

# Certificate

## Pursuant to section 12 of the Weights and Measures Act 1985

*Certification No 2850*

*Valid Until 9 September 2018*

*In accordance with the provisions of section 12 of the Weights and Measures Act 1985, the Secretary of State for Innovation, Universities and Skills hereby certifies as suitable for use for trade a pattern of a liquid measuring instrument, as described in the descriptive annex to this Certificate, and having the following characteristics:-*

*A liquid measuring instrument for dispensing beer, stout or cider in nominal quantities of ½ pint and 1 pint. The instrument is designated Berg Tap 1 and is intended for use at stadia, outdoor events and other venues where standard glassware is not allowed. Operation is electronically controlled with interlocks to ensure correct measure.*

*Note: This certificate relates to the suitability of the equipment for use for trade only in respect of its metrological characteristics. It does not constitute or imply any guarantee as to the safety of the equipment in use for trade or otherwise.*

*Under the provisions of section 12(5) of the said Act, the certificate is subject to the conditions as given in the descriptive annex.*

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Reference No: T1114/0005

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# Descriptive Annex

## 1 INTRODUCTION

This type of measuring instrument is for dispensing a measured nominal quantity of ½ pint and 1 pint of Beer, Stout or Cider by the momentary depression of a touch pad control switch at the bar dispensing point. The manufacturer's designation for the dispense unit is "Berg Tap 1". The system is designed to dispense 1 pint measures and ½ pint measures. A schematic view of the system is shown in Figure 1. Satisfactory dispensing requires that the temperature of the liquid be within the range 0 to 8 degrees Celsius (typically 3 degrees) during delivery.

## 2 CONSTRUCTION

### 2.1 Mechanical

The measuring instrument comprises a Froth on Beer (FOB) detector, a turbine flow meter, turbine flow meter J-Box, Tap J-Box, a dispense head which comprises of a pneumatic solenoid dispense valve, a control unit (ECU), a junction box, a low gas pressure switch and a pneumatic pump/compressor (to operate the pneumatic solenoid).

Up to 8 turbine flow meters can be wired to the control unit and provide the metered output information to the control circuit.

The FOB detector is mounted on the cellar-board, and can be from any supplier. The only requirement is that the FOB detector should inhibit dispensing where there is insufficient liquid in the chamber of the FOB detector.

**Note:** The FOB detector may be overridden for cleaning purposes only.

### 2.2 Electrical / Electronics

**2.2.1** The system is operated by 24 volt DC, which is supplied by a separate mains transformer.

**2.2.2** The control unit, which comprises of the main ECU, has inputs for flow meter J-Box and Tap J-Box, power and communication lines and is contained within the stainless steel housing of the system (Figure 2). The front of the control unit has a membrane keypad and a display panel, which is used for initial set up of the control unit and may show information about the system. The control unit is fitted with a key switch. The dispense head (Figure 3a) has a membrane keypad. The functions are shown in Figure 3b.

**2.2.3** The flow meter (Figure 4), GEMS 173934-C, operates by means of a rotating turbine wheel equipped with 4 magnets. A Hall Sensor detects the impulses from the magnets. The pulses are sent to the control unit.

### 2.3 Securing (sealing)

**2.3.1** The low gas pressure switch is installed into the gas line and fitted into a box, which is secured with sealing wire and a soft metal seal (Figure 5a) to prevent tampering.

**2.3.2** Sealing wire is passed through diagonally opposed holes on the junction box and secured with a soft metal seal (Figure 5b). This secures the turbine meter as it can not be changed without breaking this seal.

## **3 OPERATION**

### **3.1 Controls and Features**

Dispensing is initiated by the momentary operation of a button on the membrane panel. Buttons are labelled 1 – 4 and can be programmed to pour 1 pint and ½ pint measures. The buttons not in use are disabled and have no function (Figure 3b).

### **3.2 Operation Sequence**

The button is pressed to open the solenoid valve to allow flow of liquid. When the required number of pulses have been received from the turbine(s) by the control system, the solenoid valve then closes to shut off the flow thereby completing a dispense cycle.

### **3.3 Interlocks and safeguards**

**3.3.1** The keg top pressure is set at the required equilibrium pressure (between 20 and 38 PSI) for the specific liquid (Beer / Stout / Cider).

**3.3.2** There is a low gas pressure switch fitted into the gas line that will interrupt the system when the pressure drops below 20 PSI. The system will reinitiate when the gas pressure is rises to 20 PSI or above.

**3.3.3** The system cannot be re-initiated until the dispense cycle has been completed.

### **3.4 Software security and version control**

**3.4.1** The currently approved software version is “Berg Tap 1 Infinity Interface”, “V 5.10” which is displayed on the display panel at power up.

**3.4.2** The system is calibrated using the software and once calibrated this function of the software is only accessible to the installers. Any changes to the calibration (and any management changes which do not affect the calibration), are logged in an audit report which can be viewed and printed via the communication ports.

**3.4.3** Access to the operation of the control unit is through a Laptop or PC which connects to the control unit via isolated and data protected communication ports enabling the dispensing data to be coupled to management data and stock control systems.

**3.4.4** An Embedded Serial Number prevents using a rogue copy of the software to change data at an installation.

**3.4.5** A Network Security Code restricts access to the ECU to only the properly serialized copy of the software.

**3.4.6** Manufacturer Settable, Function Specific, Security Levels; this tool is used to restrict access to any function by anyone not specifically authorised to perform that function. For example, functions such as network setup (access to the network security code), brand operations (where portion sizes are set), and calibration, as well as any other function, can be separable and/or collectively restricted.

## **4 LEGENDS**

**4.1** The following legends are marked on a tamper evident label (Figure 6) positioned on the ECU.

- manufacturer's name,
- the certificate number
- quantity legend

## **5 AUTHORISED ALTERNATIVES**

No alternatives.

## **6 RECOMMENDED TESTS**

Installations of Berg Tap 1 systems have key components that should be checked before verification. These key components are temperature, flow rate and pressure.

**6.1** The required temperature of the liquid is between 0 and 8 degrees Celsius.

**6.2** The keg top pressure is set between 20 and 38 PSI. Reduce the keg top pressure to below 20 PSI to ensure the low pressure switch operates. Verify that delivery stops and that the appropriate warning lights on the tap head flashes. Restore correct top pressure.

**6.3** Drain the FOB device, verify that delivery is inhibited and that the appropriate warning lights on the tap head flash. Prime the FOB device to resume normal delivery.

**Note:** Due to the varied layout of installations, the FOB and keg may be some distance from the dispense point therefore making it difficult to check the operation of the FOB and low pressure sensors.

**6.4** That on completion of the installation:

- the sealing described in section 2.3, including tamper evident seals, is in place;
- the delivery adjustment (authorised access) is no longer accessible;
- the tamper evident label bearing the: manufacturer's name, certificate number and quantity legend is present on the instrument (section 4.1).

## **7 CONDITIONS**

This certificate is issued subject to the following conditions:

**7.1** The system is to be verified, after installation and commissioning, at the place of use and with the liquid that it is intended to dispense.

**7.2** Once initiated, the delivery cannot be stopped until the dispense cycle has been completed.

## **8 ILLUSTRATIONS**

Figure 1 Schematic of typical dispense system

Figure 2 Tap 1 Control Unit ECU

Figure 3a Dispense head

Figure 3b Dispense head functions

Figure 4 Flow meter

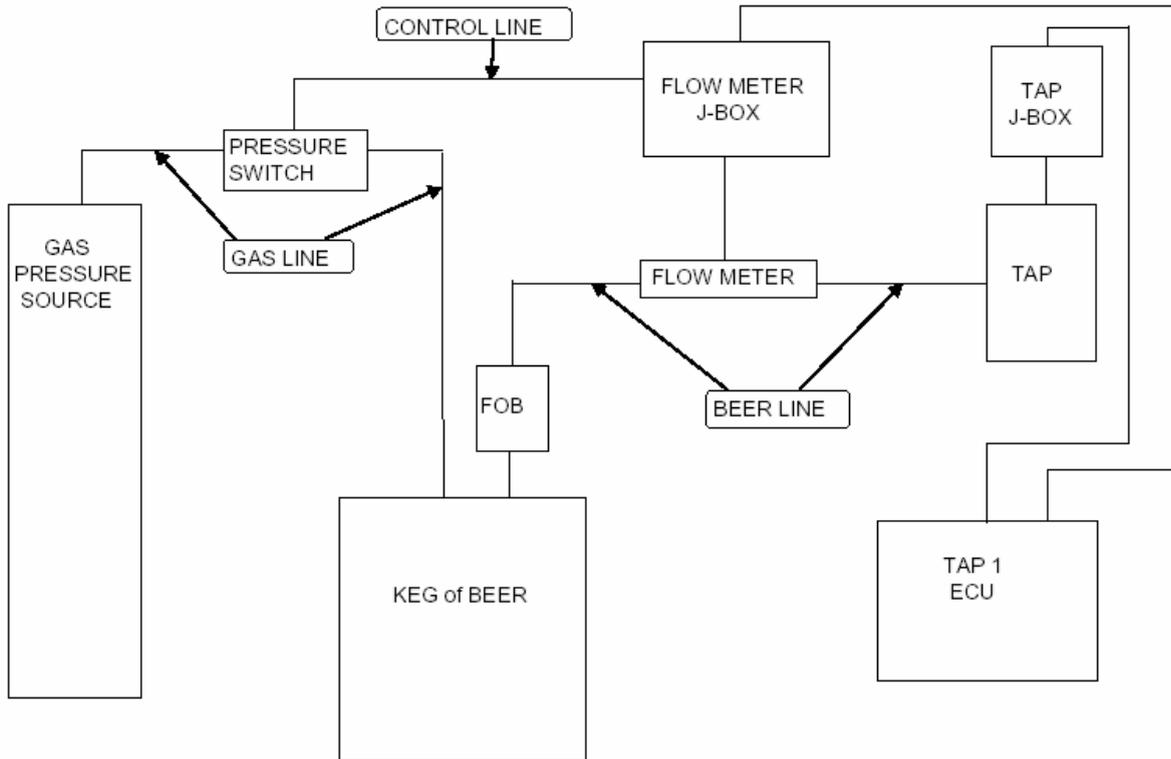
Figure 5a Sealing of pressure switch box

Figure 5b Junction box sealing

Figure 6 Legend label

## **9 CERTIFICATE HISTORY**

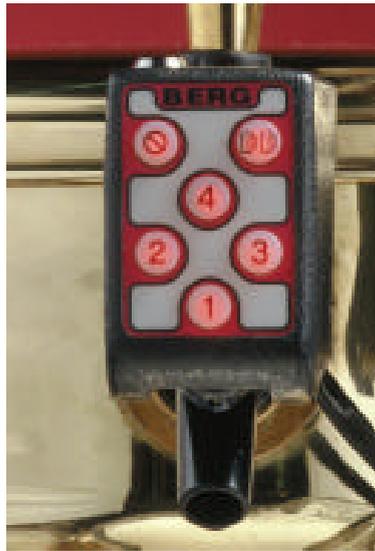
<b>ISSUE NO.</b>	<b>DATE</b>	<b>DESCRIPTION</b>
2850	10 September 2008	Certificate first issued



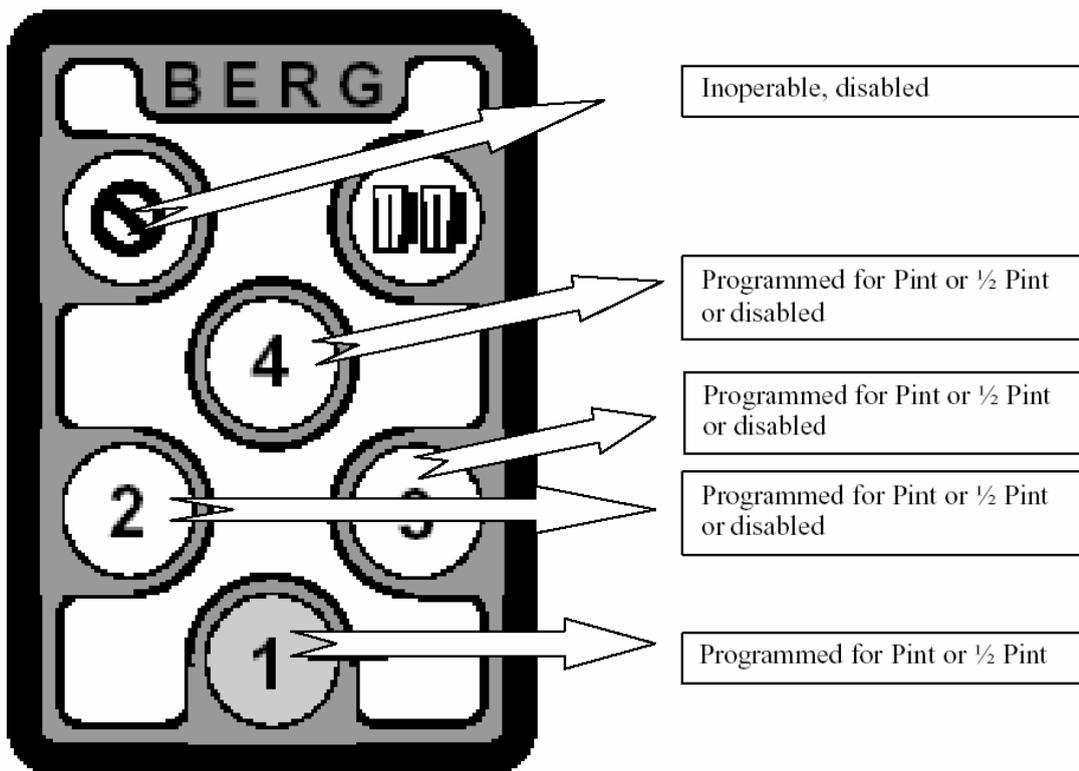
**Figure 1 Schematic of typical dispense system**



**Figure 2 Tap 1 Control Unit**



**Figure 3a**      **Dispense head**



**Figure 3b**      **Dispense head functions**



**Figure 4** Flow meter



**Figure 5a** Sealing of pressure switch box



**Figure 5b** Junction box sealing

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**2850**  
**PINT OR HALF PINT**

**Figure 6** Label

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