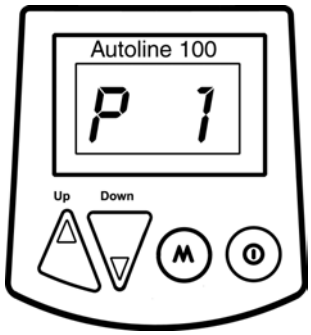
Autoline 100 Operating Instructions



Up Down Mode On/Off

1.0 Features

Quick, easy pattern selection
Spot marking
Continuous speed readout
Adjustable line length
Use with tactile or paint
Stores up to 70 customised patterns
Automatic calibration

1.1 Specifications

Max Speed	10 km/hr
Guns Controlled	2 (Only 1 tactile)
Minimum Line/Gap Length	50mm
Maximum Line/Gap Length	65 m
Paint Gun Adjustment Factor Range	-100 to +100
Spot Painting Time Range	5 to 512 milliseconds
Line Measurement	Metres
System Accuracy (Dependent on the encoder and system calibration)	Within 0.5% for modules greater than 1 metre in length.
Power Supply	+12/24 VDC
Maximum Supply Voltage	+30 VDC
Typical Supply Current Consumption:	30mA
Operating Temperature Range	-5^{O}C to +60^{O}C
Maximum Combined Output Current	4A if using 1 output 2A per output if using 2 outputs

1.2 Default Settings

Encoder Calibration Factor: 200 pulses/metre
Minimum Speed Threshold: 0.5 km/hour
Minimum Encoder Calibration: 60 pulses/metre
Maximum Encoder Calibration: 512 pulses/metre
Paintgun Adjustment Factor: 0 pulses
Spot Painting Time: 50ms

1.3 Patterns

Autoline units are supplied programmed with the following patterns. Customised patterns can be added by your Autoline supplier.

P1 Solid Line	P6 3 x 7	P11 RPM10M	P16 PRO250
P2 1 x 1	P7 6 x 6	P12 RPM20M	P17 PRO300
P3 1 x 2	P8 3 x 9	P13 RPM7x3	
P4 1 x 3	P9 13 x 7	P14 RPM12M	
P4 0.6 x 0.6	P10 23 x 1	P15 RPM24M	

2.0 Calibration

All Autoline units must be calibrated to the encoder on the vehicle. Calibration can be done manually or automatically. Follow the instructions below to calibrate the Autoline.

2.1 Manual Calibration (*MCAL*)

1 Turn the Autoline off.
2 While holding down the Mode (M) button, press and release the On/Off button. The unit will flash between the normal calibration (*MCAL*) and the calibration value entered (default value 200 pulses/metre).
3 Use the Up/Down button to manually change the calibration value.
4 Save the setting by holding down the Mode (M) button until *PROG* appears. Release the Mode button and the Autoline will turn itself off. It is now ready for use.

RMSD Limited, 46 Lake Road, P O Box 36 489, Northcote, Auckland, New Zealand
Tel: +64 9 419 1219 Fax: +64 9 419 1931 Email: info@rmsd.co.nz Web: www.rmsd.co.nz

2.2 Auto Calibration (ACAL)

1 Measure and mark out a 50 metre line.
2 Position the vehicle approximately 1 metre behind the start line and select a reference point on the vehicle to start/stop the calibration.
3 Turn the Autoline off.
4 While holding down the Mode (M) button, press and release the On/Off button. The unit will flash between the normal calibration (NCAL) and the calibration value entered (default value 200 pulses/metre).
5 Press the Mode (M) button once again. The unit will flash between ACAL and the calibration value entered.
6 Start driving. Immediately the reference point is on the starting line, press the trigger. The display will now show REDY.
7 Drive the measured distance. Release the trigger when the vehicle reference point is on the finish line.
8 As soon as the trigger is released, the Autoline will calculate and display the new calibration value for the measured distance.
9 Save the setting by holding down the Mode (M) button until PROG appears. Release the Mode button and the Autoline will turn itself off. It is now ready for use.

Note: If the calibration value is below the minimum value (60 pulses/metre) or above the maximum (512 pulses/metre) an auto-calibration error message will be displayed (E RC). After 5 seconds the display will return to ACAL ready to run the calibration again.

2.3 Aborting Calibration

Hold down the On/Off button until ABRT is displayed. Then release the On/Off button. The unit will now be off.

3.0 Operation

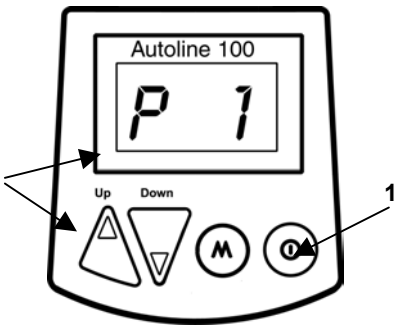
3.1 Trigger Active Warning: If the On/Off button is pressed when the trigger is active, a trigger error message is displayed (TRIG) and a warning beep sounds every 3 seconds until the trigger is released.

3.2 Speed Threshold: Painting should not be attempted below the speed threshold (0.5 km/hour). If the unit is turned on and the speed is below the threshold (0.5km/hour) the display shows the last selected pattern eg P 1. As soon as the speed moves above the threshold, the display shows the speed.

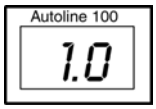
During painting if the speed goes below the threshold, all painting stops, the speed error message is displayed: SPER and, if the trigger is activated, the Autoline beeps every 3 seconds until the trigger is released.

4.0 Painting

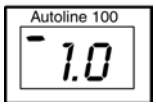
2 Select the pattern using the up/down buttons



1 Turn the Autoline on



3 Move the vehicle to above the speed threshold. The speed will be displayed on the LCD



4 Press the trigger to paint the selected pattern. The line appears on the screen (top left) to show the unit is painting. (**Note:** if the trigger is pressed while the vehicle is below the speed threshold the pattern will not paint correctly)

5 To stop painting release the trigger

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4.1 To Select a Different Pattern
Ensure the trigger is not activated. Then use the up/down buttons to select another pattern.

4.2 To Adjust the Paint Gun Adjustment Factor
(For more information on this feature refer below)
When the trigger is activated use the Up/Down buttons to make this adjustment.

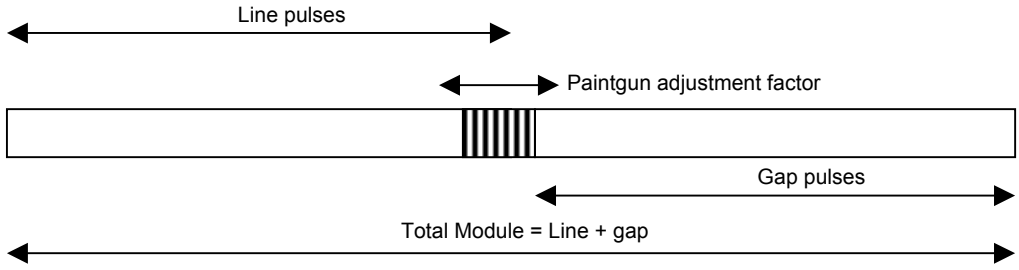
4.3 Shut Down the Autoline
Press the On/Off button at any time to turn off the Autoline. All painting will stop and if the trigger is deactivated, the unit will shutdown. If the trigger is still active, the trigger error message will be displayed (TRIG) and the warning beep will sound every 3 seconds until the trigger is released.

5.0 Testing and Adjustments

5.1 Test Paint Guns
1 Ensure the vehicle is stationery
2 Turn the Autoline on
3 Select a pattern using the gun/s to be tested
4 Press the trigger. The Autoline will display (TRIG). The gun/s will operate continuously until the trigger is released.
5 As soon as the trigger is released the Autoline will return to normal operation.

5.2 Paint Gun Adjustment Factor
When painting a line, the number of pulses the paint gun is set to is calculated as follows:
Line pulse count = length of line in pulses + adjust factor

The adjustment factor allows the device to take into account the turn-off delay for the paint gun.



Changing the adjustment factor adds/subtracts pulses to/from the line of a line+gap module. It does not change the overall length of the module. Provided the system calibration is known the length of a pulse can be calculated. For example: where the calibration is 200pulses/metre, each pulse is 5mm long.

Changing the Paint Gun Adjustment Factor (Default Setting 0 pulses)

When painting – if the trigger is activated use the up/down buttons to adjust the paint gun at any time. After 5 seconds the display will revert to the current speed.

When the trigger is not activated press the M Button once to display the paint gun adjustment factor. Use the Up/Down buttons to change the factor, e.g. -3. After 5 seconds, the display will revert to displaying the speed (or if you are below the speed threshold the current selected pattern).

5.3 Spot Painting Time
This is the length of time the paint gun is switched on. This value varies on different systems depending on the time required to open and close the paint gun. The speed of the vehicle also affects the spot length.

Changing the Spot Painting Time (Default 50 milliseconds) - *This setting cannot be changed if the trigger is activated.*
Press the Mode (M) button twice to display the spot painting time. Use the Up/Down buttons to

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Tel: +64 9 419 1219 Fax: +64 9 419 1931 Email: info@rmsd.co.nz Web: www.rmsd.co.nz

change the time, e.g. *5 38*. After 5 seconds the display will revert to the speed (or if the unit is below the speed threshold – the pattern number).

5.4 Load Factory Default Settings

Turn the Autoline off. Press the Up, Mode and On/Off buttons at the same time. Release all the buttons when the LCD display shows *LOAD FACT DEF*. The settings will reload and the unit will turn itself off.

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