

Multiplatform weighing instruments intended for cooperation with formula making scales

RADWAG company presents a brand new weighing module MW-04 series which cooperates with terminals models PUE HY, PUE 7 and PUE 5. The system is intended for carrying out multiplatform formula making processes in industry. Multiplatform weighing instruments enable conducting widely conceived precise batching of goods and substances in accordance with pre-defined order and composition, as well as repeatable filling ingredients of a formulation. The system as a whole is very intuitive and simple in operation.



1. Weighing module MW-04 series

The weighing module MW-04 series is designed for broad application in load cell based, multi-sensor and/or multiplatform weighing systems. The instruments features four analog-digital converters. Digital data can be acquired by the main processor either individually from each sensor or be simultaneously totalized from 2, 3 or 4 converters. The solution enables optional configuring of the weighing system, with consideration of user needs and reduction of the designing costs.



Fig.1. Total mass and its distribution into a few supporting points

- Designing load cell based scales for industry,
- Designing weighbridges,
- Precise parts counting systems,
- Mass monitoring systems (warehouses),
- Plus/Minus control systems (product control scales),
- Multi-ingredient formula making systems,
- Multi-ingredient filling systems,
- Designing complete weighing solutions monitored by a computer system,
- Designing automated weighing systems,
- Applicable for discrete weighing processes (without an indicator/terminal) in a production line.
- Weighing containers / silos.

Industrial parameters

The weighing module MW-04 series comes standard with 4 Inputs, 4 Outputs, and interfaces: RS232, RS485, Ethernet.

Housing	Metal
IP rating	IP 66
DC power supply	8÷16 V
AC power supply	100÷240V 50/60 Hz
Verification interval	6000
Min/ Max voltage per verification interval	0,4μV / 3,25μV
Industrial interfaces	RS232, RS485
IN/OUT type	Optoisolated
Control voltage range	5÷24VDC

Operation and Adjustment

The weighing module MW-04 series is operated and configured from a PC computer level using a dedicated software "MW Manager". The software enables adjusting the module, reading mass, tarring, zeroing and filter setting.

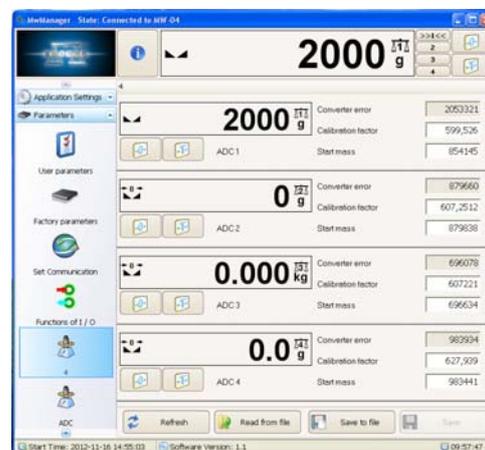


Fig.2. Preview of data from four weighing platforms

Application

Cooperation with terminals

The weighing module MW-04 series is intended for cooperation with RADWAG terminals PUE 5/15, PUE 5/19, PUE 7 and PUE HY or a PC computer.



Fig.3. Terminals cooperating with the weighing module MW-04 series

2. Industrial formula making and filling processes

A new feature of the terminals is modern approach to the formula making and filling processes in industry. Terminals' cooperation with the weighing module MW-04 increases functionality of the formula making and filling systems. The communication interfaces, such as RS 485 and Ethernet, available in the MW-04, enable operating the weighing platforms from the terminals at a large distance.

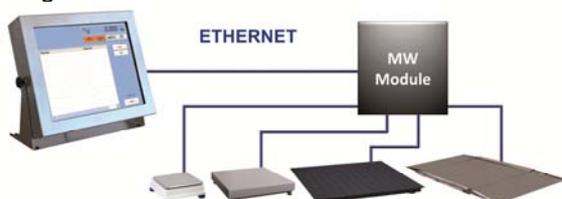


Fig.4. An example of configuring a connection between a terminal PUE 5 and a module MW-04

Formula making process based on RADWAG terminals is broadly applied in versatile industries. The system enables preparing formulas, i.e. manual or automatic batching, from multiple ingredients according to a pre-defined formulation content. The formula making process enables batching an optional product, including powdery or granular substances (sugar, tea, grains, flavourings, and other) and liquid materials due to the cooperation with appropriate automatics systems.

Software functions of terminals:

- Designing formula making and filling processes directly on a terminal;



Fig.5. Databases on a terminal PUE HY series

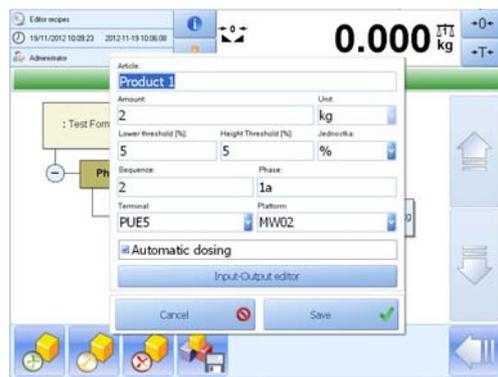


Fig. 6. "Formulation editor" mode in a terminal PUE 5 series

- Automatic or manual formula making and filling processes;
- Configuring cooperation of formula making scales with actuators of automatics system;
- Simultaneous carrying out formula making and filling processes on multiple weighing platforms.
- Issuing a single order on a formula making process (on terminal PUE 5) with division into lots, and determining of: formulation multiplier (number of repetitions of a formulation), source and target warehouse, operator and scale to carry out an issued order.

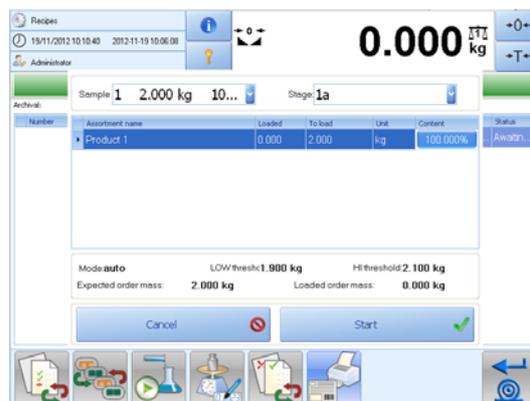


Fig.7. Production order in "Formulation" mode of the terminal PUE 5 series

"Formulation" software fully uses the technical features of the terminals for their cooperation with external devices of automatics, e.g. control of filling valves. Another advantage of the system is the possibility to set a relation between formulas on ingredients batched on different weighing platforms.

Extended software of the terminal PUE 5 enables:

- Operating a "order control" module that monitors completed manufacturing orders for controlling manufacturing lots.
- Warehouse management for settling goods used in formula making and filling processes.

Computer application “E2R Formulas”

The main task of the application is complex and real time operation of integrated and individual weighing systems.

The system enables defining from a computer level the databases on operators, products, clients, packages, warehouses, labels and universal variables.



Fig.8. E2R Formulas System – Ethernet based network

Company „RADWAG Balances and Scales” provides complete technical support for designing industrial formula making and filling systems. As a manufacturer, the company takes all measures to be close to its client, which simplifies communication and cooperation when adjusting systems to user needs, and ensures quick and professional warranty and post warranty service.



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Databases sent in real time to terminals operating in a E2R network environment enable selecting and carrying out formula making processes on these terminals.

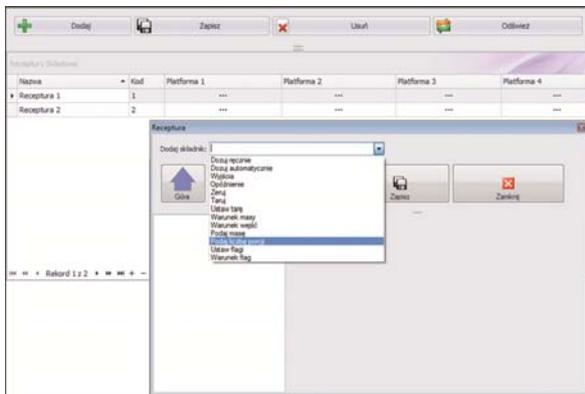


Fig.9. E2R Formulas – formula making window

Results from completed processes in a form of weighing records and reports from formula making processes are sent to a computer for storing and/or printing on a connected printer.



Fig.10. E2R Formulas – an example of a report