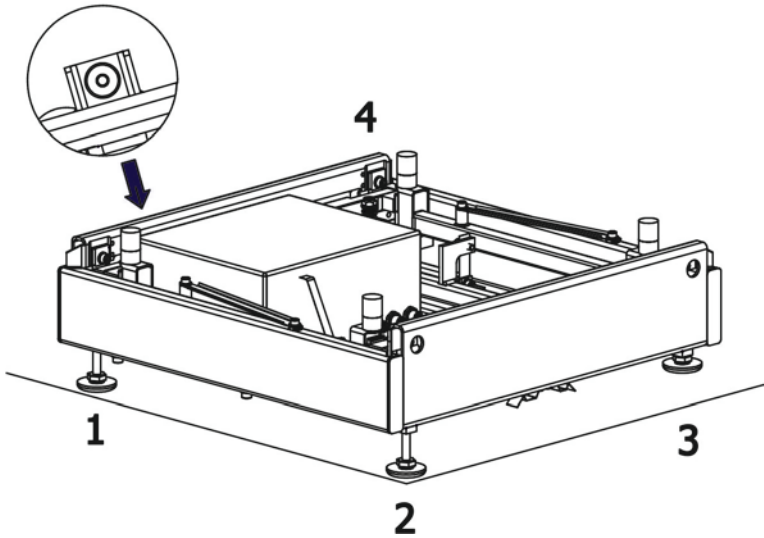
3. Install weighing pan receivers, fit them into lever seats.



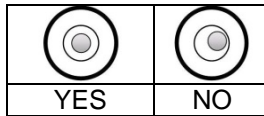
4. Disassemble transport lock by undoing screws and removing fixing washers.



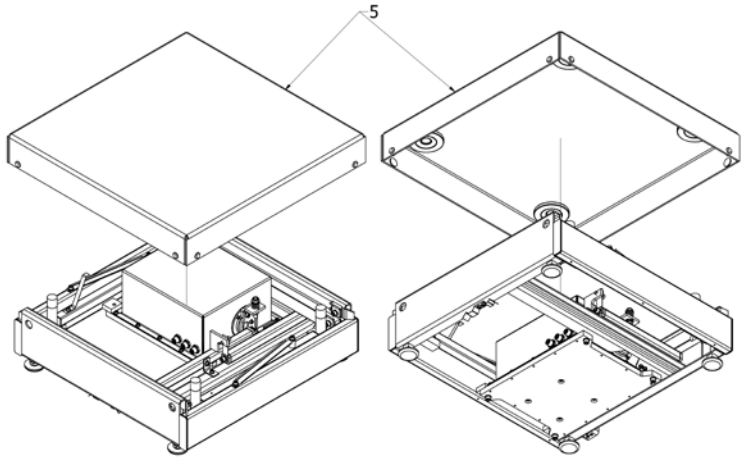
5. Place the device on a flat and even surface. Keep it far away from any sources of heat (do not assemble the weighing pan).



6. Screw foot no. 3 so that feet no. 1, 2, 4 form a plain surface on which platform frame is based.
7. Level the platform using feet no. 1, 2 and 4 until the air bubble takes central position.



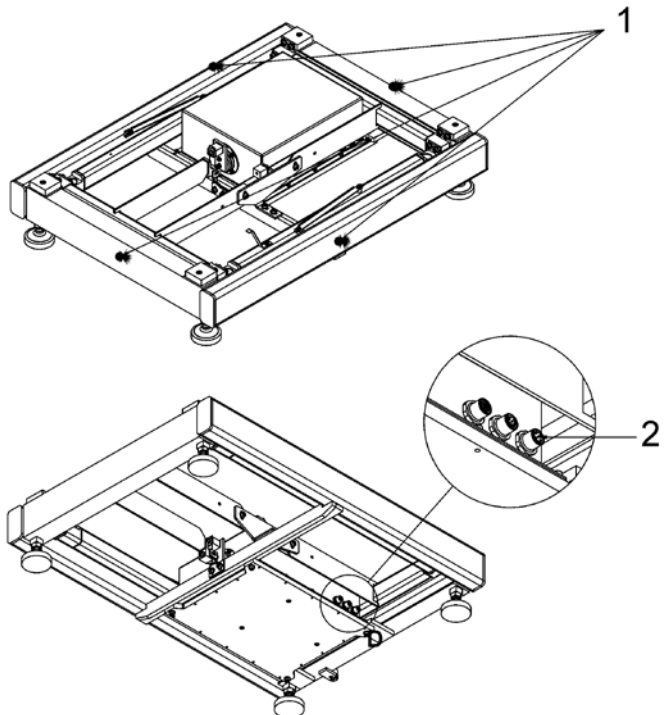
8. Unscrew foot no. 3 so that it rests on the ground. Do not exert stress on platform frame. Do not change the level of the platform (the air bubble has to remain in central position).
9. Install the weighing pan (5).



10. Connect the scale to the power supply.

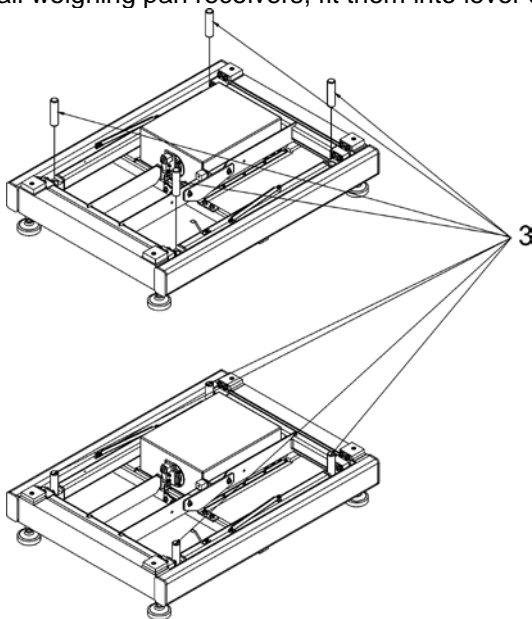
## 2.5. HRP 150, 300 Platform

1. Take the platform out of the packaging, make sure that you touch 'OUTER FRAME' only.

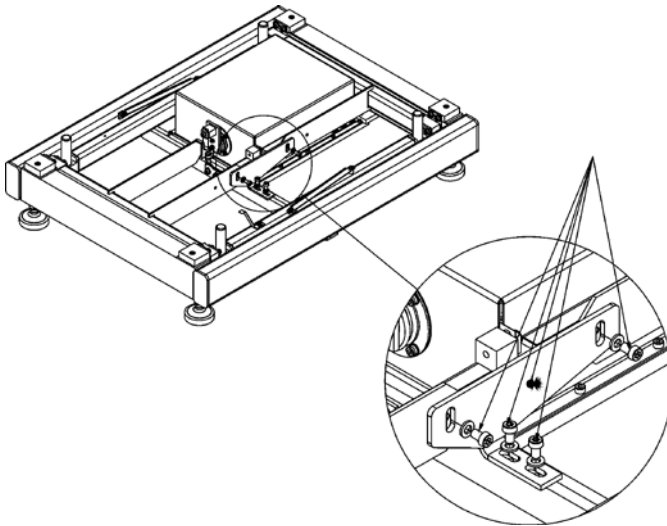


2. Connect the indicator or computer to the weighing module.  
For detailed description of connectors refer to section 1.2. of this user manual.

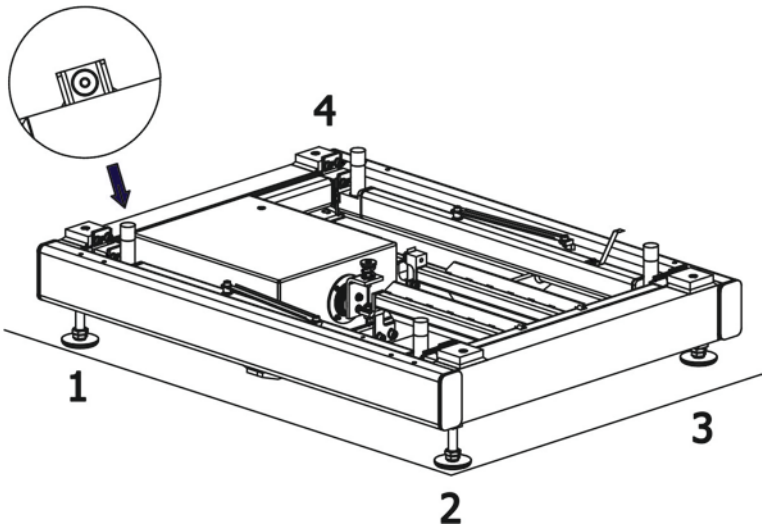
3. Install weighing pan receivers, fit them into lever seats.



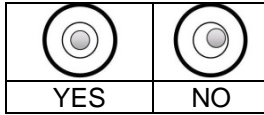
4. Disassemble transport lock by undoing screws and removing fixing washers.



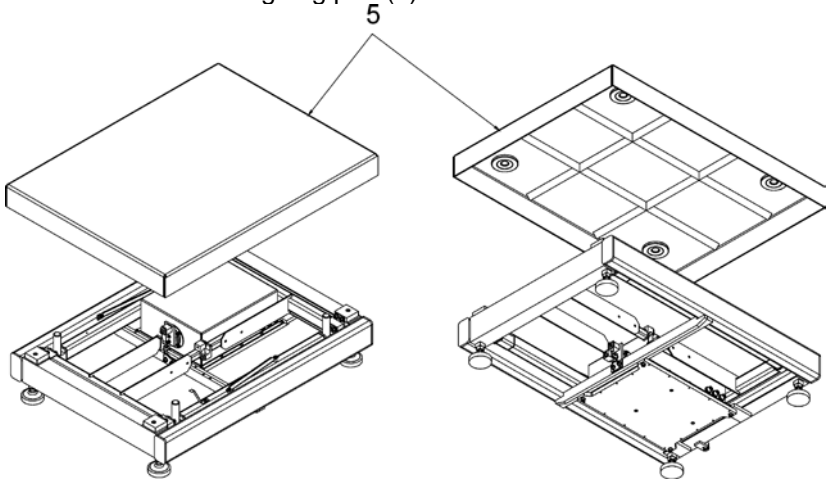
5. Place the device on a flat and even surface. Keep it far away from any sources of heat (do not assemble the weighing pan).



6. Screw foot no. 3 so that feet no. 1, 2, 4 form a plain surface on which platform frame is based.
7. Level the platform using feet no. 1, 2 and 4 until the air bubble takes central position.



8. Unscrew foot no. 3 so that it rests on the ground. Do not exert stress on platform frame. Do not change the level of the platform (the air bubble has to remain in central position).
9. Install the weighing pan (5).

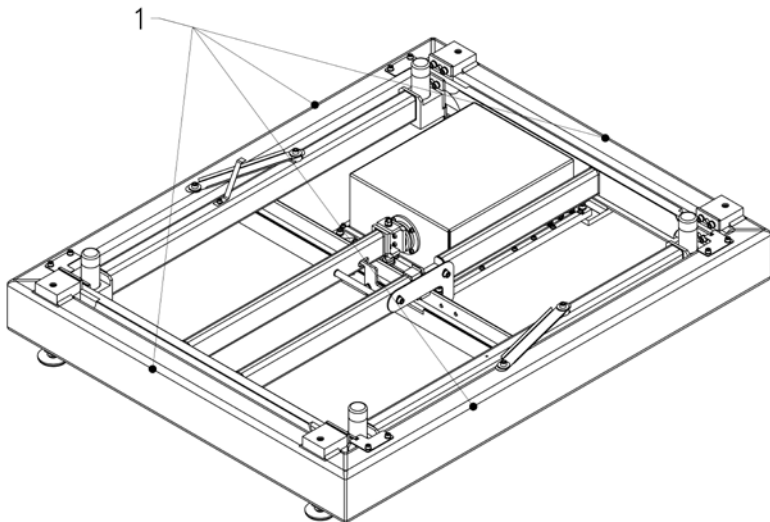


10. Connect the scale to the power supply.

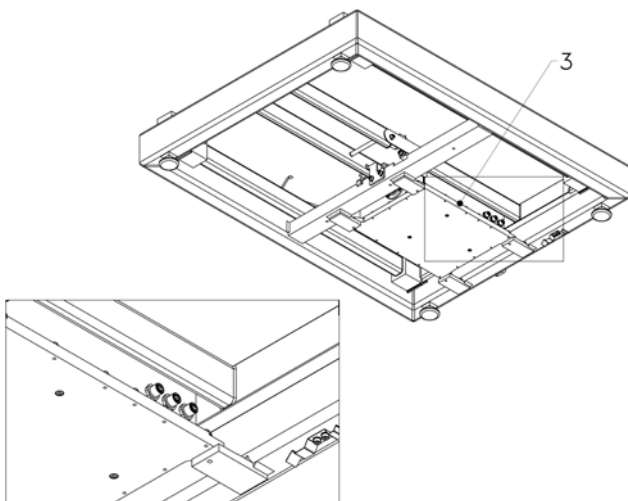
## 2.6. HRP 300.1, 600, 1100 Platform

1. Take the platform out of the packaging, make sure that you touch 'OUTER FRAME' only.

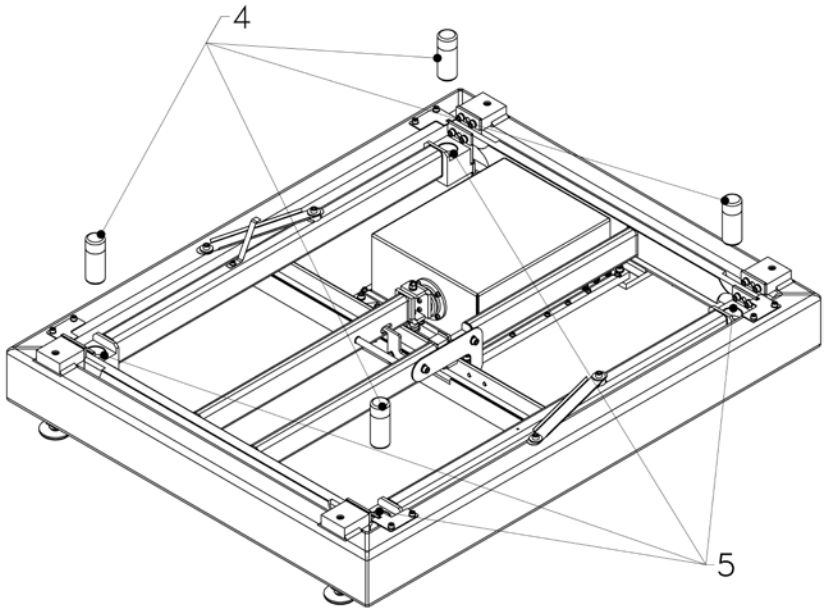




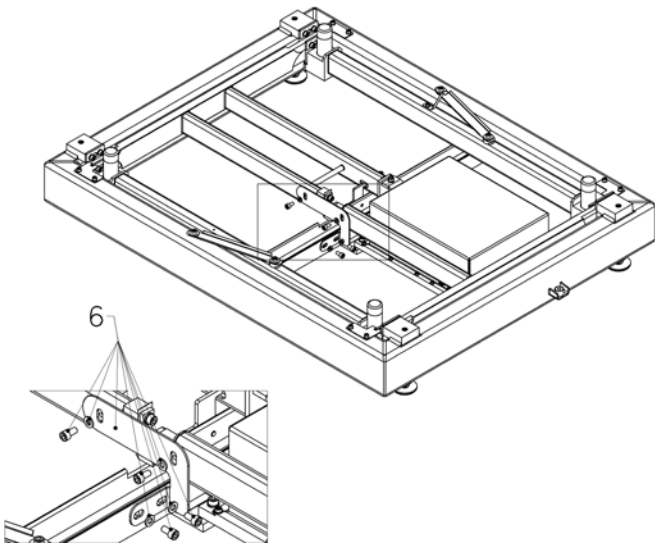
2. Connect the indicator or computer to the weighing module.  
For detailed description of connectors refer to section 1.2. of this user manual.



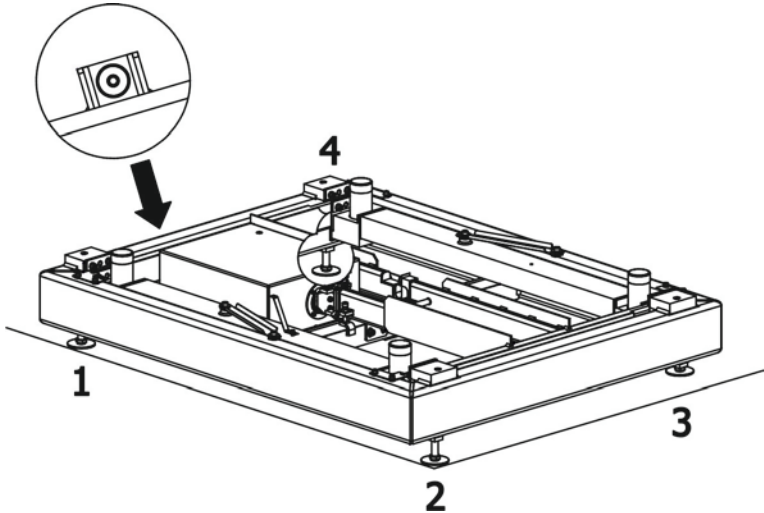
3. Install weighing pan receivers (4), fit them into lever seats(5).



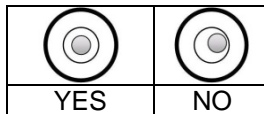
4. Disassemble transport lock by undoing screws and removing fixing washers (6).



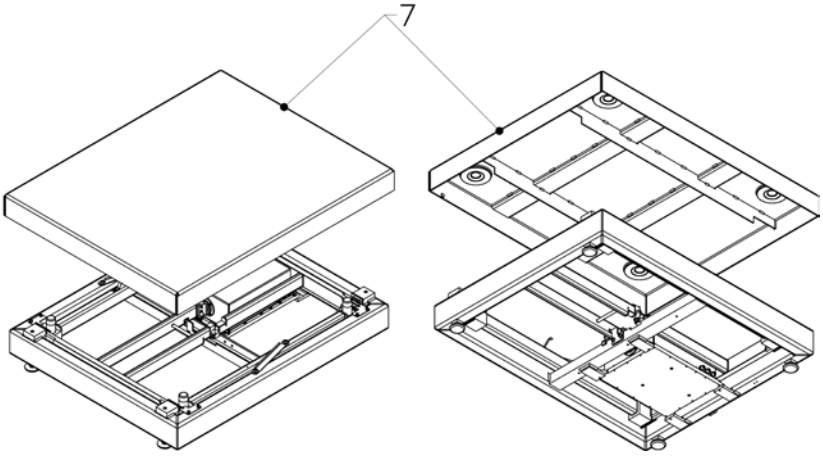
5. Place the device on a flat and even surface. Keep it far away from any sources of heat (do not assemble the weighing pan).



6. Screw foot no. 3 so that feet no. 1, 2, 4 form a plain surface on which platform frame is based.
7. Level the platform using feet no. 1, 2 and 4 until the air bubble takes central position.



8. Unscrew foot no. 3 so that it rests on the ground. Do not exert stress on platform frame. Do not change the level of the platform (the air bubble has to remain in central position).
9. Install the weighing pan (7).



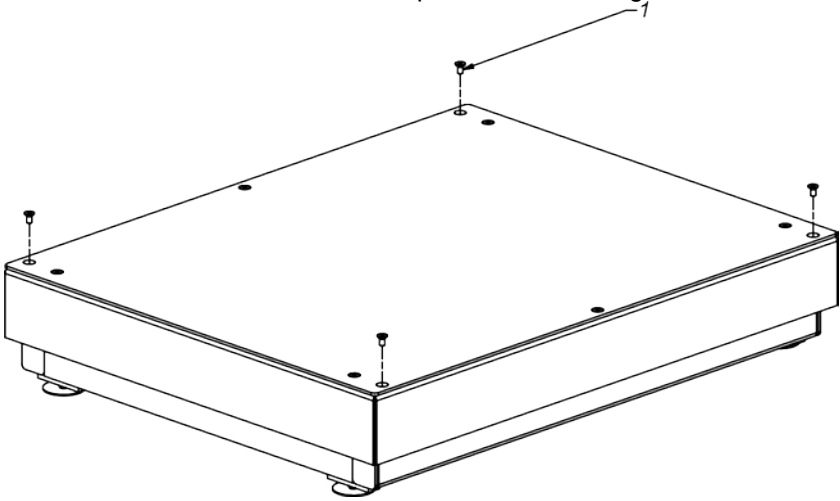
10. Connect the scale to the power supply.

## 2.7. HRP 2000 Platform

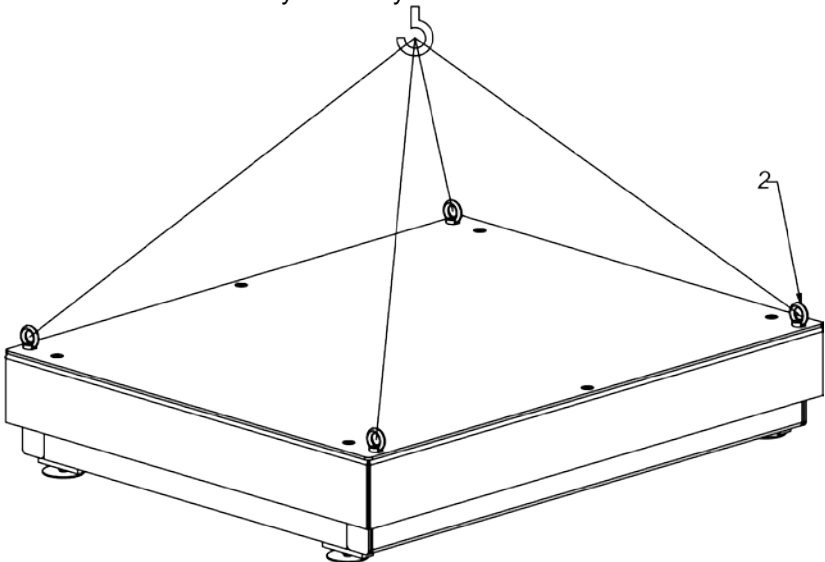
1. Take the platform out of the packaging using hoist.

Procedure:

- Unscrew 4 screws presented in the figure below.

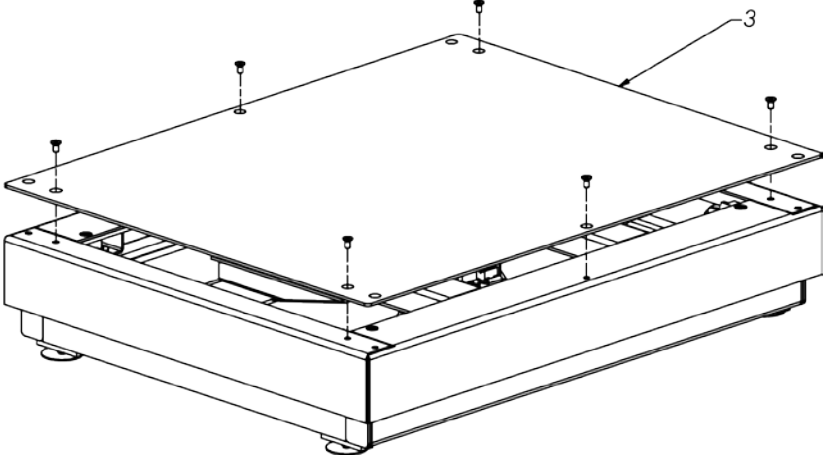


- Screw 4 screws with eyelets. Using cords and hoist take the platform out of the packaging and place in the place of use on a flat and even surface. Keep it far away from any sources of heat.

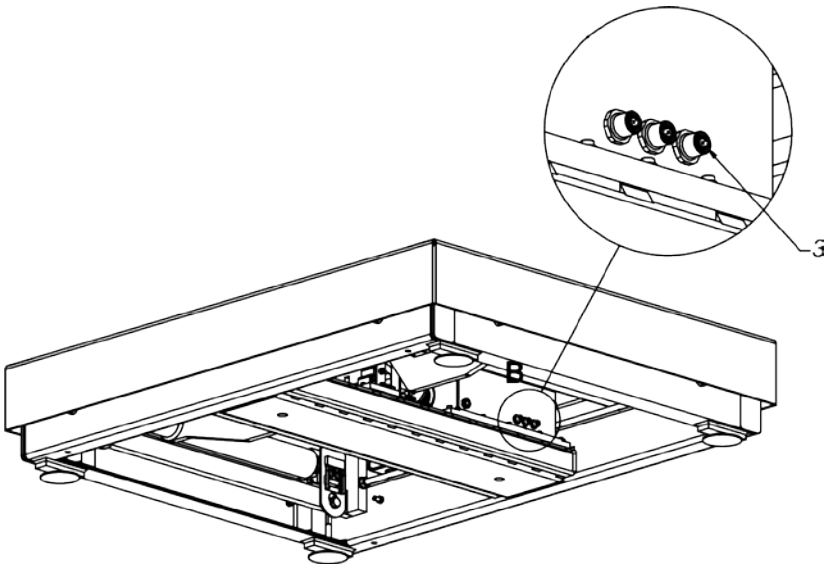


- Upon locating the platform in the place of use, unscrew the screws with eyelets.

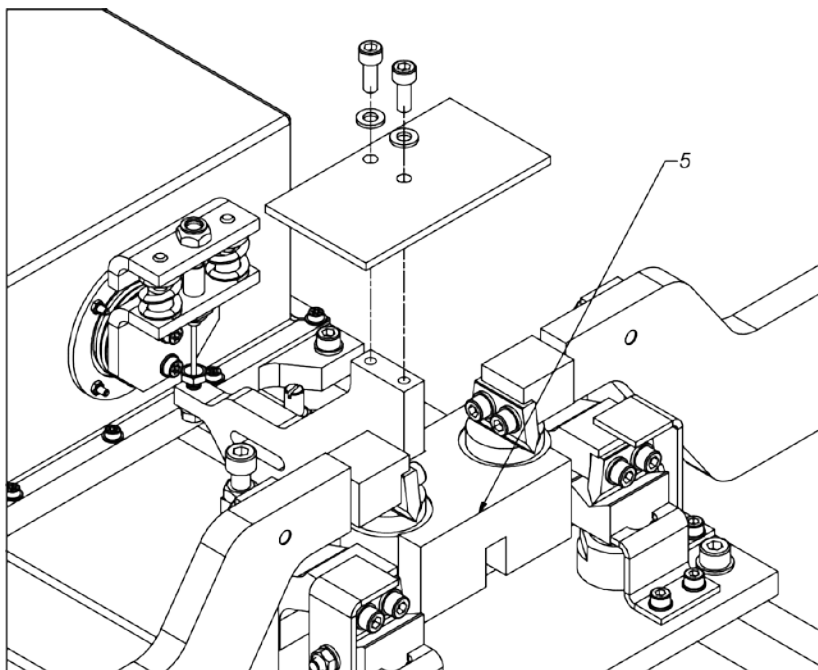
2. Disassemble the top of the weighing platform (3).



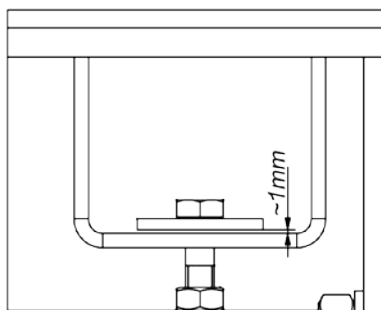
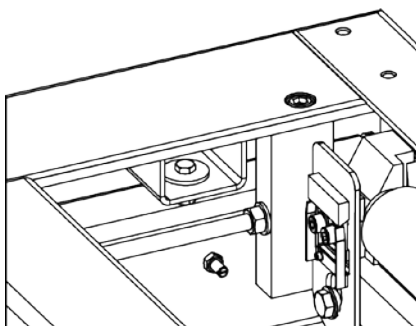
3. Connect the indicator or computer to the weighing module. For detailed description of connectors refer to section 1.2. of this user manual.



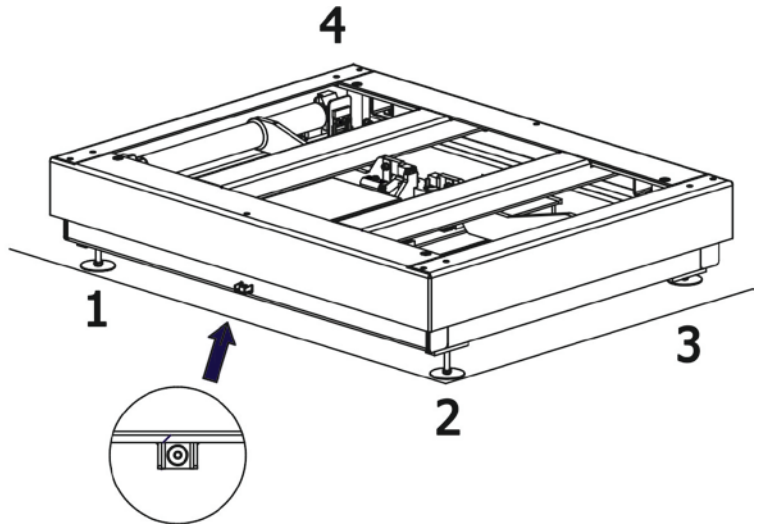
4. Disassemble transport locks (5).



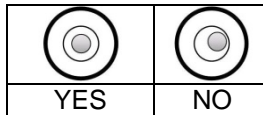
5. Set the bumpers. Loosen the nuts in all four corners. Unscrew the screws and set 1 mm gap. Tighten the nuts.



6. Place the device on a flat and even surface. Keep it far away from any sources of heat (do not assemble the weighing pan).

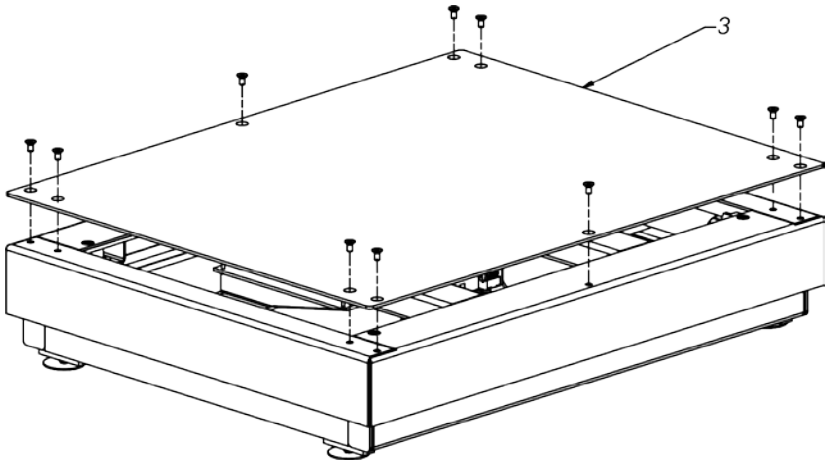


7. Screw foot no. 3 so that feet no. 1, 2, 4 form a plain surface on which platform frame is based.
8. Level the platform using feet no. 1, 2 and 4 until the air bubble takes central position.



9. Unscrew foot no. 3 so that it rests on the ground. Do not exert stress on platform frame. Do not change the level of the platform (the air bubble has to remain in central position).
10. Install the weighing pan (3).





11. Connect the scale to the power supply.

### 3. ADJUSTMENT

In order to ensure the highest weighing accuracy, it is recommended to periodically correct indications by entering a corrective factor to module memory, the said factor must be referred to a mass standard. Adjustment has to be carried out before weighing process, after a long break between measurements series or when ambient temperature changes rapidly. The adjustment has to be carried out for unloaded weighing pan and stable working conditions (no drafts or vibrations). An error message is displayed when one of the above conditions is not fulfilled. In such case, unload the weighing pan or eliminate other distorting factors and repeat the adjustment. Do not use the module until the adjustment is carried out. Follow the displayed messages. HRP platforms are equipped with an internal weight, the adjustment can be carried out using either this weight or an external one.

There are three types of adjustment process:

- adjustment using external weight
- automatic internal adjustment initiated by the balance (at a specified time interval and in the case of an ambient temperature change)
- internal adjustment initiated by an operator

The adjustment procedure using external weight can be carried out using:

- MWMH-Manager - program for platforms and modules operation
- weighing indicator connected to the module

Internal adjustment can be initiated using:

- MWMH-Manager - program for platforms and modules operation
- weighing indicator connected to the module
- **IC** command of the communication protocol
- command of the Profibus protocol
- command of the Modbus protocol

#### **CAUTION**

*Verified HRP platforms cannot be adjusted using external weight.*

### 3.1. Operator Start Mass

You can determine zero point of HRP platforms. Option can be set using:

- MWMH-Manager - program for platforms and modules operation
- weighing indicator connected to the module

#### **CAUTION**

*Determination of start mass carried out by an operator is not available for verified platforms.*

## 4. COMMUNICATION PROTOCOL

### 4.1. Communication with Module

HRP Platforms can communicate with RADWAG-manufactured weighing indicators, computer applications and industrial controllers via RS232, Ethernet and, optionally, via RS485 and Profibus connectors.

Communication protocols of the modules:

- Radwag communication protocol
- Modbus RTU (RS485)
- Modbus TCP (Ethernet)
- Profibus

Modbus - Profibus communication has been described in a separate user manual.

In addition, the platform can be equipped with digital inputs and outputs which enable taring, zeroing, dosing start and stop, threshold signalling and dosing process controlling.

#### **Caution:**

*HRP platforms with Profibus are not equipped with digital IN/OUT, RS485 and Ethernet.*

### 4.2. Default Communication Parameters

- RS 232

Baud rate	57600
Data bits	8
Parity	none
Stop bits	1
  
- RS 485

Baud rate	57600
Data bits	8
Parity	none
Stop bits	1
Module address	1
  
- TCP/IP

IP address	192.168.0.2
Subnet mask	255.255.255.0
Default gateway	192.158.0.1
Port	4001

### 4.3. HRP Configuration Using MWMH-Manager

„**MWMH-Manager**” is a computer software operating in MS Windows environment, intended for operation and configuration of parameters of HRP platforms and MWSH, MWMH, MWLH magnetolectric weighing modules. The program facilitates the following: mass readout, taring, zeroing, setting filters, adjustment, setting communication parameters, simulation of digital inputs and outputs operation.

„**MWMH-Manager**” software enables communication with peripheral devices using RS232, RS485 and Ethernet. **MWMH-Manager** software has been described in a separate user manual.

### 4.4. Cooperation with Weighing Indicators

HRP platforms are compatible with the following indicators: HY 10, PUE 5 and PUE 7.1. Communication between the devices is established via RS232, RS485 and Ethernet connectors. Combination of the HRP platform and indicator results in high resolution weighing instrument with applications intended for industry. Weighing indicator enables full access to module parameters and allows carrying out adjustment procedure.



**PUE HY10 Indicator**



**PUE 5 Indicator**



**PUE 7.1 Indicator**

## 4.5. Cooperation with R-LAB Program

R-LAB program is a computer application that enables mass value readout carried out on connected modules, measurements collection, taring and zeroing.

The program enables connection with the HRP platform via RS232 and Ethernet connectors.

## 4.6. Radwag Communication Protocol

General information

- A character-based communication protocol (platform-indicator, computer) is designed for establishing communication between a RADWAG weighing instrument and a peripheral device via RS-232C, RS 484 or Ethernet interface.
- The protocol consists of commands sent from a peripheral device to the platform and responses from the weighing device.
- Responses are sent from the platform each time a command is received.
- Commands, forming the communication protocol, enable obtaining data on platform status and facilitate influencing weighing instrument operation, e.g.: acquiring measurement results from the platform, zeroing, etc.

<b>Command</b>	<b>Command overview</b>
<b>Z</b>	Zeroing
<b>T</b>	Taring
<b>OT</b>	Give tare value
<b>UT</b>	Set tare
<b>S</b>	Send stable measurement result in basic measuring unit
<b>SI</b>	Immediately send measurement result in basic measuring unit
<b>SU</b>	Send stable measurement result in current measuring unit

<b>SUI</b>	Immediately send measurement result in current measuring unit
<b>C1</b>	Switch on continuous transmission in basic measuring unit
<b>C0</b>	Switch off continuous transmission in basic measuring unit
<b>CU1</b>	Switch on continuous transmission in current measuring unit
<b>CU0</b>	Switch off continuous transmission in current measuring unit
<b>DH</b>	Set min checkweighing threshold
<b>UH</b>	Set max checkweighing threshold
<b>ODH</b>	Give value of min checkweighing threshold
<b>OUH</b>	Give value of max checkweighing threshold
<b>NB</b>	Give balance serial number
<b>UI</b>	Give accessible units
<b>US</b>	Set unit
<b>UG</b>	Give current unit
<b>BN</b>	Give balance type
<b>FS</b>	Give max capacity
<b>RV</b>	Give program version
<b>A</b>	Set AUTOZERO
<b>PC</b>	Send all implemented commands
<b>FIS</b>	Set filter
<b>GIN</b>	Give status of inputs settings
<b>GOUT</b>	Give status of outputs settings
<b>SOUT</b>	Set outputs
<b>IC</b>	Internal adjustment
<b>PS</b>	Send module settings

**Caution:** Each command must end with CR LF characters.

## Response format

<b>XX_A CR LF</b>	command understood and in progress
<b>XX_D CR LF</b>	command carried out (appears only after the XX_A command)
<b>XX_I CR LF</b>	command understood but not accessible at this moment
<b>XX _ ^ CR LF</b>	command understood but max threshold is exceeded
<b>XX _ v CR LF</b>	command understood but min threshold is exceeded
<b>XX _ OK CR LF</b>	command carried out
<b>ES_ CR LF</b>	command not recognised
<b>XX _ E CR LF</b>	time limit exceeded while waiting for stable measurement result (time limit is a characteristic module parameter)

**XX** - name of a sent command  
**\_** - space

## 4.7. Commands Overview

### Zeroing

Format: **Z CR LF**

Response options:

**Z\_A CR LF** - command understood and in progress  
**Z\_D CR LF** - command carried out  
**Z\_A CR LF** - command understood and in progress  
**Z\_^ CR LF** - command understood but zeroing range is exceeded  
**Z\_A CR LF** - command understood and in progress  
**Z\_E CR LF** - time limit exceeded while waiting for stable measurement result  
**Z\_I CR LF** - command understood but not accessible at this moment

### Taring

Format: **T CR LF**



Response options:

- T\_A CR LF - command understood and in progress
- T\_D CR LF - command carried out
- T\_A CR LF - command understood and in progress
- T\_v CR LF - command understood but taring range is exceeded
- T\_A CR LF - command understood and in progress
- T\_E CR LF - time limit exceeded while waiting for stable measurement result
- T\_I CR LF - command understood but not accessible at this moment

### Give tare value

Format: **OT CR LF**

Response: **OT\_TARE CR LF** - command carried out

Response format:

1	2	3	4-12	13	14	15	16	17	18	19
O	T	space	tare	space	unit		space	CR	LF	

**Tare** - 9 characters, right justification

**unit** - 3 characters, left justification

**Caution:** Tare value is always given in adjustment unit.

### Set tare

Format: **UT\_TARE CR LF**, where **TARE** - tare value.

Response options:

- UT\_OK CR LF - command carried out
- UT\_I CR LF - command understood but not accessible at this moment
- ES CR LF - command not recognised (tare format incorrect)

**Caution:** Use dot in tare format as decimal point.

## Send stable measurement result in basic measuring unit

Format: **S CR LF**

Response options:

- S\_A CR LF - command understood and in progress
- S\_E CR LF - time limit exceeded while waiting for stable measurement result
- S\_I CR LF - command understood but not accessible at this moment
- MASS FRAME - command carried out, immediate response: mass value in basic measuring unit

Response format:

1	2-3	4	5	6	7-15	16	17	18	19	20	21
S	space	stability marker	space	character	mass	space	unit		CR	LF	

**Example:**

**S CR LF** - command sent from a computer

**S \_ A CR LF** - command understood and in progress

**S \_ \_ \_ \_ - \_ \_ \_ \_ \_ 8 . 5 \_ g \_ \_ CR LF** - command carried out  
 response: mass value in basic measuring unit  
 - command carried out, immediate response: mass value in basic measuring unit

where: \_ - space

## Immediately send measurement result in basic measuring unit

Format: **SI CR LF**

Response options:

- SI\_I CR LF - command understood but not accessible at this moment
- MASS FRAME - command carried out, immediate response: mass value in basic measuring unit

Response format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability marker	space	character	mass	space	unit			CR	LF

**Example:**

**S I CR LF**

- command sent from a computer

**S I \_ ? \_ \_ \_ \_ \_ 1 8 . 5 \_ k g \_ CR LF**

- command carried out, immediate response: mass value in basic measuring unit

where: \_ - space

### Send stable measurement result in current measuring unit

Format: **SU CR LF**

Response options:

**SU\_A CR LF** - command understood and in progress

**SU\_E CR LF** - time limit exceeded while waiting for stable measurement result

**SU\_I CR LF** - command understood but not accessible at this moment

**MASS FRAME** - command carried out, immediate response: mass value in basic measuring unit

Response format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	space	stability marker	space	stability	mass	space	unit			CR	LF

**Example:**

**S U CR LF** - command sent from a computer

**S U \_ A CR LF** - command understood and in progress

**S U \_ \_ \_ - \_ \_ 1 7 2 . 1 3 5 \_ N \_ \_ CR LF** - command carried out, immediate response: mass value in current measuring unit.

where: \_ - space

### Immediately send measurement result in current measuring unit

Format: **SUI CR LF**

Response options:

SUI CR LF - command understood but not accessible at this moment

MASS FRAME - immediate response: mass value in basic measuring unit

Response format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability marker	space	stability	mass	space	unit			CR	LF

**Example:**

**SUI CR LF** - command sent from a computer

**SUI? \_ - \_ \_ \_ 5 8 . 2 3 7 \_ k g \_ CR LF** - command carried out, immediate response: mass value in basic measuring unit

where: \_ - space

**Switch on continuous transmission in basic measuring unit**

Format: **C1 CR LF**

Response options:

C1\_I CR LF - command understood but not accessible at this moment

C1\_A CR LF - command understood and in progress

MASS FRAME - command carried out, immediate response: mass value in basic measuring unit

Response format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability marker	space	character	mass	space	unit			CR	LF

**Switch off continuous transmission in basic measuring unit**

Format: **C0 CR LF**

Response options:

C0\_I CR LF - command understood but not accessible at this moment

C0\_A CR LF - command understood and carried out

### Switch on continuous transmission in current measuring unit

Format: **CU1 CR LF**

Response options:

CU1\_I CR LF - command understood but not accessible at this moment

CU1\_A CR LF - command understood and in progress

MASS FRAME - response: mass value in current measuring unit

Response format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability marker	space	character	mass	space	unit			CR	LF

### Switch off continuous transmission in current measuring unit

Format: **CU0 CR LF**

Response options:

CU0\_I CR LF - command understood but not accessible at this moment

CU0\_A CR LF - command understood and carried out

### Set min checkweighing threshold

Format: **DH\_XXXXX CR LF**, where: \_ - space, **XXXXX** - mass format

Response options:

DH\_OK CR LF - command carried out

ES CR LF - command not recognised (mass format incorrect)

### Set max checkweighing threshold

Format: **UH\_XXXXX CR LF**, where: \_ - space, **XXXXX** - mass format

Response options:

UH\_OK CR LF - command carried out

ES CR LF - command not recognised (mass format incorrect)

### Give value of min checkweighing threshold

Format: **ODH CR LF**

Response: **DH\_MASA CR LF** - command carried out

Response format:

1	2	3	4-12	13	14	15	16	17	18	19
D	H	space	mass	space	unit			space	CR	LF

**Mass** - 9 characters, right justification

**Unit** - 3 characters, left justification

### Give value of max checkweighing threshold

Format: **OUH CR LF**

Response: **UH\_MASA CR LF** - command carried out

Response format:

1	2	3	4-12	13	14	15	16	17	18	19
U	H	space	mass	space	unit			space	CR	LF

**Mass** - 9 characters, right justification

**Unit** - 3 characters, left justification

### Give scale serial number

Format: **NB CR LF**

Response options:

<b>NB_A_”Serial No.” CR LF</b>	- command understood, response: serial number.
<b>NB_I CR LF</b>	- command understood but not accessible at this moment.

**”Serial No.”** – serial number of the device, Inserted in between inverted commas.

**Example:**

**NB CR LF** – command sent from a computer.

**NB\_A\_”123456” CR LF** – scale serial number - 123456.

**Give accessible units**

Format: **UI CR LF**

Response options:

<b>UI_”x<sub>1</sub>,x<sub>2</sub>, ... x<sub>n</sub>”_OK&lt;CR&gt;&lt;LF&gt;</b>	- command carried out, response: accessible units.
<b>UI_I &lt;CR&gt;&lt;LF&gt;</b>	- command understood but not accessible at this moment.

**x** - unit symbol, separated by means of commas.

**Example:**

**UI CR LF** - give available units.

**UI\_”kg,N,lb,u1,u2”\_OK CR LF** - response: available units.

**Set current unit**


Format: **US\_x CR LF**

Response options:

<b>US_x_OK CR LF</b>	- command carried out, response: set unit.
<b>US_E CR LF</b>	- error in-course of command execution, no parameter or incorrect format.
<b>US_I CR LF</b>	- command understood but not accessible at this moment.

**x** - parameter, units symbols: g, kg, N, lb, oz, ct, u1, u2, next.

***Caution:***

*If **x=next** the command swaps to another available unit on the list (it simulates  key pressing).*

**Example:**

**US\_kg CR LF** - set „kg” unit.

**US\_kg\_OK CR LF** - „kg” set as a current unit.

**Give current unit**

Format: **UG CR LF**

Response options:

<b>UG_x_OK&lt;CR&gt;&lt;LF&gt;</b>	- command carried out, response: set unit.
<b>UG_I &lt;CR&gt;&lt;LF&gt;</b>	- command understood but not accessible at this moment.

**x** - parameter, unit symbol.

**Example:**

**UG CR LF** - give current unit.

**UG\_kg\_OK CR LF** – currently set unit is „kg”.

**Give module type**

Format: **BN CR LF**

Response options:

<b>BN_A_”x” CR LF</b>	- command understood, response: weighing device type.
<b>BN_I CR LF</b>	- command understood but not accessible at this moment.

**x** - weighing device type (inserted in between inverted commas).

**Example:**

**BN CR LF** - give weighing device type.

**BN\_A\_”C32” CR LF** – weighing device type: „C32”.

**Give max capacity**

Format: **FS CR LF**

Response options:

<b>FS_A_”x” CR LF</b>	- command understood, response: max capacity.
<b>FS_I CR LF</b>	- command understood but not accessible at this moment.

**x** – Max capacity value (in between inverted commas).



**Example:**

**FS CR LF** - give Max capacity.

**FS\_A\_”3.000” CR LF** – Max capacity: „3.000”.

**Give program version**

Format: **RV CR LF**

Response options:

<b>RV_A_”x” CR LF</b>	- command understood, response: program version.
<b>RV_I CR LF</b>	- command understood but not accessible at this moment.

**x** – program version (in between inverted commas).

**Example:**

**RV CR LF** - give program version.

**RV\_A\_”1.0.0” CR LF** – response program version „1.0.0”.

**Set autozero**

Format: **A\_n CR LF**

Response options:

<b>A_OK CR LF</b>	- command carried out.
<b>A_E CR LF</b>	- error in-course of command execution, no parameter or incorrect format.
<b>A_I CR LF</b>	- command understood but not accessible at this moment.

**n** - parameter, decimal value determining autozero settings:

0 – autozero off.

1 – autozero on.

**Example:**

**A\_1 CR LF** - turn autozero function on.

**A\_OK CR LF** – autozero function is on.

**Send all implemented commands**

Format: **PC CR LF**

Response:

**PC\_A\_"Z,T,S,SI,SU,SUI..."** - command carried out, all implemented commands have been sent.

### Set filter

Format: **FIS\_n <CR><LF>**

Response options:

FIS\_OK <CR><LF> - command carried out  
FIS\_E <CR><LF> - error in-course of command execution, no parameter or incorrect format  
FIS\_I <CR><LF> - command understood but not accessible at this moment

**n** - parameter, decimal value determining filter number

n → 1 – very fast  
2 – fast  
3 – average  
4 – slow  
5 – very slow

#### Caution:

The numbering is assigned to a particular filter name and it is identical for all balance types.

The command changes settings for a current working mode if, for a particular balance type, filter settings are assigned to the working mode.

Example:

Command: FIS\_3<CR><LF> - set average filter

Response: FIS\_OK<CR><LF> - average filter set

### Give status of inputs settings

Format: **GIN CR LF**

Response: **GIN\_XXXXX CR LF** - where: **XXXXX**- status of inputs settings starting from input 5 and ending with input 1 0-input not set 1-input set

Response format:

1	2	3	4	5-9	10	11
G	I	N	space	inputs status	CR	LF

#### Inputs status

-5 characters signalling inputs status: character No. 5 input 5 ...character No. 9

## Give status of outputs settings

Format: **GOUT CR LF**

Response: **GOUT\_XXXX CR LF** - where **XXXX**-status of outputs settings starting from output 4 and ending with output 1 0-output not set  
1-output set

Response format:

1	2	3	4	5	6-9	10	11
G	O	U	T	space	outputs status	CR	LF

**Inputs status**

-4 characters signalling outputs  
status: character No. 6 output 4  
...character No. 9 input 1

## Set outputs

Format: **SOUT\_XXXX CR LF**, where: \_ - space, **XXXX** – outputs status setting

active-1 or not active-0 starting from output No.4 to output No. 1.

Response options:

SOUT\_OK CR LF

- command carried out

ES CR LF

- command not recognised (incorrect  
outputs mask format )

## Internal adjustment

Format: **IC CR LF**

Response options:

IC\_A CR LF

- command understood and in progress

IC\_D CR LF

- adjustment completed

IC\_A CR LF

- command understood and in progress

IC\_E CR LF

- time limit exceeded while waiting for stable  
measurement result

IC\_I CR LF

- command understood but not accessible at this  
moment

## Send module settings

Format: **PS <CR><LF>**

Response options:

Example:

Command:

PS <CR><LF>

- send module settings

Response: PS\_A<CR><LF>  
 ... - scale settings  
 PS\_D<CR><LF>

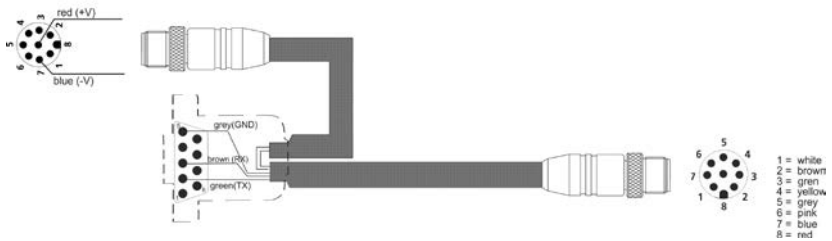
### 4.8. Error Messages

- Err2- Value beyond zero range
- Err3- Value beyond tare range
- Err8- Zeroing/taring operation time exceeded
- NULL- Zero value from converter
- FULL- Measuring range (Max. capacity) exceeded
- LH- Start mass error

### 4.9. Communication and Power Supply Cables

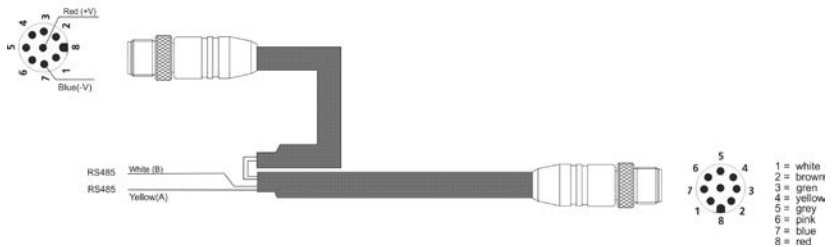
#### HRP-computer RS232 cable

PT0348



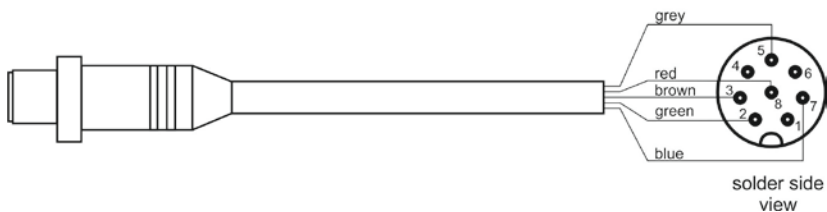
#### RS485 HRP cable

PT0375



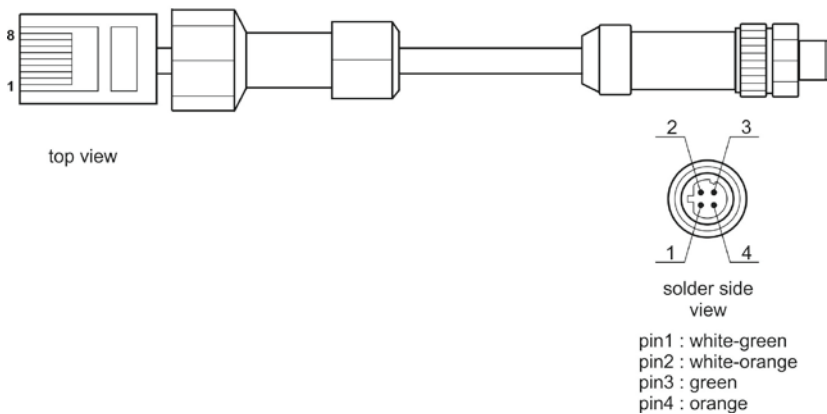
RS232 HRP-HY10,PUE 5 cable + power supply

**PT0347**

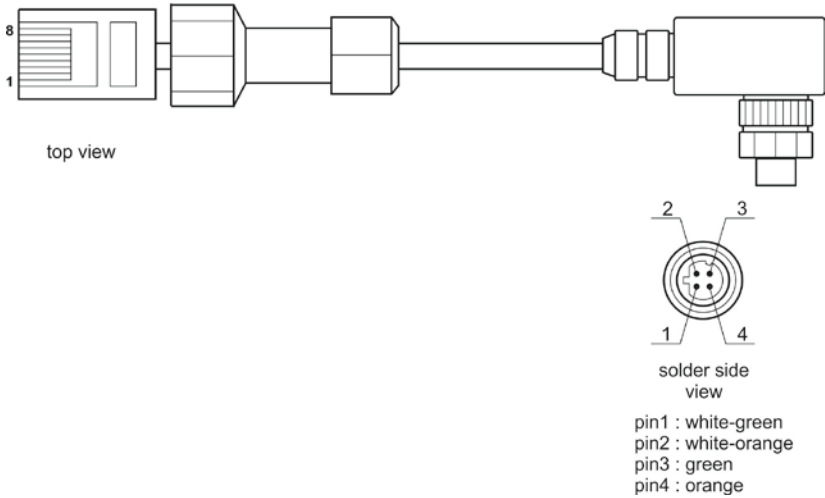


Ethernet HRP-HY10,PUE 5 cables

**PT0302**

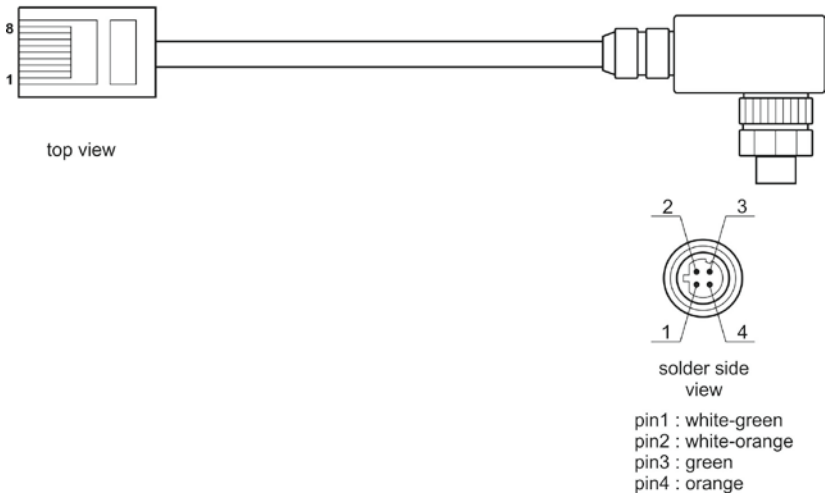


## PT0303



Ethernet HRP- Ethernet Switch, Pue 7.1 cable

## P0198



HRP IN/OUT cable



IN/OUT - HRP, MWSH, MWLH cable

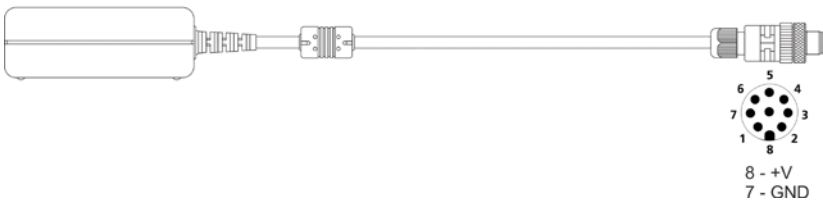
**Caution:**

Colours of wires for cable of M12 standard. The figure presents exemplary cable type.

**4.10. Platform Power Supply**

To supply HRP platform use SYS-1544-2415-T3-HRP power supply that is included in the set with the module. In case of communication via PT0348 or PT0375 cables, the power supply has to be plugged to the connector that terminates the cable. In case of communication via Ethernet or Profibus, the power supply has to be plugged directly to the connector No. 3 .

SYS-1544-2415-T3-HRP



## **5. TRANSPORT AND STORAGE**

### **5.1. Delivery Check**

Upon delivery it is necessary to check the package and the device, make sure that your package bears no signs of damage.

### **5.2. Packaging**

Keep all package elements should your device be transported in the future.

Remember that only original packaging can be used for shipping purposes. Prior packing, uncouple any cables, remove any separable components (weighing pan, shields, inserts). The device components shall be packed into an original packaging, thus being protected against potential damage during transportation.







**RADWAG BALANCES AND SCALES**  
ADVANCED WEIGHING TECHNOLOGIES

