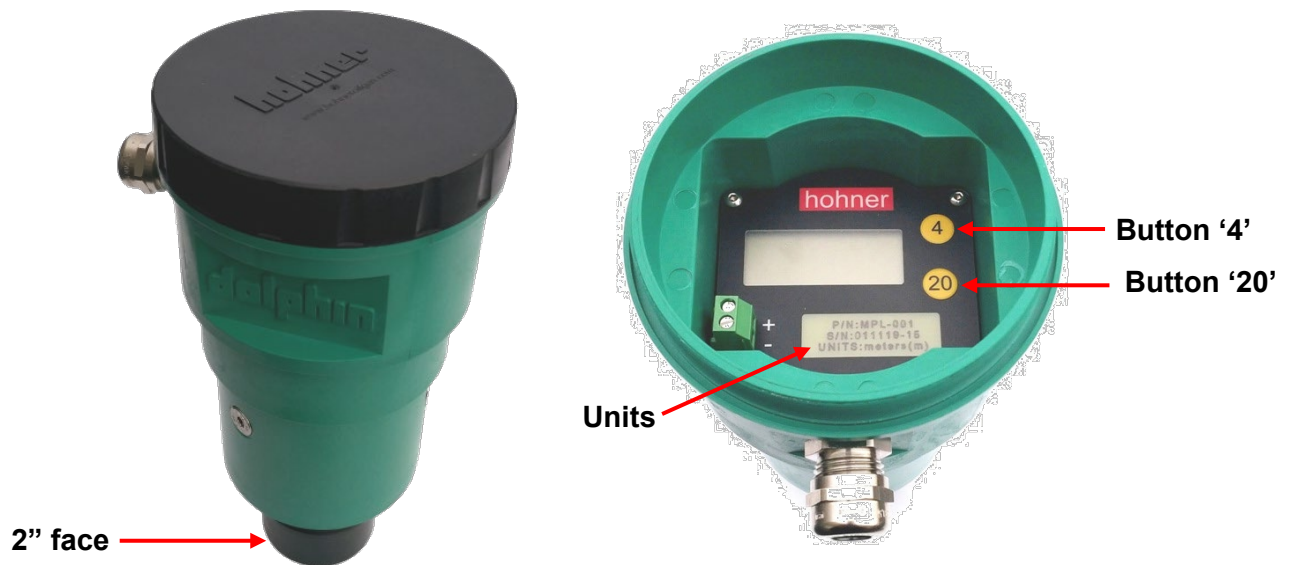


Dolphin - Ultrasonic Level Transmitter

Quick Start Guide



1. Start up

On power up the device starts with displaying the scrolling text '*Hohner Auto Ltd*' appended with firmware revision as a decimal number '*n.nn*' until initialised and ready for level measurements, at which point the device defaults to '*Level mode*'.

2. Level Mode

While in the '*Level mode*', upon successful reception of an echo for the emitted ultrasonic burst pulse, the device will display the level (distance from the 2" face of the sensor to the liquid level or any surface that will reflect sonic waves) measured in the '*units*' stated below the serial number of the device. If no echo is received the device will display '- - -'. The display may alternate in between the measured level and '- - -', depending on the echo reception.

3. Calibration Mode

Calibration of the 'mA' output can be performed either proportional or inversely proportional to the span of measured level. While in the '*Level mode*', for a 'single click' of either of buttons '4' or '20', the device will display the current stored level for the respective 'mA' output – a 'click' means press and release of the button. A second 'single click' within 5 seconds of the same button will enter calibration mode for the respective 'mA' output level by displaying either 'CA 4' or 'CA20' and register the current displayed level for the respective 4mA or 20mA output. Device will correctly assign 'proportional' or 'inversely proportional' span for the 'mA' output regardless of the order at which the levels are registered to the 4mA and 20mA output. If the calibration cannot be completed an error code '*Err.n*' will be displayed and the previous value for the corresponding button will be retained.

Err.1 – No echo being received consistently

Err.2 – Level is less than 'Blanking Level'

Err.3 – Level span for 4 – 20mA is less than 0.4m

4. Parameter Mode

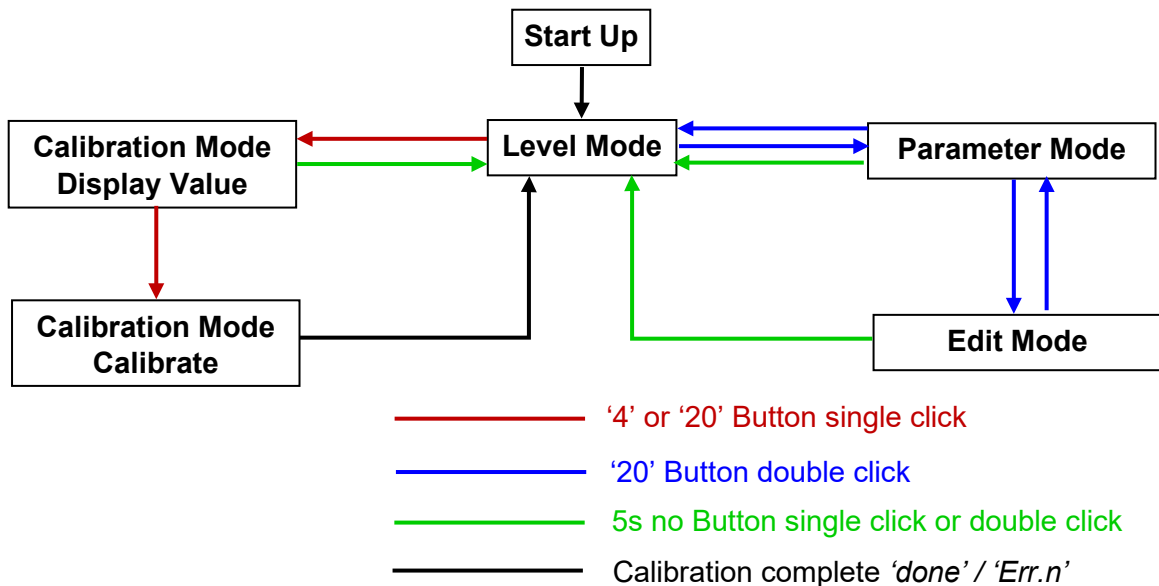
While in the 'Level mode', for a 'double click' of the button '20', the device will enter 'Parameter mode' by displaying 'P-*nn*' where '*nn*' is the parameter number that was last accessed or parameter 01 at first entry into 'Parameter mode' after power up. While in 'Parameter mode', a 'single click' of button '20' will increment the parameter number and a 'single click' of button '4' will decrement the parameter number. If no key 'clicks' detected for 5 seconds, the device will default back to 'Level mode'.

➤ **Note:** A 'double click' will be detected by the device when two consecutive 'clicks' occur within 0.25s (250ms), like the double click on a PC mouse.

5. Edit Mode

A 'double click' of the button '20' in 'Parameter mode' will enter the device into 'Edit mode' for the selected and displayed parameter number by displaying a flashing value of it. In this mode, a 'single click' of button '20' will increment the parameter value and a 'single click' of button '4' will decrement the parameter value. If no key 'clicks' detected for 5 seconds, the device will default back to 'Parameter mode'.

➤ **Note:** A 'double click' of the button '4' in 'Edit mode' will shift the cursor position by a digit for faster editing. 'Continuous press' of button '4' ('20') will decrement (increment) the value at a faster rate.



Parameter (P- <i>nn</i>)	Description	Default	Units																									
01	Level / Distance for 4mA output current	0.5m	m or ft																									
02	Level / Distance for 20mA output current	*	m or ft																									
03	Blanking Level / Distance	0.4m	m or ft																									
04	Fail safe mode: 0 – span 1 – minimum 2 – last level / distance	0	–																									
05	Fail Safe Timer (FST): 1 - 900	**	seconds (s)																									
06	Mud Pit Depth Range: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>Optimised (Maximum)</th> <th>Sample Rate</th> <th>P-05 ** Default</th> <th>P-02 * Default</th> </tr> </thead> <tbody> <tr> <td>0 –</td> <td>5m (6m)</td> <td>2.22Hz</td> <td>15s</td> <td>5m</td> </tr> <tr> <td>1 –</td> <td>7m (8m)</td> <td>1.33Hz</td> <td>25s</td> <td>7m</td> </tr> <tr> <td>2 –</td> <td>9m (10m)</td> <td>1.00Hz</td> <td>35s</td> <td>9m</td> </tr> <tr> <td>3 –</td> <td>11m (12m)</td> <td>1.13Hz</td> <td>40s</td> <td>11m</td> </tr> </tbody> </table>		Optimised (Maximum)	Sample Rate	P-05 ** Default	P-02 * Default	0 –	5m (6m)	2.22Hz	15s	5m	1 –	7m (8m)	1.33Hz	25s	7m	2 –	9m (10m)	1.00Hz	35s	9m	3 –	11m (12m)	1.13Hz	40s	11m	0	–
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Note: Specifications and tolerances when operated over the full temperature range (-40°C to +80°C) are only guaranteed when measuring distances greater than 0.5m.