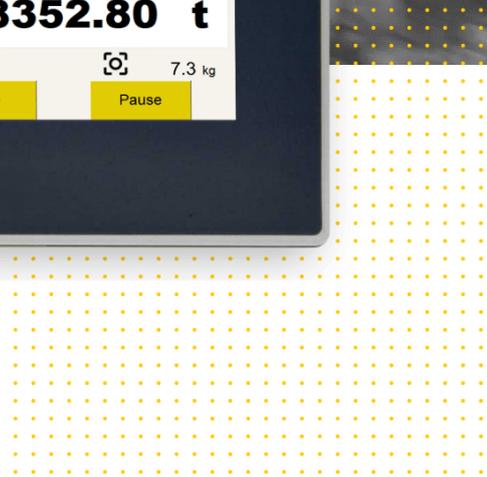
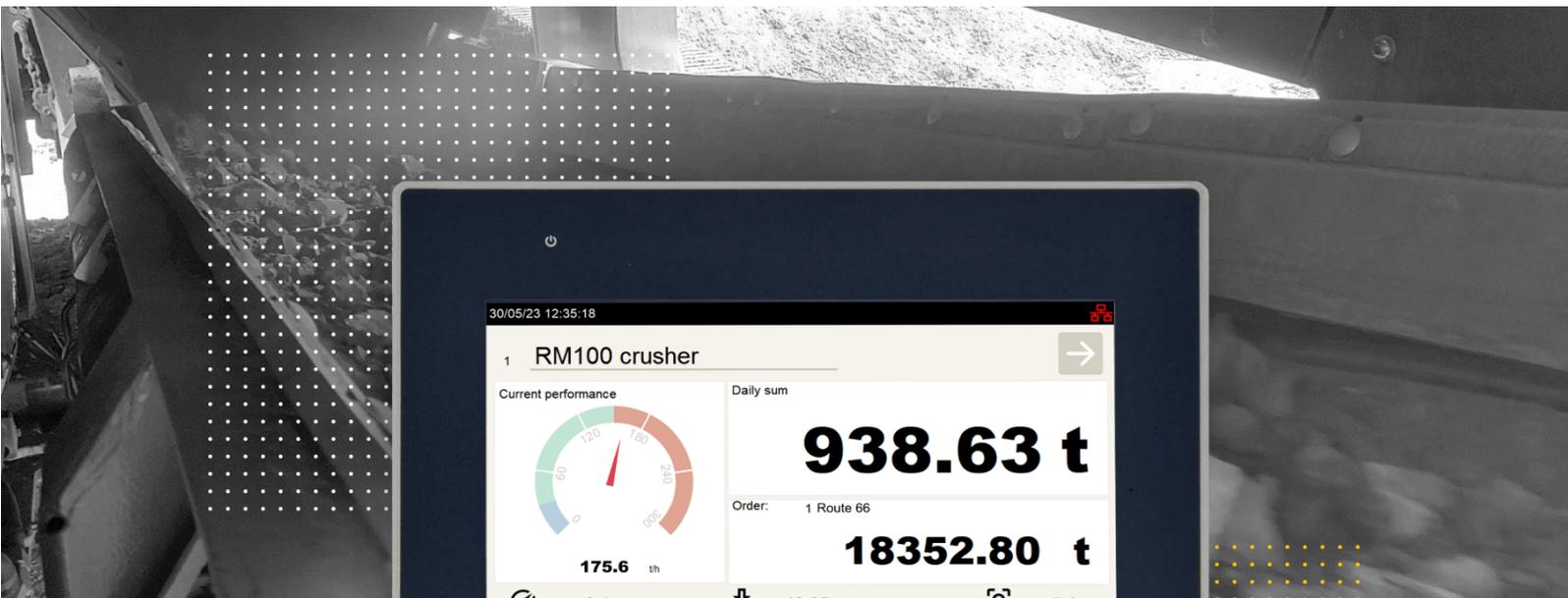




# Skalapp DV

## Quick User's Manual



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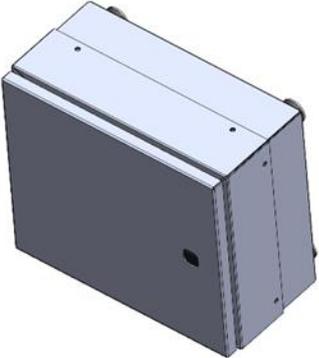
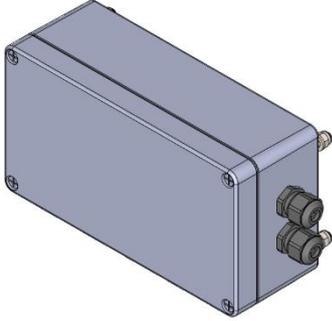
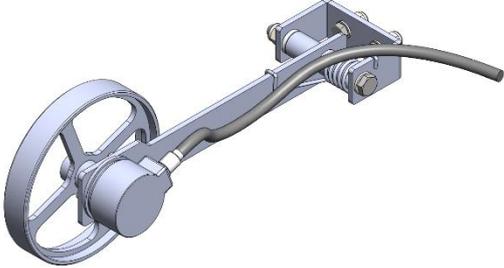
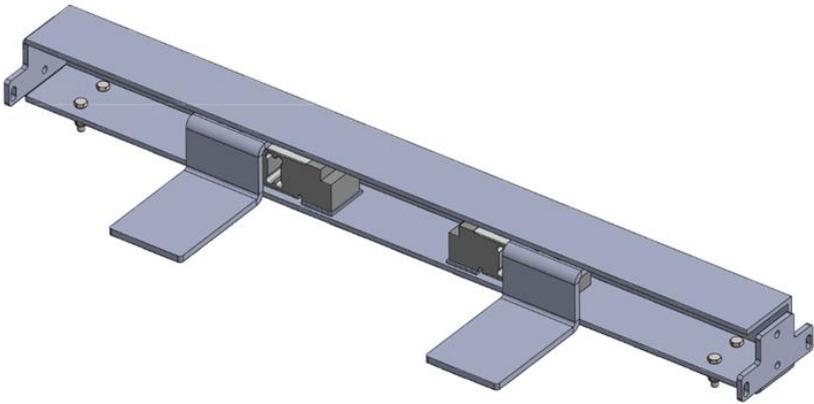
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## Using the manual

Read this entire manual before operating the scale and keep the instructions in an easily accessible location. If you misplace it, please request a new one from us.

Ensure these instructions are available to all persons using the scale. The scale operator is responsible for training all personnel who will use the scale. Training should strictly follow these instructions to ensure proper and safe operation.

## Scope of installation

<p>Control unit / HMI</p> 	<p>BaseBoard Computing Unit</p> 
<p>Computing unit with housing</p> 	<p>Encoder assembly</p> 
<p>Weighing frame assembly</p> 	

## Description of the installation

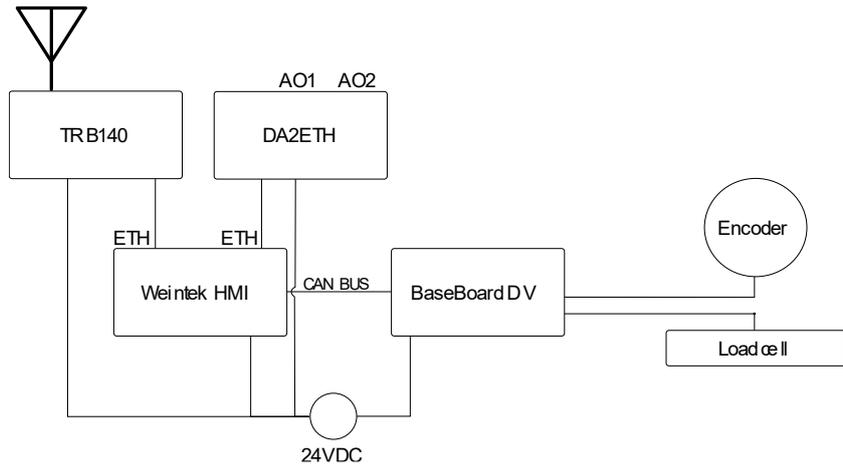
The scale consists of one or two loadcells placed in a weighing frame built into the belt conveyor structure. Loadcells provide input for calculating the load on the material belt.

There is also an encoder in the construction of the conveyor that measures the movement of the conveyor and its speed.

The signals from the

sensors (encoder and loadcell) are processed by the BaseBoard control unit, which calculates the weight of the material that has been transported by the conveyor. The resulting values are provided for further processing via the CAN bus.

The display of the calculated values is provided to the operator via an HMI terminal with a CAN bus input. The HMI can be extended with a TRB140 communication modem and/or DA2ETH converter.



## Intended use of the scale

This type of scale is designed for use on mobile and stationary conveyor equipment, e.g. screeners, crushers, or any conveyor belts with belt width up to 1600mm.

Do not use the belt scale and its components:

- in potentially explosive environments
- in environments
- containing aggressive substances (e. g. acids, alkalis, galvanizing baths)

Make sure that the load on the weighing frame does not exceed the maximum permissible load (see Technical Data). Avoid eccentric loads, especially on single-load cell scales (e.g., stepping on the edge of the frame) Overload can cause load cells to be destroyed!

**The scale is not intended for commercial weighing.**

## Important points to ensure scale accuracy

Any action that affects the tension of the belt can affect the accuracy of the weighing. If such changes occur, **always perform test weighing** and make corrections to the scale settings, if necessary, before full operation begins. In particular, the following situations apply:

- Transport of the conveyor/machine and its new assembly
- Belt replacement or repair
- Adjustment of the belt tension, changes to the conveyor design
- Adding/removing additional equipment (e.g., optional screener)

Always set **the scale to zero before starting the operation.** (see pg 8 Zero setting)

**Daily check the status of the scale** and conveyor. In this way, you can detect any problems (e.g., material stuck under the weighing frame) in time and prevent collection of incorrect data.



## Scale maintenance

- Only original spare parts and accessories approved by the manufacturer may be used.
- Carry out a regular optical check of the scale and all relevant components for damage.
- Only persons trained and authorized by the manufacturer may repair the scale.
- Use only water to clean the scale and its components, avoid using aggressive chemicals.

## Manufacturers liability

In no event shall the manufacturer be liable for any damage caused by

- Using a scale or machine (on which it is installed) contrary to the operating instructions.
- Using the scale for a purpose other than its intended purpose
- Physical modifications to the scale components by an unauthorized person

## Safety instructions



- Scale is subject to the same safety rules as the machine on which it is installed. Do not tamper with any scale components during machine operation, except for the HMI tablet, which is meant to be used as an interface to control the scale. Manipulation of the weighing system should only be carried out if the machine is switched off and only by the manufacturer or persons authorized and trained by the manufacturer.
- This manual does not describe the operation of machine. Observe the currently valid safety regulations, legal regulations, and rules for loading with conveyor belts, crushers, etc.
- Before starting work, familiarize yourself with the device, it is already late in the course of work.
- Please read this manual carefully before use and heed the safety warnings. Safe working helps to prevent accidents.

## Technical Data

- Minimum Load 8 kg /m
- Maximum Load of Weighing Frame
  - One loadcell 200 kg
  - Two loadcells 400 kg
- Height of the Weighing Frame min 100 mm
- Width of the Weighing Frame from 500 to 1600 mm
- Operating temperature -10 ... +55°C
- Storage temperature -20 ... +60°C
- Voltage Input 24 VDC, max 1A

## Switching the scale on, weighing

There is no need to start the scale in any way, the scale is connected directly to the machine's electrical circuit and is always switched on when the machine is in operation. Weighing runs automatically, immediately after starting the belt (unless the summation was stopped before). In some instances, the display/HMI may be equipped with a separate switch, which does not affect the individual scale, just the display.

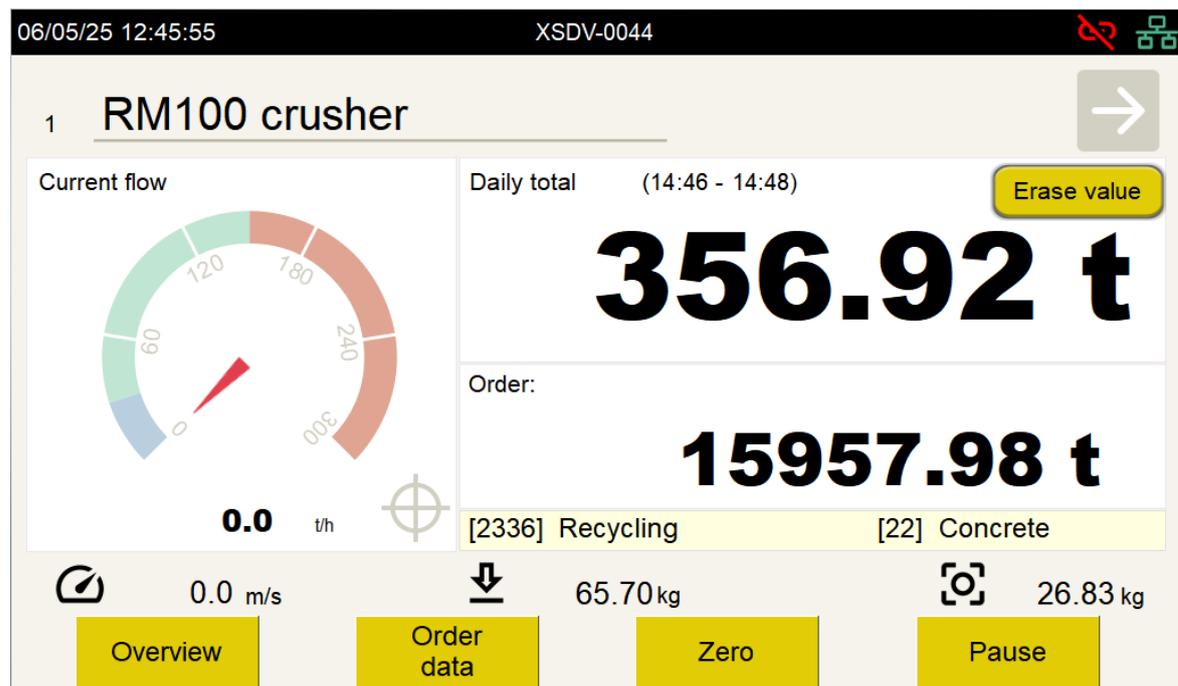
To ensure that the scale is working properly before operation, always

- Check the load values when the belt is running empty - should be around 0.
- Verify that the scale is not summarizing weight while running an empty belt.
- Set the scale to zero.
- Pay attention to the displayed values. If any data for the connected scale is out of range (showing \*\*\*\*), correct weighing will not be possible, and it is necessary to contact service!

Setting the scale to zero is required due to changes in the pressure of the belt on the weighing frame caused by external factors (changes in temperature, icing or other reasons that change the belt tension). For accurate weighing, it is advisable to zero each scale/belt at the beginning of each work shift.

## Scale Control & Main Screen

You can operate the scale via the touch screen. The main screen of the scale (see image below) is displayed immediately after the scale is switched on and contains all the functions you need for normal operation.



Main screen elements:

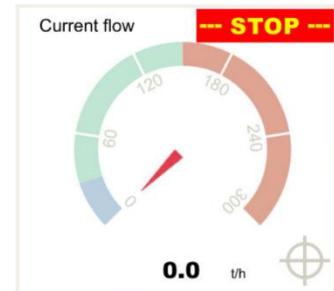
- The amount weighed on the selected belt during the current day or shift. Possible to erase the total manually or automatically
- The total amount weighed on the selected belt for the given order during the entire history of weighing.
- Current conveyor output in t/h – averaged of the last five seconds.
- Current speed and load values for given belt. The current zero-point value is also displayed

## Main screen buttons

In the case of monitoring multiple conveyors, you can switch between them using the arrows in the upper right corner

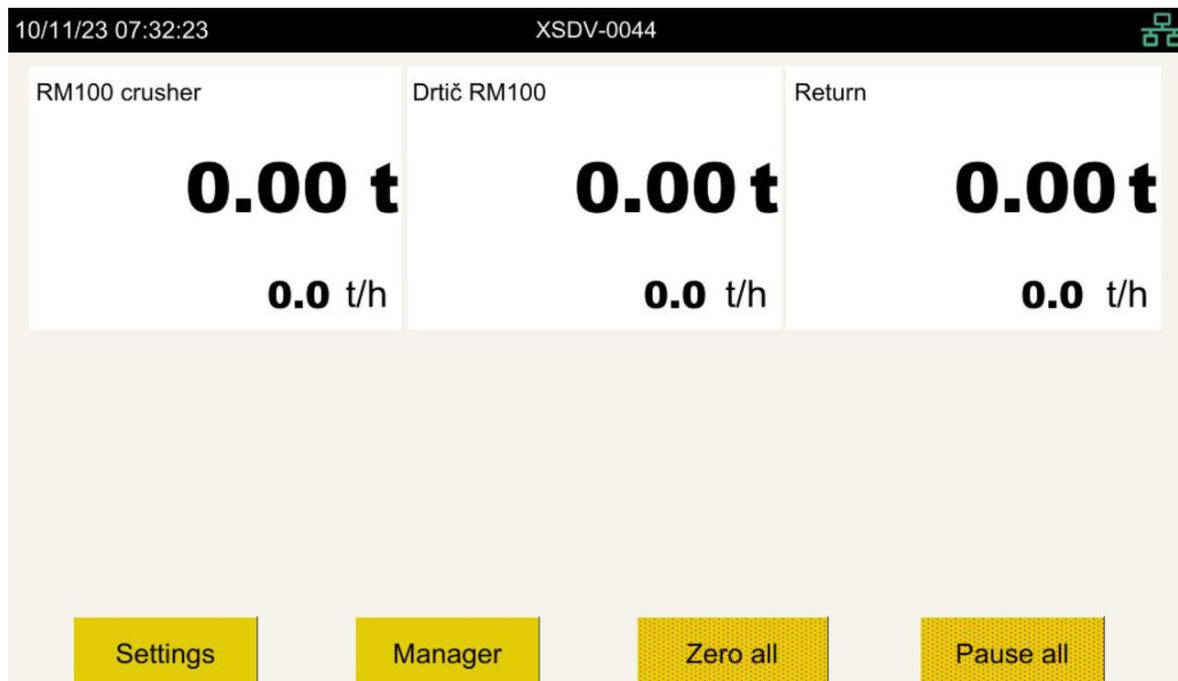
- „**Overview**“ - displays the current performance of all connected conveyors at once
- „**Order data**“ - displays a list of orders, allows you to switch orders or create a new one
- „**Zero**“ - set zero of the selected scale
- „**Pause**“ - pauses summation of the weight on the selected conveyor

A paused summation is clearly indicated by a STOP sign on the current flow indicator.



## Overview

The overview screen is especially useful when controlling multiple scales, where it provides an overview of the performance of the entire line on one screen. By pressing on the rectangle with the data of the selected scale, you will get to its detailed view.



## Overview screen buttons

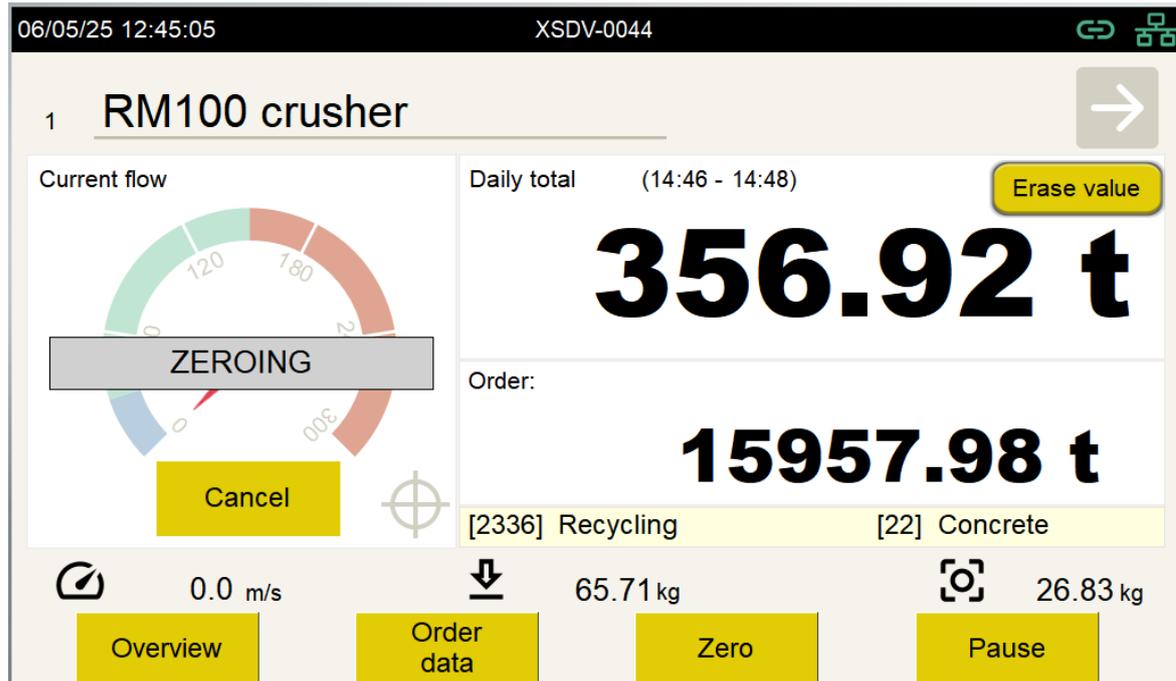
- „**Settings**“ - scale adjustment screen. It allows the user to change the brightness of the screen and its deactivation timeout. Most of the scale parameters are reserved for access by service personnel under a password.
- „**Manager**“ - Login of a user in the manager role. The manager has the authority to clear the summation values.
- „**Zero all**“ - Starts the zero setting process on all connected scales. For safety reasons, a longer (1s) hold of the button is required. When the button is pressed, a countdown to activation is displayed.
- „**Pause all**“ - stop summation of all scales. For safety reasons, a longer (1s) hold of the button is required. When the button is pressed, a countdown to activation is displayed.

## Zero setting

By zero, the scale adapts to new operating conditions (typically temperature or changed belt tension). For accurate weighing, it is necessary to set zero regularly, ideally before starting work – e.g., in the morning after starting the machine/line.

1. Start the empty belt. **Make sure there is no material running!!**
2. Press the „Zero“ button" and monitor the progress. When it is done the indicator disappears automatically and the scale is ready for operation

While zero setting is performed, the scale measures the load of an empty belt and sets a new zero-point value when the process is complete. New value is immediately applied to the calculation of the current load. Weighing summation is not performed during the process.



If you interrupt the zeroing process before it is completed, the original zero-point value will be retained, and the weighing summation will resume.

## Troubleshooting

### The scale works, but does not summarize

Check the belt speed and loadcell readings on the display at the bottom.

1. The belt speed must be approx. 1.0 m/s – approx. 2.0 m/s, if the display shows 0, verify that the measuring wheel touches the belt and is not blocked and call the service. It is possible the encoder has been damaged or the connection between the scale and the control unit has been interrupted.

### Load values out of range

1. The current load values are between 5-120kg during operation. An unloaded weighing frame at rest shows a load of -5 to +5 kg. If you observe readings outside this range, verify that the weighing frame is not mechanically damaged or blocked and call for service. Out-of-range values can also be displayed as \*\*\*\*\* 
2. Remove mechanical obstructions and check that the current weight shown on the display responds to load changes (e.g., pull the weighing frame once the belt is stopped)
3. If the problem cannot be corrected and the scale displays unlikely load values and/or does not respond, contact service.

### The scale doesn't work at all, nor does the display light up

1. Check the condition of the circuit breaker in the cabinet, then the input and output voltages on the voltage converter (bottom right, OUTPUT). If the output voltage is OK (24 V), contact the service.

### Scale is adding weight when the belt is empty

1. Set the scale to zero.
2. If the scale keeps summarizing values of an empty belt even after it is set to zero, contact the service.

### Missing connection to the scale (a red triangle is displayed)

3. In some cases, it is possible to physically disconnect the scale. In this situation, the display is correct and has no effect on the function of the other connected scales.
4. Check the cable connection between the control unit and the scale, it may have been damaged.
5. In the event of a short-term interruption (e.g., significant interference), the scale will reconnect with the control unit, wait few minutes. The weighed values are temporarily stored directly in the scale memory and will be transferred to the control unit after connection.
6. Restart the control unit Overview > Settings > Manual reboot
7. Restart the whole device – turn the battery switch off/on (sum stored in scale memory will be erased)



# skalapp.com

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# EU DECLARATION OF CONFORMITY

**Name and address of the manufacturer issuing the declaration:**

VETRA International s.r.o.  
Pod Korábem 727  
345 06 Kdyne  
Czech Republic  
Tel: +420 379 731 698

**Type designation**                      Skalapp DV  
**Product description**                 Continuous totaliser - conveyor belt scale

At our own risk, we hereby declare that the above product is designed and manufactured in accordance with the following harmonization requirements of the European Union

- Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility.

The above product is designed and manufactured in accordance with the technical requirements for EMC emissions and resistance according to:

- ČSN EN 61326-1 ed.2:2013
- ČSN EN 55011 ed.4:2017
- ČSN EN IEC 61000-6-2 ed.4:2019 and related standards:

**Compliance with standards verified by:**      Strojírenský zkušební ústav, s.p.  
**Protocol:**    31-10745/EZ dated 2022-05-31

VETRA International s.r.o.



Kdyně 1.6.2022  
(place and date of issue)

Ing. Michal Veselý , Executive Director  
(name, position) (signature)