

Features

- Accurate recipe batch weighing, flow metering and processing.
- Automatic & Manual weighing of named ingredients from stored recipes.
- Timers and Digital Interlocks for control of Mixing, Heating and other process operations.
- Configurable Recipe Storage
Typical setting - 100 recipes x 30 lines.
- Report Printing or Serial Communications with computers and PLC's.

Description

The W-PAK100 is a single weigher, multiple ingredient, weigh controller that may be used in a variety of weighing and batch processing applications.

It operates from stored recipe data entered and edited through its front panel or downloaded from a supervisory computer or PLC.

The recipe to be batched can be selected through the front panel or from a supervisory computer or PLC.

Recipe Control

The recipe system provides a flexible means of controlling both product formulations and process operations.

The recipe instructions are sequentially executed and can include both weighing/flow metering control and process plant control functions. In many cases this eliminates the need for an additional PLC.

Sequence Mode

Where the process sequence is the same for all product formulations, a separate sequence program can be set up leaving the recipes to define material target weights only. This greatly simplifies the recipe data and minimises errors in the process sequence being introduced during recipe editing.

Batch Counting

In continuous repeat batching applications, an optional batch counter function can be used to set the total number of batches to be produced.

A volume mode is available which allows the controller to determine the number of batches required to fulfill a given total quantity. In this case recipes are formulated for a fixed batch size. The total quantity may be defined in cubic metres or tonnes, a Volume Conversion parameter is used when calculating the targets for a total quantity entered in cubic metres.

Recipe Example

Line	Inst	Parameter	Target
↑ 1	ICLK	MIXER EMPTY	1
2	SET	RUN MIXER	
3	AUTO	EGG	7.0 kg
4	AUTO	OIL	25.0 kg
5	AUTO	LEMON JUICE	3.0 kg
6	PRMT	WEAR GLOVES	
7	HADD	SALT	0.1 kg
8	TIME		45 sec
9	ALOG	ANALOGUE OUTPUT	65 %
+ 10	DISC		

REC ADD EDIT

Batch Reports

The serial interface may be configured for batch report printing, or remote computer link communications using a simple ASCII character protocol. Suitable driver software for a PC is available to support the serial communications and provides access to weight readings and last batch actual figures.

Production Logs

The W-PAK100 will store batch production logs for a configurable number of the most recent batches. These can be viewed on the display or printed via the serial interface. Each batch log comprises, recipe name, start/stop time & dates, batch number, weight target and actual figures.

Recipe Instructions

Instruction	Definition
AUTO	Automatic control of ingredient weigh/metering
HANDWEIGH	Hand weightment with tolerance check.
HAND ADD	Hand added ingredient without tolerance check.
TIMER	Delay time.
TIMER SET	Delay time with output set
P TMR SET	Run timer with output set in parallel with recipe execution.
ANALOGUE	Set analogue output %.
SET	Set digital output.
RESET	Reset digital output.
INPUT CHK	Interlock digital input with recipe execution.
PROMPT	Message prompt.
DISCHARGE	Discharge weigher to empty.
R TARGET	Weigh/Meter to target (Sequence mode only).

Each recipe line consists of the following data items: Instruction, associated parameter, and Target (if applicable).

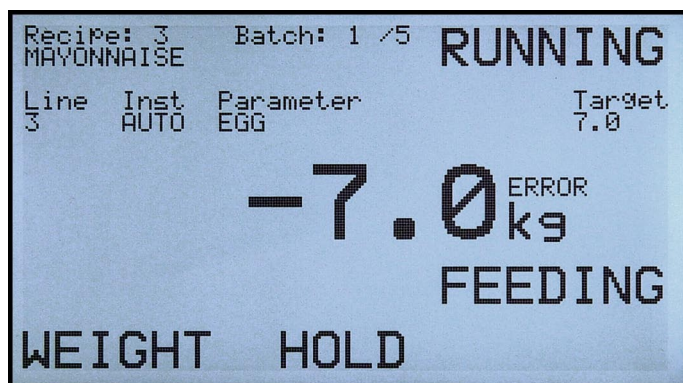
Digital outputs, in addition to being controlled from recipe instructions, may be configured to alternative control functions as follows:

Alarm, High and Low trips, common Fast Feed, and material low level alarms.

Auto Weighing Cycle

STEPS	ACTION	ALARM
WAIT START	Wait start signal	
ZERO CHECK	Check Gross Weight within +/- Zero Margin	UNDER/OVER ZERO
FAST FEED	Ingredient Feeder on and Fast Feed on until error within Fast Feed cut-off margin	NO FLOW
SLOW FEED	Ingredient Feeder on until error < IFC (Inflight Compensation)	NO FLOW
SETTLE	Wait until weigher settled then adjust IFC for subsequent batches	NOT SETTling
UNDER/JOg	If final weight below target by > Under Weight Margin jog feeder specified number of times. If still under weight, generate alarm.	UNDER WEIGHT
OVER WEIGHT	If final weight above target by > Over Weight Margin, generate alarm.	OVER WEIGHT
	If at any time gross weight exceeds Gross Weight Limit, generate alarm	OVER GROSS
	If at any time gross weight falls > Leak Check, generate alarm	LEAKING IN LEAKING OUT
DISCHARGE	Discharge output on until net weight < Discharge Band for the Discharge Time	

Batching Screen



Following a start signal, the controller runs on the Batching Screen. The active recipe, current batch number, & status : STANDBY, RUNNING, or HELD, are shown on the top line. The recipe line is also displayed together with the live weight, shown in large numerals, which can be displayed as the Error, Gross, or Net weight by repeated operation of the WEIGHT function key.

The status of the current instruction along with any alarm conditions are also indicated.

Material Stocks/Usage Screen

This screen is password code protected, it provides access to material stocks, deliveries, and usage records.

Totals of all materials used during batching are recorded and may be viewed or printed. Material stock levels are automatically adjusted from final batch actual consumption figures and from material delivery entries. Provision is also made for manual stock adjustments.

