Australian Government

Department of Industry,
Innovation and Science

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/4C/275

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

Kosan Crisplant Model CUC-EX UFM Weighing Instrument

submitted by   Kosan Crisplant a/s
                      P.O Pedersens Vej 22
                      DK-8200   Aarhus N
                      Denmark

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

This approval becomes subject to review on 1/06/23, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – certificate issued	16/08/12
1	Pattern & variant 1 reviewed, variant 2 approved – interim certificate issued	24/05/18
2	Pattern & variant 1 reviewed, variant 2 approved – certificate issued	27/07/18

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/4C/275' and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0B.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999.*

Darryl Hines
Manager
Pattern Approval, Policy and
Licensing Section

TECHNICAL SCHEDULE No 6/4C/275

1. Description of Pattern

approved on 16/08/12
reviewed on 24/05/18

A Kosan Crisplant model CUC-EX UFM class ⬭ non-automatic self-indicating instrument (Figure 1) of 120 kg maximum capacity with a verification scale interval of 0.1 kg

Instruments are intended for the weighing and filling of liquefied petroleum gas (LPG) cylinders and have special features for this purpose. Filling is controlled by the control/indicator unit by means of one or two solenoid valves, and in some cases a pump, based on the weight reading of the cylinder and additional data that is entered by the operator.

Further details of these specialised functions are included in the CUC (Crisplant Universal Controller) user guide.

1.1 Basework

The basework has the load receptor directly supported by a single load cell. The load receptor has maximum nominal dimensions of 507 × 505 mm.

1.2 Load Cell

A single Flintec model PC6 (#) load cell of 200 kg maximum capacity is used, and mounted as shown in Figure 2.

(#) Versions of this load cell designated as 'C3', 'C3MI2', 'C3MI6', and 'C4' are all acceptable.

1.3 Control/Indicator Unit

A Kosan Crisplant model CUC-EX control unit and digital indicator (Figure 3) is used to process the signal from the load cell for conversion to a weight display, and to control the LPG flow by controlling the pump (if fitted) and solenoid valve/s.

1.3.1 Interfaces

The indicator may be fitted an interface to allow connection of a computer for remote inputting of LPG container data, and for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with NMI General Supplementary Certificates No S1/0B (in particular in regard to the data and its format).

Indications other than the indications of measured mass (i.e. gross, tare, net, totals) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

1.3.2 Zero

Zero is automatically corrected to within $\pm0.25e$ whenever the instrument comes to rest within 0.5e of zero.

The instrument has a semi-automatic zero-setting device with a nominal range of not more than 4% of the maximum capacity of the instrument.

1.3.3 Tare

A pre-set subtractive taring device up to maximum capacity may be fitted.

In entering data relating to the LPG container to be filled, the tare weight of the container and the weight of the container fittings are entered – together these form the pre-set tare value. The pre-set tare value could be manually entered or be saved in the 'Cylinder Type' folder.

1.4　Power Supply

A Kosan Cripsplant model CPI-Ex power supply unit (Figure 2) provides power to the control/indicator unit.

1.5　Levelling

Instruments shall be installed in the fixed, level location, as they are not provided with adjustable feet or level indicator.

1.6　Verification Provision

Provision is made for the application of a verification mark.

1.7　Descriptive Markings and Notices

Instruments are marked with the following data, together in one location, in the form shown at right:

Manufacturer's mark, or name written in full	Kosan Crisplant a/s
Name or mark of manufacturer's agent	………..
Indication of accuracy class	(III)
Pattern approval number for the instrument	NMI 6/4C/275
Maximum capacity	*Max* .... kg #1
Minimum capacity	*Min* .... kg #1
Verification scale interval	*e* = ... kg #1
Maximum subtractive tare	*T* = - ……… kg #2
Serial number of the instrument	………..

> #1　These markings are also shown near the display of the result if they are not already located there.
>
> #2　This marking is required if *T* is not equal to *Max*.

For instruments with maximum capacity less than 100 kg, a notice stating NOT FOR TRADING DIRECT WITH THE PUBLIC, or similar wording shall be displayed on the indicator.

1.8　Sealing Provision

The calibration adjustment is sealed by means of the calibration jumper ('S1') which is located in the CUC-EX control/indicator unit (as shown in Figure 3), and which is protected by the software password. To confirm if the calibration adjustment is protected, use the following sequence.

- Press ⊙⏎ buttons, then
- press ②⏎ buttons, then
- press ⊗ button, then
- press ①⏎ buttons, then
- enter the password, and then press ⊗ button.

When the display screen of the indicator shows 'Approval 0=OFF 1 = ON', press '0' then ⊜ button. If the jumper S1 is closed, then the display should show 'Jumper S1 is closed', and any attempt to change the calibration parameters should be prevented.

2.   Description of Variant 1   approved on 16/08/12
reviewed on 24/05/18

Certain other configurations of the model CUC-EX UFM having specifications as listed in Table 1. All instruments have a 507 × 505 mm load receptor.

TABLE 1 – Approved Capacities of the CUC-EX UFM Series

Maximum Capacity (*Max*)	Minimum Capacity (*Min*)	Verification Scale Interval (*e*)	Capacity of Flintec PC 6 (#) Series Load Cell Used
30 kg	0.2 kg	0.01 kg	100 kg
60 kg	2 kg	0.02 kg	200 kg
120 kg	2 kg	0.05 kg	200 kg
120 kg	**2 kg**	**0.1 kg**	**200 kg (*)**
150 kg	2 kg	0.1 kg	200 kg
600 kg	4 kg	0.2 kg	1000 kg

(#)   Versions of these load cells designated as 'C3', 'C3MI2', 'C3MI6', and 'C4' are all acceptable.

(*)   The pattern is shown in **bold** text.

3.   Description of Variant 2   approved on 24/05/2018

Model CUC-MKIV UFM instruments (Figure 4a and 4b) which are similar to the pattern but having revised printed circuit boards and a LCM module, and in certain capacities as listed in Table 2.

TABLE 2 – Approved Capacities of the CUC-MKIV UFM Series

Maximum Capacity (*Max*)	Minimum Capacity (*Min*)	Verification Scale Interval (*e*)	Capacity of Flintec PC 6 (#) Series Load Cell Used
30 kg	0.2 kg	0.01 kg	100 kg
60 kg	0.4 kg	0.02 kg	200 kg
120 kg	1 kg	0.05 kg	200 kg
120 kg	2 kg	0.1 kg	200 kg
150 kg	2 kg	0.1 kg	200 kg

3.1 Software

The software is designated as follows:

- CUC MKIV controller: 3.xx.yy

- LCM module: 1.01.zz

where "xx", "yy", and "zz" represent the identification of non-legally relevant software (Figure 5a, 5b and 5c).

The CUC MKIV software version and number can be seen in the switch-on display sequence (when the power is first applied to the instrument).

3.2 Sealing Provision

Provision is made for the instrument to be sealed.

- The CUC MKIV controller shall be sealed by using destructible adhesive labels placed over opposite sides of a join in the housing (Figure 6a).

- The LCM module shall be sealed by using destructible adhesive label(s) placed over one of the securing screws or opposite sides of a join in the housing (Figure 6b).

- The LCM module shall be sealed by using a destructible adhesive label over the cable connector to seal against replacement (Figure 6b).

- The calibration and configuration are sealed by recording the event counter on verification.

    Access to allow changing of set-up parameters including calibration parameters must be protected by a passcode.

    The CUC MKIV controller and LCM module are paired together at installation and after setup and calibration of the scale the event counter inside the LCM module is incremented.

    The value of the counter may be recorded on a destructible adhesive label attached to the instrument (as EVT CNT followed by a number).

    Any subsequent alteration to the calibration or configuration will be evident as the recorded value and the current counter value will differ.

The instructions for accessing the software version and event counter are as follows (starting from the normal weighing mode):

- Press ⌣⏎ buttons and the "MAIN MENU" is displayed.

- Press ③⏎ buttons and the "SERVICE" menu is displayed.

- Press ①⏎ buttons and the "GENERAL SERVICE" menu is displayed.

- Press ①⏎ buttons. The CUC MKIV software version and number is displayed.

- Press ⏎ button. The LCM software version and number, and event counter are displayed.

TEST PROCEDURE No 6/4C/275

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

FIGURE 6/4C/275 – 1

Kosan Crisplant Model CUC-EX UFM Weighing Instrument

FIGURE 6/4C/275 – 2

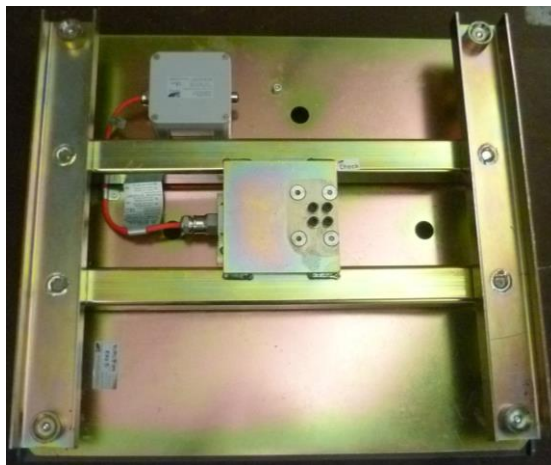Model CUC-EX Control/Indicator Unit

FIGURE 6/4C/275 – 3

S1 Calibration Jumper

FIGURE 6/4C/275 – 4

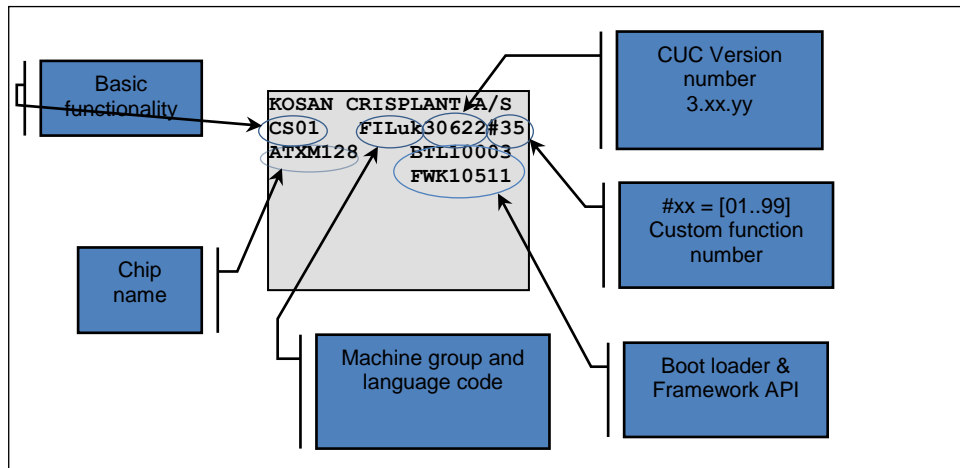(a) Kosan Crisplant Model CUC-MKIV UFM Weighing Instrument
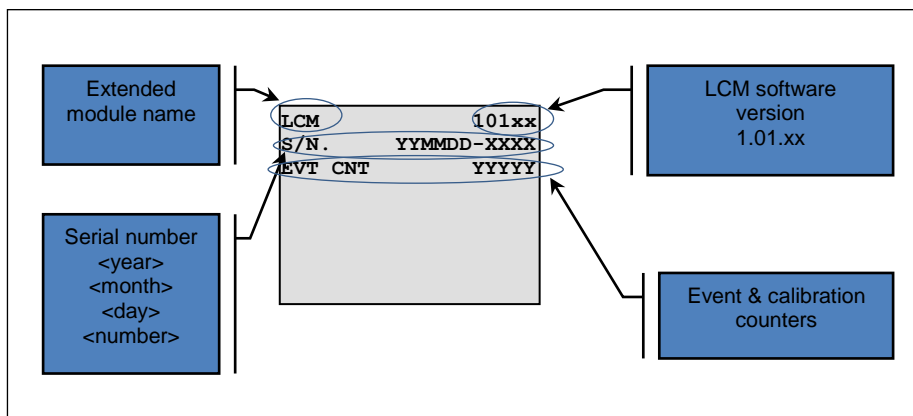

(b) LCM module location

FIGURE 6/4C/275 – 5

(a) CUC-MKIV Software Version Displayed on Start-up Screen

(b) CUC MKIV Software Version Identification Diagram

(c) LCM Software Version and Event Counter Identification Diagram

FIGURE 6/4C/275 – 6

(a) CUC EX MKIV Controller/Indicator Sealing

(b) LCM Module Sealing

Typical Sealing methods

~ End of Document ~