



36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S881

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.

Laumas Model CLM8 Digital Mass Indicator

submitted by Laumas Elettronica
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Montechiarugolo
Parma 43022
Italy

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 October 2015.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 2 approved – certificate issued	20/11/25

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S881' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S881' in addition to the approval number of the instrument, and only by persons authorised by the submitter.

It is the submitter'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.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to an instrument incorporating the pattern approved herein shall be within the limits specified herein and in any approval documentation for the other components.

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
Policy and Regulatory Services

TECHNICAL SCHEDULE No S881

1. Description of Pattern

approved on 20/11/25

A Laumas model CLM8 DIN rail mounting digital mass indicator (Figure 1a and Table 1) which may be configured to form part of a weighing instrument as follows:

- A class  weighing instrument with a single weighing range of up to 10 000 verification scale intervals; or
- A class  weighing instrument with a single range of up to 1000 verification scale intervals; or
- A class  multi-interval weighing instrument with up to three partial weighing ranges, in which case it is approved for use with up to 10 000 verification scale intervals per partial weighing range; or
- A class  multi-interval weighing instrument with up to three partial weighing ranges, in which case it is approved for use with up to 1000 verification scale intervals per partial weighing range; or
- A class  multiple range weighing instrument with up to three weighing ranges, in which case it is approved for use with up to 10 000 verification scale intervals per weighing range; or
- A class  multiple range weighing instrument with up to three weighing ranges, in which case it is approved for use with up to 1000 verification scale intervals per weighing range.

The changeover between weighing ranges is automatic.

The instrument has a dot-matrix LCD display for display of the weight value.

The instrument has eight (8) analogue channels and each channel allows to connect up to two (2) 350 Ω load cells.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

TABLE 1 – Specifications

Maximum number of verification scale intervals	10 000 (Class ) 1000 (Class )
Minimum sensitivity	0.4 μ V / scale interval
Excitation voltage	5 V DC
Maximum excitation current	229 mA
Fraction of maximum permissible error	$p_i = 0.5$
Minimum load cells impedance	21.9 Ω
Maximum load cell impedance	1100 Ω
Maximum tare range	–100% of Max
Operating temperature range	–10 $^{\circ}$ C to +40 $^{\circ}$ C
Load cell connection	4 or 6 wires plus shield
Maximum value of load cell cable length per wire cross section (*)	1926 m/mm ² (6-wire only)

(*) Additional connection cable between indicator and load cell or load cell junction box. In case a 4-wire connection is used, the load cells are connected directly without a junction box or lengthening the load cell(s) cable.

This approval does not include the use of the indicator as an automatic weighing instrument, unless specifically mentioned in a certificate of approval for such an instrument.

1.1 Zero

The instrument may be fitted with a zero-tracking device.

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.

The instrument has an initial zero-setting device with a nominal range of not more than 20% of the maximum capacity of the instrument.

1.2 Tare

A semi-automatic subtractive taring device of up to the maximum capacity of the instrument may be fitted.

A pre-set taring device of up to the maximum capacity (or of up to the Max_1 for multi-interval instruments) may also be fitted.

1.3 Initial Display Check

Upon switch-on, the display will check the number in sequence 111111 → 999999.

1.4 Power Supply

The instrument is fitted with a 24 VDC AC/DC mains adapter.

Note: The AC/DC mains adaptor supplied was a Merryking model MKE-2401000DEXD power supply (output 24 VDC, 1.0 A) – the submitter should be consulted regarding the acceptability of alternative power supply units.

1.5 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Laumas Elettronica SRL
Indication of accuracy class	III or IIII
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	
Pattern approval number for the indicator	NMI No S881
Pattern approval number for other components.	#3

#1 These markings are shown near the display of the result.

#2 This marking is required if T is not equal to Max .

#3 May be located separately from the other markings.

In addition, instruments not greater than 100 kg capacity carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

Note:

For multi-interval instruments the markings shall be as above, with the exception of the following (example is for instruments with three partial ranges):

Maximum capacity	<i>Max</i>/...../..... kg
Verification scale interval	<i>e</i> =/...../..... kg

For multiple range instrument the markings shall be as above, with the exception of the following (example is for instrument with three ranges)

	W1	W2	W3
Maximum capacity	 kg	 kg	 kg
Minimum capacity	 kg	 kg	 kg
Verification scale interval	 g	 g	 g

1.6 Verification Provision

Provision is made for the application of a verification mark.

1.7 Linearisation Facility

Instruments are fitted with a linearisation correction facility having up to eight correction points.

1.8 Additional Features

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

The weighing unstable goods, special batching, and peak measurement functions are not approved for trade use.

Note: In particular circumstances (e.g. in regard to weighbridge or public weighbridge operation), Trade Measurement legislation or other NMI Certificates of Approval may impose requirements in regard to specific features, methods of operation, or records to be provided (and in what form).

Certain features of this instrument are able to be configured by the installer or user. Whilst NMI believes that an acceptable configuration can be achieved for typical basic modes of operation, it may also be possible for the instrument to be configured to produce unacceptable configurations, and use of some configurations may be inappropriate in different situations. It is the responsibility of the installer and user to ensure that the configuration is acceptable and meets relevant requirements for any particular situation.

1.9 Interfaces

The instrument may be fitted with interfaces 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 (e.g. printing) shall only be used for trade in compliance with Supplementary Certificate No S1/0/B (in particular in regard to the data and its format).

Instruments may be fitted with following interfaces:

- RS-232 or RS-485.
- Ethernet TCP/IP.

1.10 Software Version

The software version is designated r1.yy.zz, where “r1” is the legal relevant part of the software, and “yy” and “zz” are major and minor version numbers for changes and corrections not influencing the legal function of the software.

The software version and number are displayed during the switch-on display sequence when the power is first applied to the instrument.

1.11 Sealing Provision

The legally relevant configuration and calibration are protected either by setting the calibration pins on the underside of the main board of the instrument to ‘open’, or by a password and a special number on a number card issued by the manufacturer.

The instrument has a non-settable event counter which increments each time the configuration or calibration is performed. If it is different from the number on the instrument verification or data label, then an unauthorised access is evident.

a) Seal by a Calibration Jumper

Ensure the calibration pins (Figure 2a) on the mainboard are set to open, then apply two brittle plastic stickers covering the screws at both ends of the instrument (Figure 2b).

To check if the instrument is sealed, following the steps below.

- Switch off the instrument then switch it on again.
- Press  +  buttons. If the pins are open, the instrument will display **PASSUN**. In this case the instrument may be verified.
- Otherwise the instrument will display **CALIB** in which case the instrument shall not be verified until the calibration pins have been correctly set to open.

b) Seal by Software Method

The legally relevant configuration and calibration of the instrument can be protected by software method (in which a customer password table is required from manufacturer). If the identification code and password from the password table are used for accessing the configuration and calibration of the instrument, then the instrument shall be switched off then switch on to reactivate the software seal.

For software seal method, follow the steps below to check if the configuration and the calibration of the instrument are protected.

- Press  +  buttons after switching off and then switching on the instrument. The indicator displays **PASSUN** if the parameters are protected, otherwise **CALIB** is displayed and the calibration and configuration of the instrument are not sealed/protected.
- If the **PASSUN** is displayed, then press  button to select **INFO**, and then press  button to enter the information menu.

- Press  button to select *LEGAL* menu, then press  button.
 - Observe the parameters scrolled through. After displaying 'PrOG' the instrument should display 'LEGAL'
- Note: if the instrument displays 'nOtLEG' then the parameters is not for trade purpose, therefore the indicator is not set for legal use.
- After the instrument displays 'refnUN', record the next displayed number (event counter number) on the seal for verification purpose.

c) Seal via Protective Interfaces

The legal relevant configuration and calibration via protective interfaces are protected by the passcode. To gain access to calibration via interfaces, a qualified access via protocol is required. Like in software seal method, a customer passcode table is required; the identification code and the passcode are entered via protocol. The seal checking method is the same as software seal checking method.

2. Description Variant 1

approved on 20/11/25

Certain other CLM8 models (Figures 1b, 1c and 1d) which are similar to the pattern. The differences between these models and the pattern are listed in Table 2.

Table 2: Other CLM8 Models

Model	Difference
CLM8CASTL	The pattern is mounted in an ABS enclosure, see Figure 1b.
CLM8I	Similar to the pattern, but it can be mounted on plane surface, see Figure 1c. The instrument is sealed by covering the access to one of the mounting screws with a brittle plastic seal sticker.
CLM8INOX	The model CLM8I is mounted in a waterproof metal enclosure, see Figure 1d.

The seal of a calibration jumper of Model CLM8I is by mounting the instrument on a plane surface and covering the mounting screw by a brittle plastic sticker (Figure 2c).

The seal by software method of Model CLM8I and Model CLM8INOX is the same as the pattern.

3. Description Variant 2

approved on 20/11/25

The designated model CLM16 (Figure 3) provides a configuration consisting of a CLM8 instrument defined as a 'master' module and a second CLM8 instrument defined as a 'slave' module. The model CLM16 has a total of 16 channels (8 channels on each CLM8), and up to 32 load cells may be connected to the CLM16.

The maximum excitation current value and minimum impedance value in Table 1 apply to each CLM8. The total available excitation current for CLM16 is 458 mA; the minimum impedance for CLM16 is 10.9 Ω .

The communication between the 'master' module and 'slave' module is via RS232 or RS485 interface.

The functions of 'slave' module are as follows:

- Collect the digital value from the ADC for each of its input analogue channels.

- Continuously send the digital values to the 'master' module via the serial interface.
- Block the display for showing a weight value.
- Block any configuration and calibration functions, except the configuration related to the serial communication with the 'master' module.

The functions of 'master' module are as follow:

- Calculate the weight value using both the internal A/D values and digital values received from the 'slave' module.
- Perform all the operations related to calibration, configuration, weighing operation and weight calculation.
- Store all the parameters relate to the previously listed operations.
- Display the final calculated weight value.

Both master and slave instruments shall be sealed in the same way as the pattern or variant 1.

TEST PROCEDURE No S881

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

The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

Maximum Permissible Errors

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

Tests

For multi-interval and multiple range instruments with verification scale intervals of e_1 , e_2 ..., apply e_1 for zero adjustment, and maximum permissible errors apply e_1 , e_2 ..., as applicable for the load.

FIGURE S881 - 1



(a) CLM8 DIN Rail Mount (Pattern)



(b) Model CLM8CASTL (Variant 1)

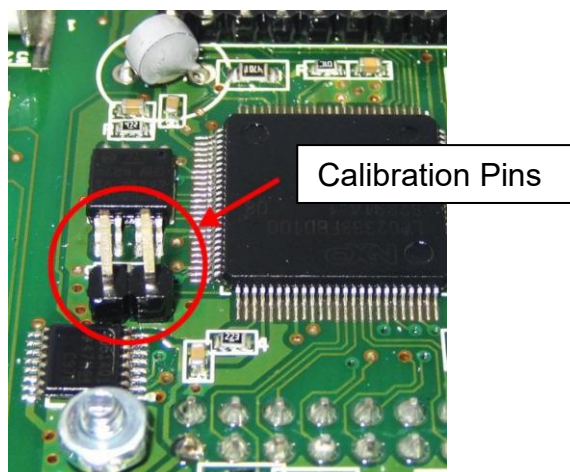


(c) Model CLM8I (Variant 1)

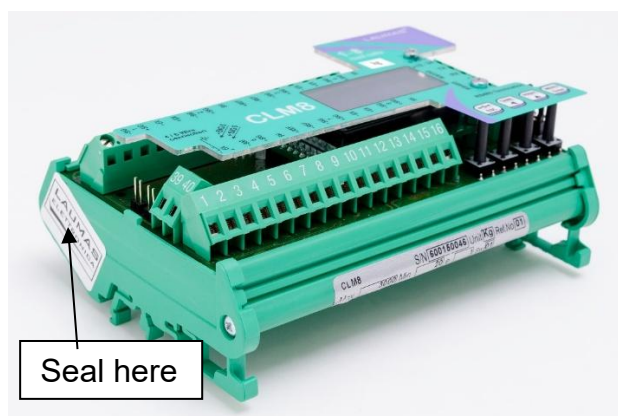


(d) Model CLM8INOX (Variant 1)

FIGURE S881 - 2



(a) Location Of Calibration Pins



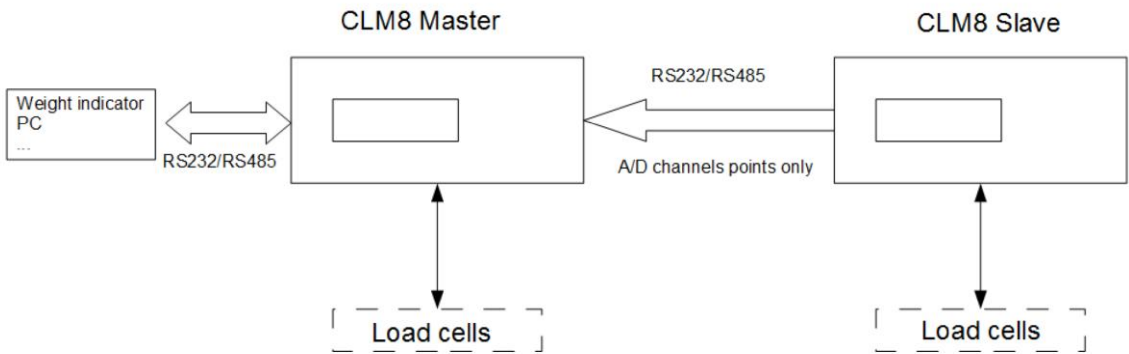
(b) Laumas Model CLM8 and CLM8CASTL Jumper Seal Method



(c) Laumas Model CLM8I and CLM8INOX Jumper Seal Method

Typical Destructible Label Seal

FIGURE S881 - 3



Laumas Model CLM16 Hardware Configuration (Variant 2)

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