

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval NMI S788

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.

Dini Argeo Model 3590EGT Digital Indicator

submitted by Dini Argeo S.r.l.

Via della Fisica 20

41042 Spezzano di Fiorano

Modena 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.

DOCUMENT HISTORY

| Rev | Reason/Details | Date |
|-----|--|----------|
| 0 | Pattern and variants 1 to 30 approved – certificate issued | 08/09/20 |
| | | |

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S788' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S788' in addition to the approval number of the instrument, 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 Certificates 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 HinesManager
Policy and Regulatory
Services

TECHNICAL SCHEDULE No S788

1. Description of Pattern

approved on 08/09/20

A Dini Argeo model 3590EGT digital mass indicator (Figure 1 and Table 1) which may be configured to form part of:

- A class weighing instrument with a single weighing range of up to 10000 verification scale intervals; or
- A class weighing instrument with a single weighing range of up to 1000 verification scale intervals; or
- A class multiple range weighing instrument with up to three weighing ranges, in which case it is approved for use with up to 3000 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 stainless steel enclosure with a 5.7 inch LCD touchscreen display for display of the weight value and for alphanumeric information and/or menu.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause 1.7 below).

TABLE 1 – Specifications

| 10 000 (class (III) |
|-------------------------|
| 1000 (class 🐠) |
| 0.3 μV / scale interval |
| 5 V DC |
| 250 mA |
| $p_i = 0.5$ |
| 20 Ω |
| 3000 Ω |
| 0 mV |
| 30 mV |
| -100% Max |
| -10°C to +40°C |
| 4-wire or 6-wire |
| shielded |
| |
| 200 m/mm ² |
| |

(*) Additional connection cable between indicator and load cell or load cell junction box.

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

A zero-tracking device may be fitted.

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

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.

1.2 Tare

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

A pre-set taring device (keyboard-entered and/or stored) of up to the maximum capacity may also be fitted.

1.3 Linearisation Facility

Instruments are fitted with a linearisation correction facility having seven correction points.

1.4 Display Check

A display check is initiated whenever power is applied.

1.5 Power Supply

Power supply may be by:

- AC mains power (110-240 V AC, 50/60 Hz); or
- 8 24 V DC supplied by an AC/DC mains adaptor or other DC power source; and/or
- an internal/external 6 V rechargeable battery.

Note: The AC/DC mains adaptor supplied was model WT24-1201500-Z power supply (output 12 V DC, 1.5 A) – the submittor should be consulted regarding the acceptability of alternative power supply units.

1.6 Additional Features

The additional functions (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 approved for trade use.

Instruments may be fitted with setpoint/batch, weight limits, checkweighing, counting, peak hold, dosing, percentage weighing and over/under functions. These 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.

1.7 Interfaces

The indicator 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 shall only be used for trade in compliance with NMI General Supplementary Certificate 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.

Instruments may be fitted with RS-232/485, Ethernet, Ethernet TCP IP, Ethernet IP, Profibus, Profinet, DeviceNet, CANopen, Ethercat, Modbus TCP, Bluetooth, WiFi, USB, RF (radio frequency), Photomosfet outputs, Optoisolated inputs, and digital and analogue inputs/outputs.

1.8 Verification Provision

Provision is made for the application of a verification mark.

1.9 Descriptive Markings and Notices

Instruments carry the following markings:

| Manufacturer's mark, or name written in full | Dini Argeo S.r.l. | |
|--|-------------------|--|
| Indication of accuracy class | or | |
| Maximum capacity (for each range) | <i>Max</i> kg #1 | |
| Minimum capacity (for each range) | <i>Min</i> kg #1 | |
| Verification scale interval (for each range) | e = kg #1 | |
| Serial number of the instrument | | |
| Pattern approval mark for the indicator | NMI S788 | |
| Pattern approval mark for other components | #2 | |

- #1 These markings are shown near the display of the result.
- #2 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.

Notes:

For multiple range instruments, the maximum capacity, minimum capacity and verification scale interval for each range shall be marked, with an indication of the range to which they apply, e.g.

| Range (*) | W1 | W2 | W3 |
|-----------|----|----|----|
| Max | kg | kg | kg |
| Min | kg | kg | kg |
| e = | kg | kg | Kg |

1.10 Software

The legally relevant software is identified by a number 01.01.

The instructions for accessing the legally relevant version numbers are as follows (starting from the normal weighing mode):

- Press the 'MENU' key and then 'Diagnostic' key.
- Press the 'Indicator information' key. The legally relevant version is displayed.

1.11 Sealing Provision

Provision is made for the calibration to be sealed by setting a link on the main board within the instrument to 'CLOSE' position, and then preventing access within the protective cover (Figure 32) or within the instrument housing.

It is possible to determine that the link status is in the 'CLOSE' position by pressing the top right of the LCD touchscreen to enter setup menu when the power is first applied to the indicator.

- If the link is in the 'CLOSE' position, the instrument will display 'Technical setup (LEGAL FOR TRADE)'. In this case the instrument may be verified.
- Otherwise the instrument will display 'Technical setup (INTERNAL USE ONLY)' in which case the instrument should not be verified until the link has been correctly set to the 'CLOSE' position.

Alternative instructions for determining that the link status is in the 'CLOSE' position are as follows (starting from the normal weighing mode):

- Press the 'MENU' key and then 'Diagnostic' key.
- Press the 'Indicator information' key. 'LEGAL FOR TRADE' or 'INTERNAL USE ONLY' is displayed.

Sealing to prevent access within the protective housing may be achieved by using a destructible adhesive label placed over the securing screw in the protective cover within the instrument (Figure 32) or using destructible adhesive labels placed over the opposite sides of a join in the instrument housing.

2. Description of Variant 1

approved on 08/09/20

The Dini Argeo model 3590ET (Figure 2) which is similar to the pattern but having an ABS enclosure and without the alphanumeric keyboard.

3. Description of Variant 2

approved on 08/09/20

The Dini Argeo models 3590EGT3GD (Figure 3a) and 3590EGT-IECEX3GD (Figure 3b) which is similar to the pattern but having a stainless steel hazardous environment enclosure with a breathing valve on the side.

4. Description of Variant 3

approved on 08/09/20

The Dini Argeo model 3590EGTT (Figure 4) which is similar to the pattern but having a different style stainless steel enclosure.

5 Description of Variant 4

approved on 08/09/20

The Dini Argeo model 3590EGT8 (Figure 5) which is similar to variant 3 but having an 8 inch LCD touchscreen without the alphanumeric keyboard.

6. Description of Variant 5

approved on 08/09/20

The Dini Argeo model 3590EGTB8 (Figure 6) which is similar to variant 4 but having a panel mount style stainless steel enclosure.

7. Description of Variant 6

approved on 08/09/20

The Dini Argeo model 3590ET8 (Figure 7) which is similar to variant 1 but having an 8 inch LCD touchscreen.

8. Description of Variant 7

approved on 08/09/20

The Dini Argeo model 3590ED (Figure 8) which is similar to the pattern but having a stainless steel enclosure with a large LED display for display of the weight value and an LCD display for both pre-set tare and semi-automatic tare, net weight value and alphanumeric information.

8.1 Zero and Tare

A zero-tracking device may be fitted.

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

Instruments have a combined semi-automatic zero-setting and subtractive tare balancing device (operated by the 'TARE/ZERO' key). A long press of this device zeroes the instrument to within ±0.25e if the load is within the zero-setting range (4% of the maximum capacity of the instrument), otherwise the instrument is tared.

The subtractive taring device operates up to the maximum capacity of the instrument.

A pre-set taring device (keyboard-entered and/or stored) of up to the maximum capacity may also be fitted.

8.2 Software

The legally relevant software is identified by a number 01.01.

The instructions for accessing the legally relevant version numbers are as follows (starting from the normal weighing mode):

- Press and hold the 'F4' key until 'PrG.VEr' is displayed.
- Press the 'Enter' key. The legally relevant version is displayed.

8.3 Sealing Provision

Provision is made for the calibration to be sealed by setting a link on the main board within the instrument to 'CLOSE' position, and then preventing access within the protective cover (Figure 32) or within the instrument housing.

It is possible to determine that the link status is in the 'CLOSE' position by pressing and holding the 'F4' key until 'PrG.VEr' is displayed and then pressing the 'Enter' key(starting from the normal weighing mode).

- If the link is in the 'CLOSE' position, the instrument will display 'LEGAL FOR TRADE'. In this case the instrument may be verified.
- Otherwise the instrument will display 'HI RESOLUTION' in which case the instrument should not be verified until the link has been correctly set to the 'CLOSE' position.

Sealing to prevent access within the protective housing may be achieved by using a destructible adhesive label placed over the securing screw in the protective cover within the instrument (Figure 32) or using destructible adhesive labels placed over the opposite sides of a join in the instrument housing.

9. Description of Variant 8

approved on 08/09/20

The Dini Argeo model 3590EQ (Figure 9) which is similar to variant 7 but having an ABS enclosure with a smaller LED display for display of the weight value and a QWERTY keypad.

10. Description of Variant 9

approved on 08/09/20

The Dini Argeo model 3590EXP (Figure 10) which is similar to variant 7 but having an ABS enclosure with a smaller LED display for display of the weight value.

11. Description of Variant 10

approved on 08/09/20

The Dini Argeo model 3590EXT (Figure 11) which is similar to variant 9 but having a stainless steel enclosure.

12. Description of Variant 11

approved on 08/09/20

The Dini Argeo model 3590E3GD (Figure 12) which is similar to variant 10 but having a stainless steel hazardous environment enclosure.

13. Description of Variant 12

approved on 08/09/20

The Dini Argeo model DFWL (Figure 13) which is similar to the pattern but having an ABS enclosure with a LCD display for display of the weight value.

13.1 Power Supply

Power supply may be by:

- AC mains power (110-240 V AC, 50/60 Hz); or
- 12 V DC supplied by an AC/DC mains adaptor or other DC power source; and/or
- an internal/external 6 V rechargeable battery.

13.2 Software

The legally relevant software is identified by a number 02.01.

The instrument type number and software version number can be seen by pressing the ' \downarrow ' key during the switch-on display sequence (when the power is first applied to the instrument).

13.3 Sealing Provision

Provision is made for the calibration to be sealed by setting a link on the main board within the instrument to 'OPEN' position, and then preventing access within the protective cover (Figure 32) or within the instrument housing.

It is possible to determine that the link status is in the 'OPEN' position by pressing the '1' key to enter setup menu when the power is first applied to the indicator.

• If the link is in the 'OPEN' position, the instrument will not allow to change instrument configurations. In this case the instrument may be verified.

 Otherwise the instrument will allow to change instrument configurations in which case the instrument should not be verified until the link has been correctly set to the 'OPEN' position.

Sealing to prevent access within the protective housing may be achieved by using a destructible adhesive label placed over the securing screw in the protective cover within the instrument as shown in Figure 32 or destructible adhesive labels placed over the opposite sides of a join in the instrument housing.

14. Description of Variant 13

approved on 08/09/20

The Dini Argeo model DFWXP (Figure 14) which is similar to variant 12 but having a different ABS enclosure with a smaller LCD display.

15. Description of Variant 14

approved on 08/09/20

The Dini Argeo model DFWLI (Figure 15) which is similar to variant 12 but having a stainless steel enclosure.

16. Description of Variant 15

approved on 08/09/20

The Dini Argeo model DFWLID (Figure 16) which is similar to variant 14 but having a larger LCD display.

17. Description of Variant 16

approved on 08/09/20

The Dini Argeo model DFWR (Figure 17) which is similar to variant 12 but having a different ABS enclosure with LED display and alphanumeric keypad.

18. Description of Variant 17

approved on 08/09/20

The Dini Argeo model DFWDXT (Figure 18) which is similar to variant 14 but having a different stainless steel enclosure with an LED display.

19. Description of Variant 18

approved on 08/09/20

The Dini Argeo model DFWKXT (Figure 19) which is similar to variant 16 but having a stainless steel enclosure with an LCD display.

20. Description of Variant 19

approved on 08/09/20

The Dini Argeo models DFWATEX2GD (Figure 20a) and DFWATEX3GD (Figure 20b) and DFW-IECEX3GD (Figure 20c) which are similar to variant 18 but having a stainless steel hazardous environment enclosure with a numeric keypad.

21. Description of Variant 20

approved on 08/09/20

The Dini Argeo model DGT20 (Figure 21) which is similar to variant 12 but having a stainless steel enclosure.

21.1 Power Supply

Power supply may be by:

- AC mains power (110-240 V AC, 50/60 Hz); or
- 12 24 V DC supplied by an AC/DC mains adaptor or other DC power source; and/or
- an internal/external 6 V rechargeable battery.

21.2 Software

The legally relevant software is identified by a number 09.01.

The instrument type number and software version number can be seen by pressing the '↓' key during the switch-on display sequence (when the power is first applied to the instrument).

21.3 Sealing Provision

Provision is made for the calibration to be sealed by setting a link on the main board within the instrument to 'OPEN' position, and then preventing access within the protective cover (Figure 32) or within the instrument housing.

It is possible to determine that the link status is in the 'OPEN' position by pressing the '1' key to enter setup menu when the power is first applied to the indicator.

- If the link is in the 'OPEN' position, the instrument will not allow to change instrument configurations. In this case the instrument may be verified.
- Otherwise the instrument will allow to change instrument configurations in which case the instrument should not be verified until the link has been correctly set to the 'OPEN' position.

Sealing to prevent access within the protective housing may be achieved by using a destructible adhesive label placed over the securing screw in the protective cover within the instrument (Figure 32) or using a destructive label placed over the securing screw in the instrument housing (Figures 33) or using destructible adhesive labels placed over the opposite sides of a join in the instrument housing.

22. Description of Variant 21

approved on 08/09/20

The Dini Argeo model DGT20I (Figure 22) which is similar to variant 20 but having a 304 grade stainless steel enclosure.

23. Description of Variant 22

approved on 08/09/20

The Dini Argeo model DGTPK (Figure 23) which is similar to variant 20 but with a numeric keypad.

24. Description of Variant 23

approved on 08/09/20

The Dini Argeo model DGTQ (Figure 24) which is similar to variant 20 but having a panel mount ABS enclosure.

25. Description of Variant 24

approved on 08/09/20

The Dini Argeo model DGTP (Figure 25) which is similar to variant 20 but having a panel mount plastic enclosure.

26. Description of Variant 25

approved on 08/09/20

The Dini Argeo model DGT1 (Figure 26) which is similar to variant 20 but this indicator is housed in a plastic module intended for mounting to a 'DIN' style rail (typically used in industrial electrical switchboards).

26.1 Sealing Provision

Provision is made for the calibration to be sealed by means of destructible adhesive labels as shown in Figure 34.

27. Description of Variant 26

approved on 08/09/20

The Dini Argeo models DGT4 (Figure 27a) and DGT4X (Figure 27b) which are similar to variant 25 with provision for the connection of a number of load cells to the indicator module.

28. Description of Variant 27

approved on 08/09/20

The Dini Argeo model DGT1S (Figure 28) which is similar to variant 20 but having a plastic house intended for mounting to a 'DIN' style rail.

28.1 Sealing Provision

Provision is made for the calibration to be sealed by means of destructible adhesive labels as shown in Figure 35.

29. Description of Variant 28

approved on 08/09/20

The Dini Argeo model DGT100 (Figure 29) which is similar to variant 20 but having a stainless steel enclosure with a 100 mm high LED matrix display.

30. Description of Variant 29

approved on 08/09/20

The Dini Argeo model DGT60 (Figure 30) which is similar to variant 20 but having a stainless steel enclosure with a 60 mm high LED matrix display.

31. Description of Variant 30

approved on 08/09/20

The pattern or variants may be connected via RS485 to Dini Argeo model GLR100 secondary display (Figure 31).

The model GLR100 display repeats the weighing value and any other primary indication, and other non-metrological information.

TEST PROCEDURE No S788

Instruments should 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*.

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.



Dini Argeo Model 3590EGT Digital Indicator (Pattern)

FIGURE S788 – 2



Dini Argeo Model 3590ET Digital Indicator (Variant 1)



(a) Dini Argeo Model 3590EGT3GD Digital Indicator (Variant 2)



(b) Dini Argeo Model 3590EGT-IECEX3GD Digital Indicator (Variant 2)

FIGURE S788 - 4



Dini Argeo Model 3590EGTT Digital Indicator (Variant 3)



Dini Argeo Model 3590EGT8 Digital Indicator (Variant 4)

FIGURE S788 - 6



Dini Argeo Model 3590EGTB8 Digital Indicator (Variant 5)

FIGURE S788 - 7



Dini Argeo Model 3590ET8 Digital Indicator (Variant 6)



Dini Argeo Model 3590ED Digital Indicator (Variant 7)

FIGURE S788 - 9



Dini Argeo Model 3590EQ Digital Indicator (Variant 8)

FIGURE S788 - 10



Dini Argeo Model 3590EXP Digital Indicator (Variant 9)



Dini Argeo Model 3590EXT Digital Indicator (Variant 10)

FIGURE S788 - 12



Dini Argeo Model 3590E3GD Digital Indicator (Variant 11)

FIGURE S788 - 13



Dini Argeo Model DFWL Digital Indicator (Variant 12)



Dini Argeo Model DFWXP Digital Indicator (Variant 13)

FIGURE S788 - 15



Dini Argeo Model DFWLI Digital Indicator (Variant 14)

FIGURE S788 - 16



Dini Argeo Model DFWLID Digital Indicator (Variant 15)



Dini Argeo Model DFWR Digital Indicator (Variant 16)

FIGURE S788 - 18



Dini Argeo Model DFWDXT Digital Indicator (Variant 17)

FIGURE S788 - 19



Dini Argeo Model DFWKXT Digital Indicator (Variant 18)



(a) Dini Argeo Model DFWATEX2GD Digital Indicator (Variant 19)



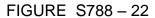
(b) Dini Argeo Model DFWATEX3GD Digital Indicator (Variant 19)



(c) Dini Argeo Model DFW-IECEX3GD Digital Indicator (Variant 19)



Dini Argeo Model DGT20 Digital Indicator (Variant 20)





Dini Argeo Model DGT20I Digital Indicator (Variant 21)

FIGURE S788 - 23



Dini Argeo Model DGTPK Digital Indicator (Variant 22)



Dini Argeo Model DGTQ Digital Indicator (Variant 23)

FIGURE S788 - 25



Dini Argeo Model DGTP Digital Indicator (Variant 24)

FIGURE S788 - 26



Dini Argeo Model DGT1 Digital Indicator (Variant 25)



(a) Dini Argeo Model DGT4 Digital Indicator (Variant 26)



(b) Dini Argeo Model DGT4X Digital Indicator (Variant 26)

FIGURE S788 - 28



Dini Argeo Model DGT1S Digital Indicator (Variant 27)



Dini Argeo Model DGT100 Digital Indicator (Variant 28)

FIGURE S788 - 30



Dini Argeo Model DGT60 Digital Indicator (Variant 29)

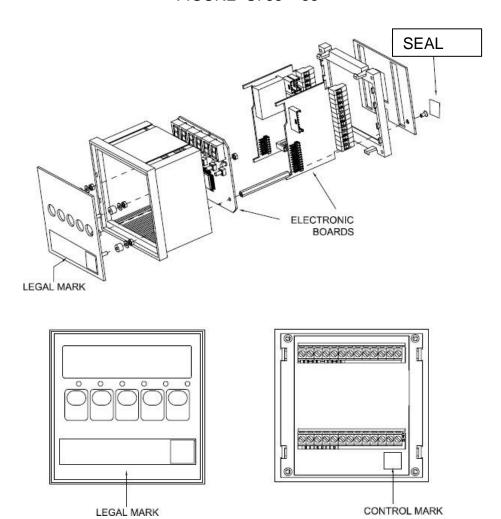
FIGURE S788 - 31

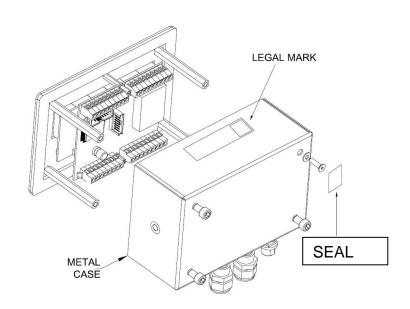


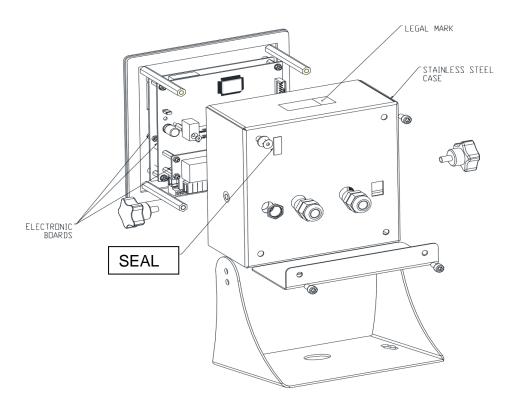
Dini Argeo Model GLR100 Secondary Display (Variant 30)



Typical Sealing of Protective Cover

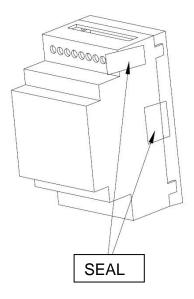




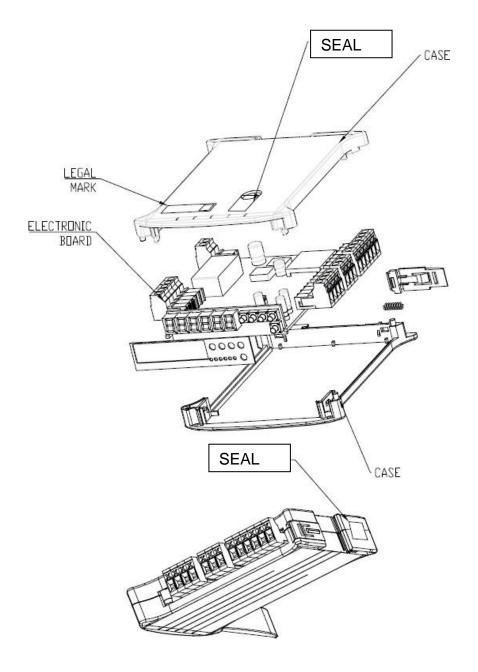


Typical Sealing of Instrument Housing with Securing Screw

FIGURE S788 - 34



Typical Sealing of Models DGT1 and DGT4 (Variants 25 & 26)



Typical Sealing of Model DGT1S (Variant 27)

~ End of Document ~