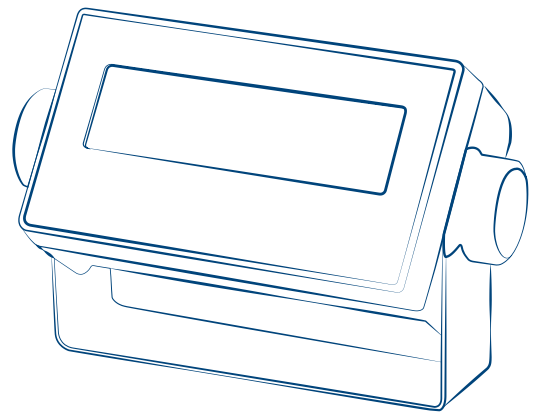
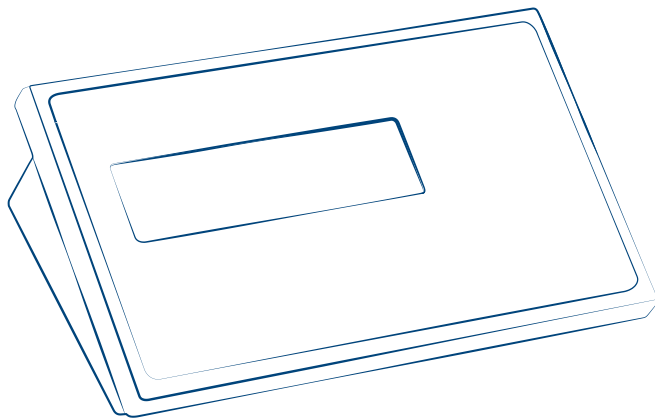


DFWL PLUS • DFWLI PLUS



1. Introduction and warnings	4
2. Technical features	5
3. Approval	6
4. Connections	7
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Safety

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1. INTRODUCTION AND WARNINGS

This product is the best solution for multi-function weighing applications, offering ease of use, high precision in reading the weight, and many functions to speed up and simplify everyday work.

This manual provides an overview of the potentials of the product. The configuration menu can be used to adapt the product functionality to the required weighing application.



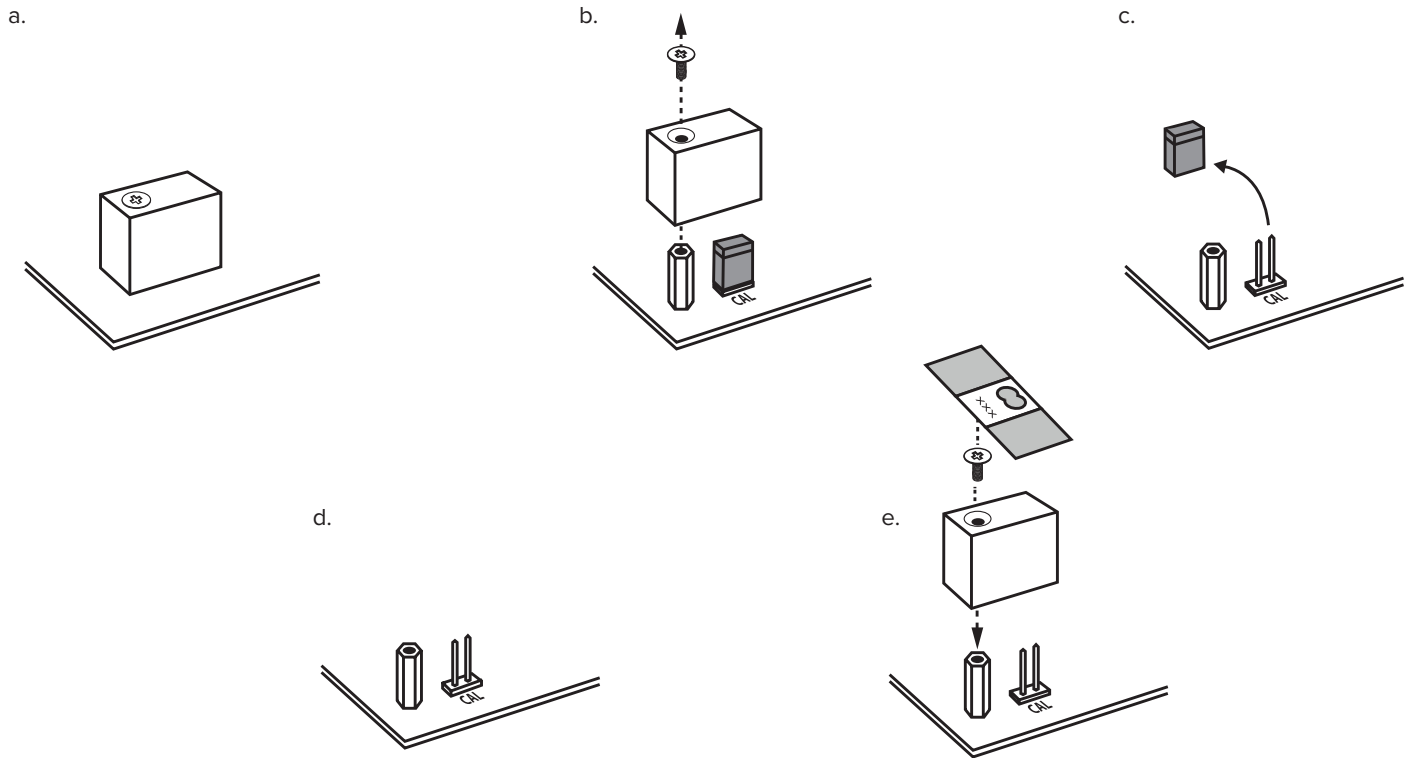
WARNINGS:

- Do not make repairs or replace electronic components of the instrument boards.
- Only use original spare parts.
- Any tampering with the equipment or use of non-original spare parts voids the warranty and relieves the manufacturer of any liability.
- Before any installation or repair that involves access to electronic parts, turn off the device and disconnect any source of power supply (battery, 230V network or other).
- Always use network power supply sources regulated within $\pm 10\%$ of the rated voltage.
- In applications in connection with third parties, always follow the specifications given on the approval decree of the equipment.
- Do not immerse in water.
- Do not wash with water jets (except versions with specific IP protection degree).
- Protect from direct rainfall (except versions with specific IP protection degree).
- Do not use aggressive cleaning solvents or substances.
- Do not install in potentially explosive environments.
- Earth connect any earth socket located on the equipment casing, using a cable with a diameter of at least 16 mm^2 .

2. TECHNICAL FEATURES

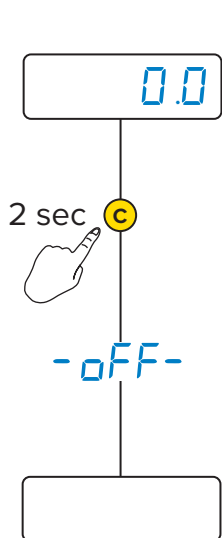
		DFWL PLUS	DFWLI PLUS
Case		ABS	AISI 304 stainless steel
Screen		Backlit LCD digit height = 25 mm	
Brightness		5 intensity levels	
Keypad		5 keys, waterproof	
IP protection rating		-	IP68
Cable gland	<i>Standard</i>	1 PG9, plastic	2 PG9, steel
	<i>Extra</i>	-	1 PG9, steel
Load cell inputs		4	
Number of scales		1	
Maximum number of connectable load cells		8 x 350 Ω	
Maximum input current to load cells		120 mA	
Temperature range	<i>Internal use</i>	-10°C /+40°C	
	<i>Type-approved</i>	-10°C /+40°C	
Power supply	<i>Battery</i>	4 x AA	-
	<i>Battery duration</i>	up to 40 h	-
	<i>Power supply</i>	External IN: 110/240 Vac OUT: 12 Vdc	Internal IN: 88/264 Vac OUT: 12 Vdc
	<i>Available plugs</i>	EU, AU, UK, US	EU, AU, UK, US, CH
Serial ports	<i>RS232</i>	1 (RJ11 connector)	
	<i>RS232 + CTS</i>	1 (internal, not usable)	1 (internal)
	<i>RS485</i>	1 (internal, not usable)	1 (internal, optional)
	<i>TTL</i>	1 (internal, not usable)	1 (internal)
	<i>Sensor</i>	1 (internal, not usable)	1 (internal)
	<i>USB</i>	1 Mini-USB (internal, for manufacturer use only)	
Number of divisions	<i>Internal use</i>	from 100 to 800,000	
	<i>Type-approved</i>	10,000 / 3 x 3,000	
Digital outputs (DFIO, optional)	<i>Max. number</i>	6	
	<i>Features</i>	- 48 Vac or 60 Vdc 15 mA 10 Ω Max	
Digital inputs (DFIO, optional)	<i>Max. number</i>	2	
	<i>Features</i>	- 12 / 24 Vdc 5 / 20 mA	
Analogue output (DAC16OSER, optional)	<i>Voltage</i>	0 / 5 V	0 / 10 V
	<i>Current</i>	-	-5 / 5 V
		0 / 20 mA	0 / 20 mA

3. APPROVAL

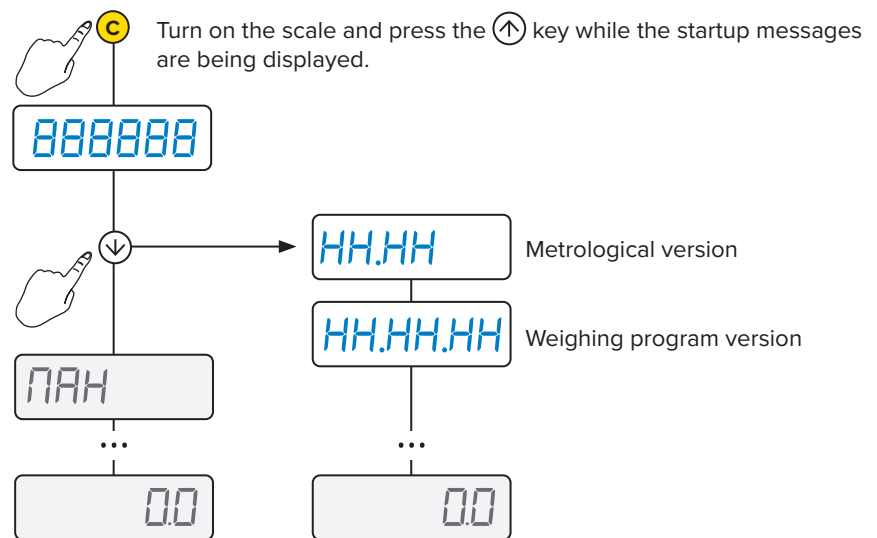


How to display the metrological version of the instrument

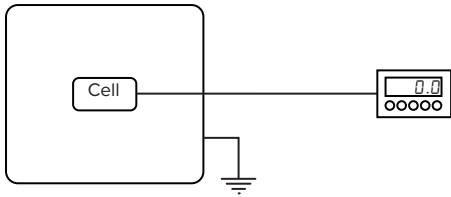
1. Turn off the scale



2. Follow the procedure:

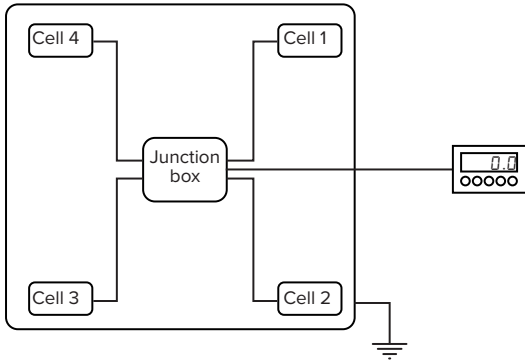


4. CONNECTIONS

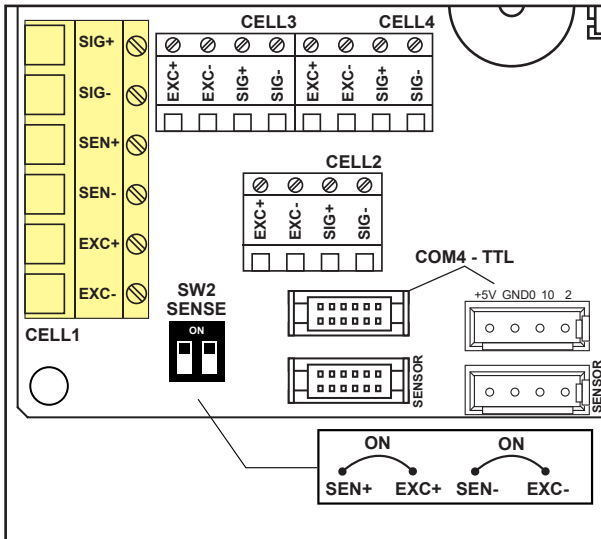


Single-channel

Connect the scale to the main terminal block using the first reading channel of the A/D converter.



Reference terminal block for 1-channel connection



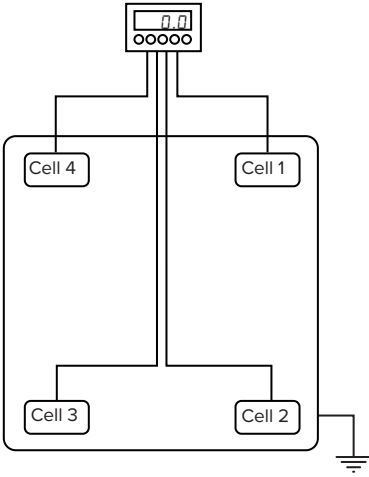
NOTES:

- For 6-wire connection with "Sense", set the dip switches to OFF.
- For 4-wire connection, set the dip switches to ON.



WARNING:

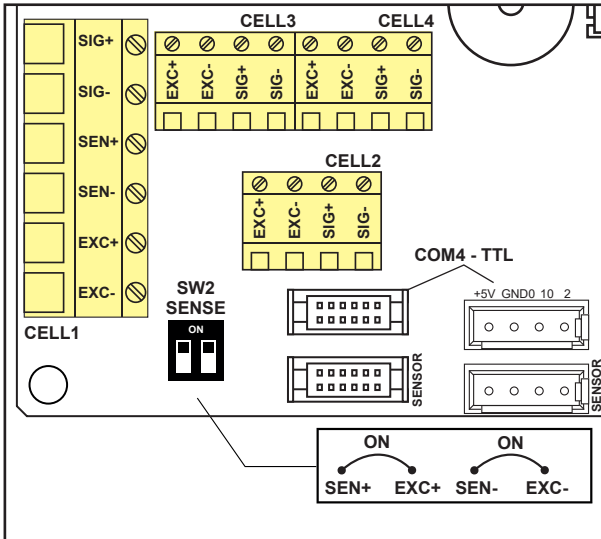
Make connections with indicator off and power supply disconnected. Comply with the electronic specifications indicated in the table on page 4



Multi-channel with digital equalisation

The 4 channels of the converter can be used to connect 2, 3 or 4 cells, digitally equalising them without using junction boxes.

Reference terminal blocks for 4-channel connection



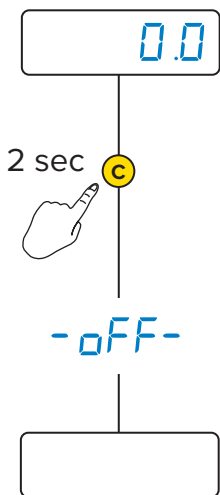
NOTES:

- Set the dip switches to ON

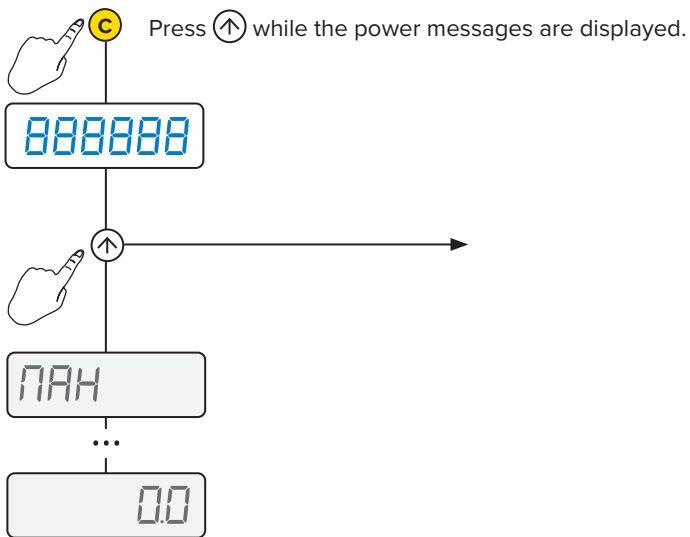
5. PROGRAMMING

How to access the programming menu

1. Turn off the scale



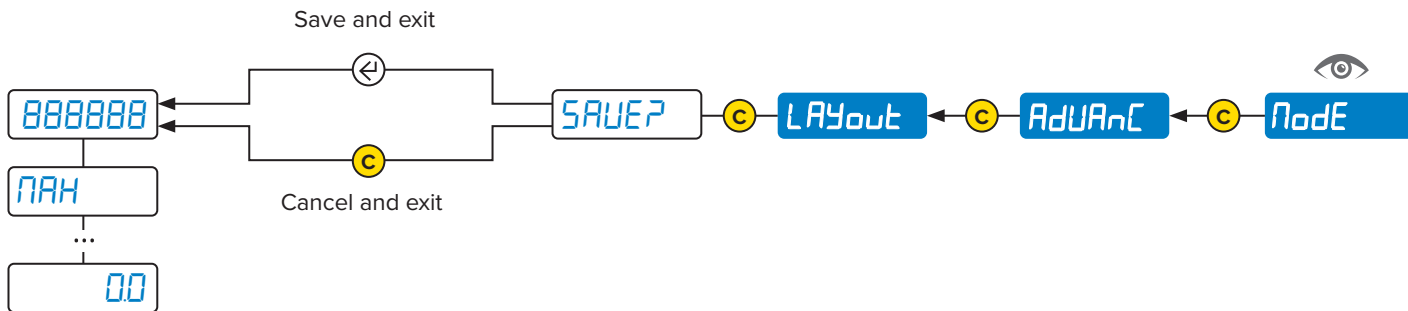
2. Follow the procedure:



How to save the programming and exit the menu











To save the programming changes made, press button **C** repeatedly while navigating the menu backwards, until the message **SAVEP** appears: press \leftarrow to save or **C** to exit without saving.

Example (read from right to left):





PROGRAMMING MENU

	CAL	Calibration	14
	↓		
	0.CAL	Zeroing the pre-tare (zero calibration)	15
	↓		
	GrAV	Area of gravity of the place of use	15
	↓		
	SERIAL	Configuration of the serial ports	16
	↓		
	LAYout	Print customisation	23
	↓		
	FILtEr	Weighing filter	31
	↓		
	SCrEEn	Adjusting the display	32
	↓		
	bAtt	Battery use	33
	↓		
	ECo.bAt	Energy saving	33
	↓		
	AutoFF	Auto switch-off	34
	↓		
	rENotE	Using the remote control	34
	↓		
	An.out	Analogue output	35
	↓		
	inPutS	Digital inputs	37
	↓		
	outPut	Digital outputs	38
	↓		
	rESEt	Factory configuration reset	39
	↓		
	dIAG	Diagnostics	39
	↓		
	AdVAnC	Advanced	40

 Parameter visible only under certain conditions.

 Parameter or menu subject to approval.



MENU

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit

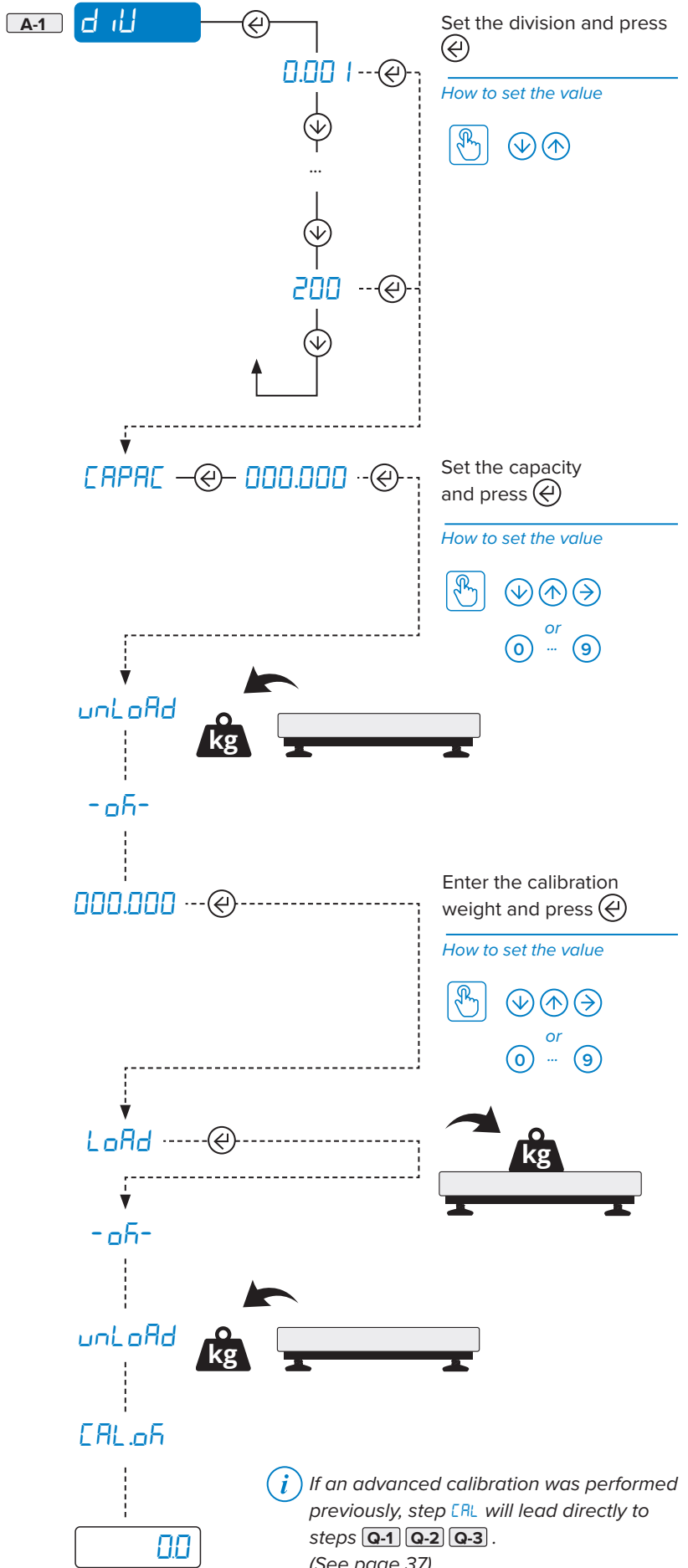


Page 9

- A **CAL**
- B **0.CAL** ¹ **d iU**
- C **GrAU**
- D **SEr iAL**
- E **LAYout**
- F **F iLteR**
- G **SCrEEen**
- H **bAtte**
- I **ECobAt**
- J **AutoFF**
- K **rENotE**
- L **An.out**
- M **inPutS**
- N **outPut**
- O **rESEt**
- P **d iAG**
- Q **AdUAnC**

CAL Quick calibration

Start of the calibration procedure:



MENU

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

A CAL

B **D.CAL**

C **GrAU**

D SEr iAL

E LAYout

F FILtEr

G SCrEEen

H bAtt

I ECobAt

J AutoFF

K rENotE

L An.out

M inPutS

N outPut

O rESEt

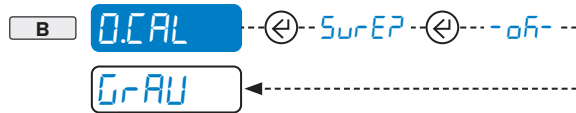
P d iAG

Q AdUAnC

D.CAL Zeroing the pre-tare



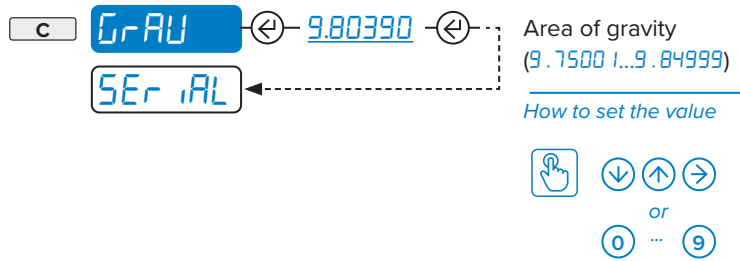
Acquisition of the zero point



GrAU Area of gravity of the place of use



Once the calibration is completed, for proper operation set the area of use in this pitch (if different from that of calibration).



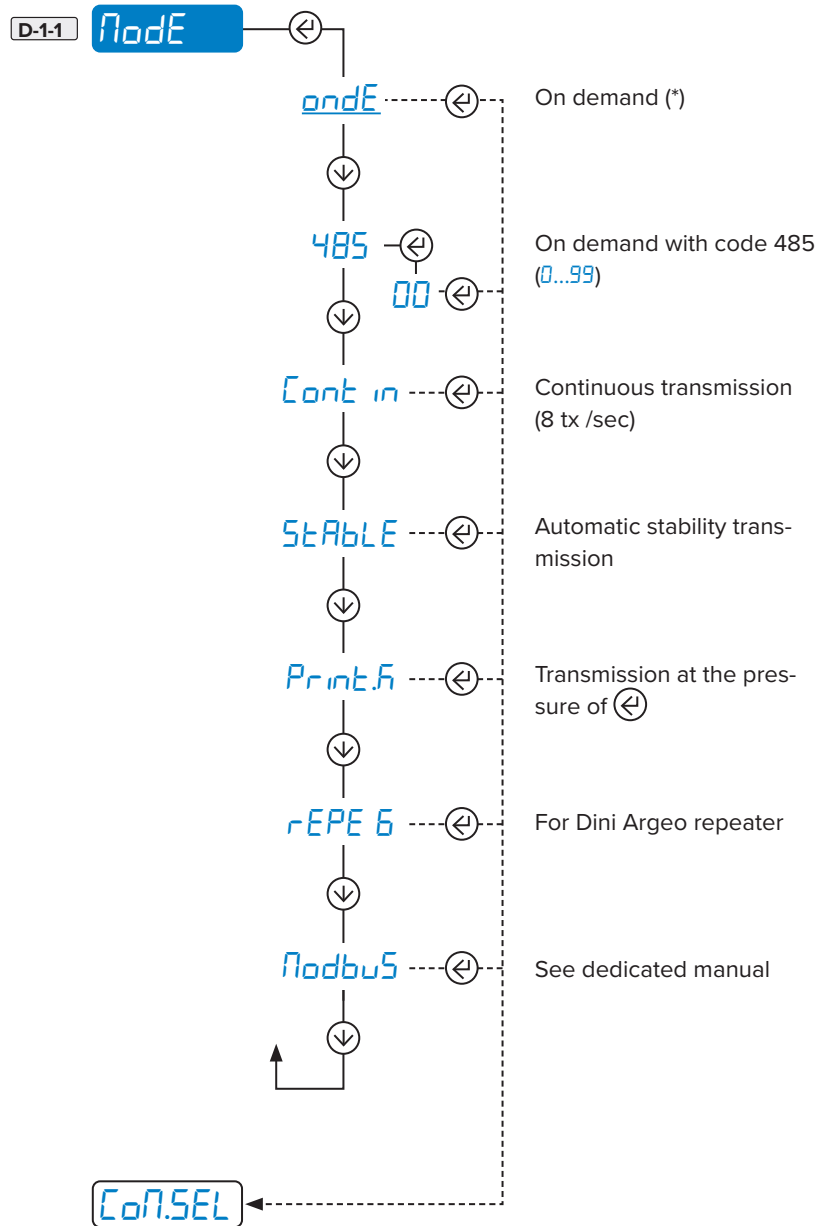
How to enter	How to browse	How to save and exit
1. Off	↑ =	
2. On	↓ =	
3.	→ =	
Page 9	← =	

- A CAL
 - B D.CAL
 - C GrAU
 - D **SERIAL**
 - E LAYout
 - F FILTER
 - G SCrEEEn
 - H bAtt
 - I ECobAtt
 - J AutoFF
 - K rENotE
 - L An.out
 - M inPutS
 - N outPut
 - O rESEt
 - P d iAG
 - Q AdUAnC
-
- Navigation path from SERIAL:
- 1. CoN.PC
 - 2. CoN.Prn
 - 3. AuH.1
 - 4. AuH.2
 - 5. uSb
 - 6. AdUAnC
-
- Navigation path from CoN.PC:
- 1. Node
 - 2. ProtoC
 - 3. CoN.SEL
 - 4. bAud
 - 5. bit

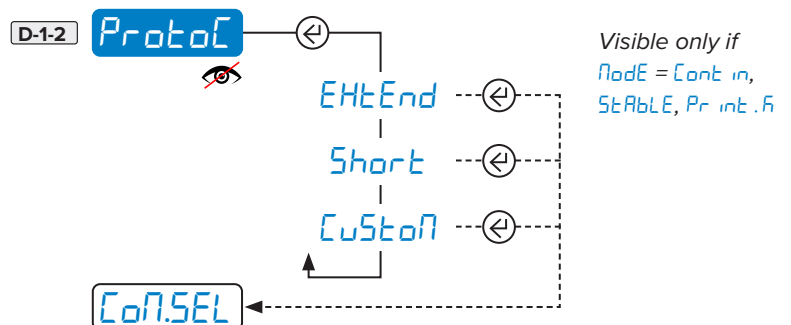
SERIAL Configuration of the serial ports

CoN.PC Communication with PC, PLC or Repeater

Selection of the communication mode



Selection of the protocol:



For available protocols see page 44.



MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

A CAL

B D.CAL

C GrAU

D SEr iAL

E LAYout

F iLteR

G SCrEEEn

H bAtt

I ECobAtt

J AutoFF

K rENotE

L An.out

M inPutS

N outPut

O rESEt

P d iAG

Q AdUAnC

1 CoN.PC

2 CoN.Prn

3 AuH.1

4 AuH.2

5 uSb

6 AdUAnC

1 Node

2 ProtoC

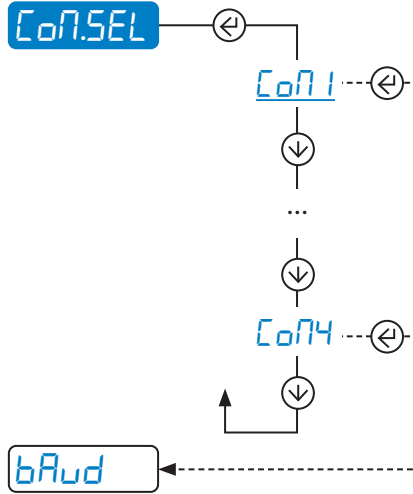
3 CoN.SEL

4 bAud

5 b it

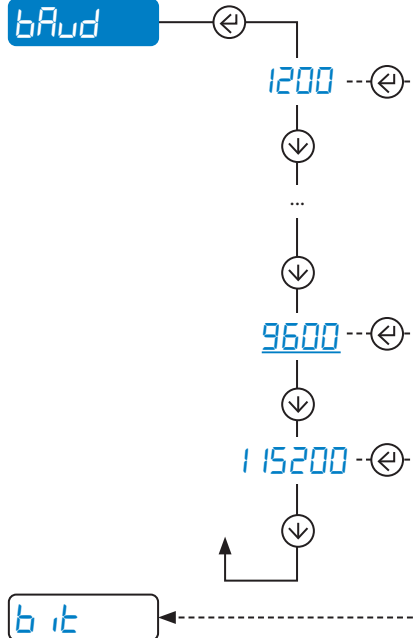
COM port selection for PC / PLC connection

D-1-3



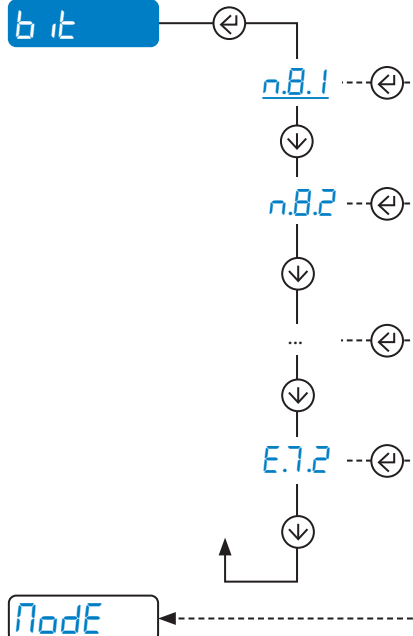
Communication speed (Baud rate)

D-1-4



Configuration of the serial protocol

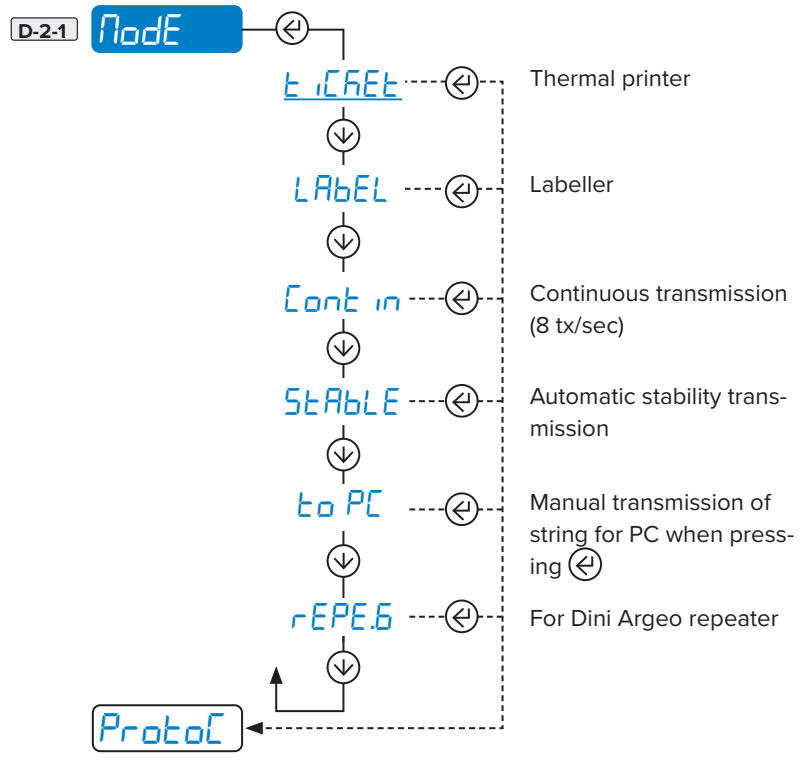
D-1-5



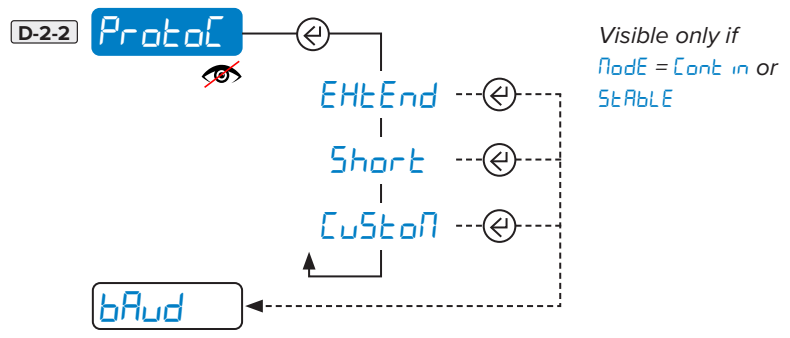
How to enter	How to browse	How to save and exit
1. Off	↑ =	
2. On	↓ =	
3.	→ =	
Page 9	← =	

Navigation menu showing options A through Q. The path taken is: A [CAL] → D [SERIAL] → 1 [CoN.PC] → 2 [CoN.Prn] → 1 [Node] → 2 [ProtoC] → 3 [bAud].

Selection of the communication mode

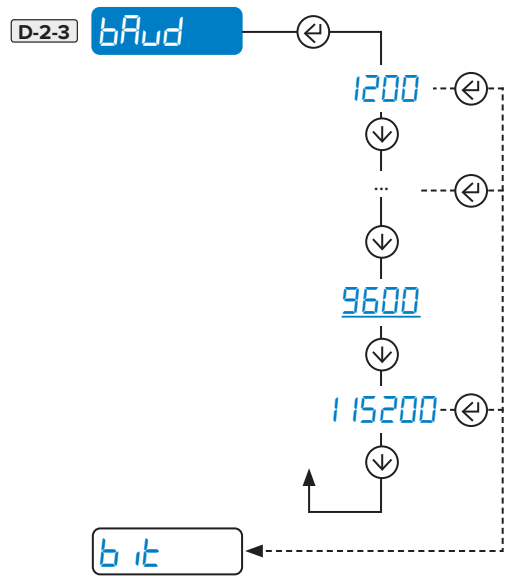


Selection of the protocol:



For available protocols see page 44.

Communication speed (Baud rate)





MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

A **CAL**

B **OCAL**

C **GrAU**

D **SERIAL**

E **LAYout**

F **FILtEr**

G **SCrEEEn**

H **bAtt**

I **ECobAtt**

J **AutoFF**

K **rENotE**

L **An.out**

M **inPutS**

N **outPut**

O **rESEt**

P **dIAG**

Q **AdVAnC**

1 **CoN.PC**

2 **CoN.Prn**

3 **AuH.1**

4 **AuH.2**

5 **uSb**

6 **AdVAnC**

1 **Node**

2 **ProtoC**

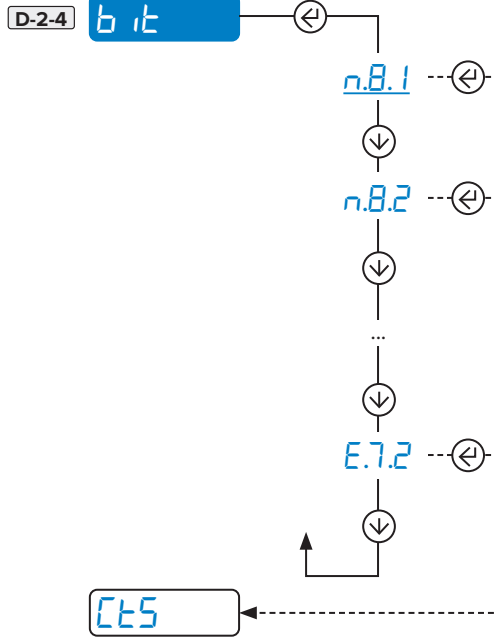
3 **bAud**

4 **b it**

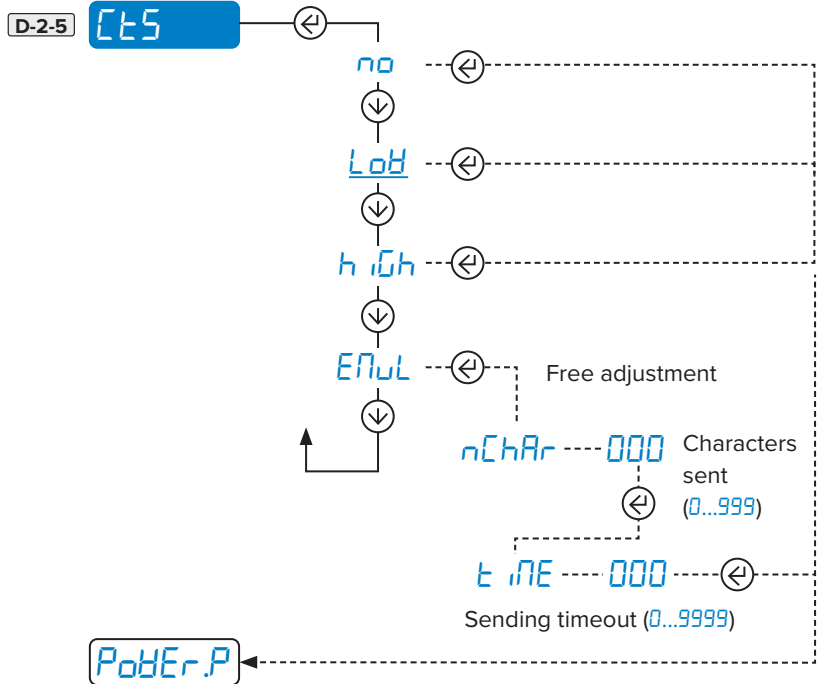
5 **CtS**

6 **POdEr.P**

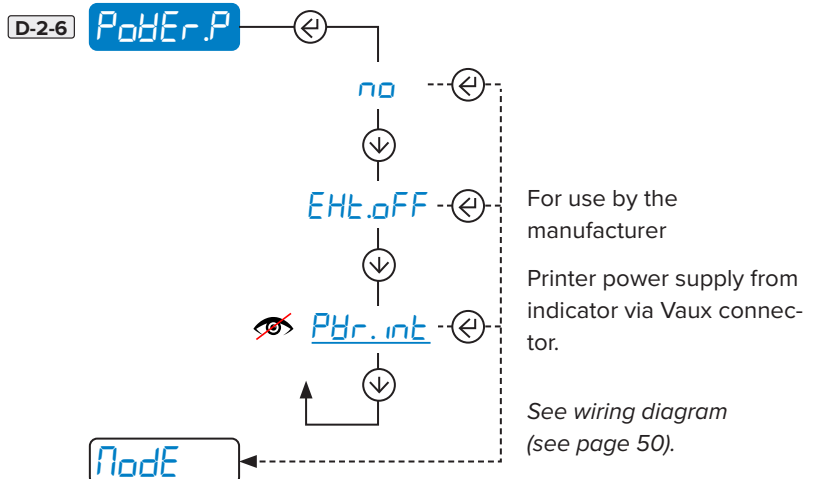
Configuration of the serial protocol



Printer control signal



Printer power supply / Radio-frequency module





MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



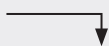
Page 9

A **CAL**

B **D.CAL**

C **GrAU**

D **SERIAL**



E **LAYout**

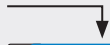
1 **CoN.PC**

F **FILtEr**

2 **CoN.Prn**

G **SCrEEen**

3 **AuH.1**



H **bAtt**

4 **AuH.2**

1 **Node**

I **ECobAt**

5 **uSb**

2 **ProtoC**

J **AutoFF**

6 **AdUAnC**

3 **bAud**

K **rENotE**

4 **bit**

L **An.out**

M **inPutS**

N **outPut**

O **rESEt**

P **dIAG**

Q **AdUAnC**

AuH. 1 - AuH.2 Auxiliary ports

Selection of the communication mode

D-3-1

Node

D-4-1

Node

ondE

485

Cont in

StAbLE

Pr int .h

rEPE .6

ProtoC

On demand (*)

On demand with code 485
(0...99)

Continuous transmission
(8 tx /sec)

Automatic stability
transmission

Transmission at the
pressure of

For Dini Argeo repeater

Selection of the protocol:

D-3-2

ProtoC

D-4-2

EHtEnd

Short

CuStoñ

bAud

For available protocols see page 44.

Communication speed (Baud rate)

D-3-3

bAud

D-4-3

1200

9600

115200

bit





MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

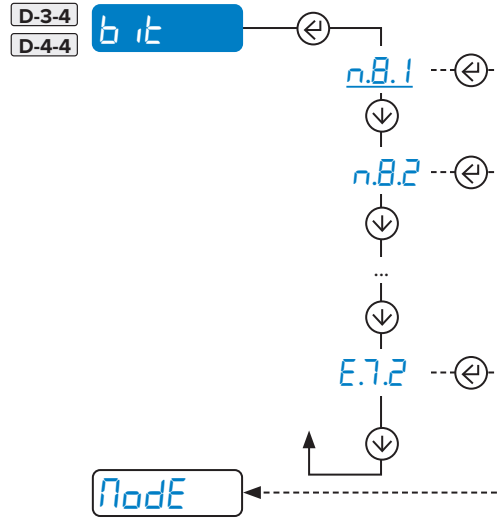
How to save and exit



Page 9

- A **CAL**
- B **D.CAL**
- C **GrAU**
- D **SERIAL**
 - 1 **CoN.PC**
 - 2 **CoN.Prn**
 - 3 **AuH.1**
 - 1 **Node**
 - 2 **ProtoC**
 - 3 **bAud**
 - 4 **b it**
 - 4 **AuH.2**
 - 5 **uSb**
 - 6 **AdUAnC**
- E **LAYout**
- F **F ILtEr**
- G **SCrEEEn**
- H **bAtE**
- I **ECobAt**
- J **AutoFF**
- K **rENotE**
- L **An.out**
- M **inPutS**
- N **outPut**
- O **rESEt**
- P **d iAG**
- Q **AdUAnC**

Configuration of the serial protocol



uSb USB port

For manufacturer use only.

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

A CAL

B D.CAL

C GrAU

D SEr AL

E LAYout

F ILtEr

G SCrEEr

H bAtt

I ECobAt

J AutoFF

K rENotE

L An.out

M inPutS

N outPut

O rESEt

P d iAG

Q AdUAnC

1 CoN.PC

2 CoN.Prn

3 AuH.1

4 AuH.2

5 uSb

6 AdUAnC

1 rAd io

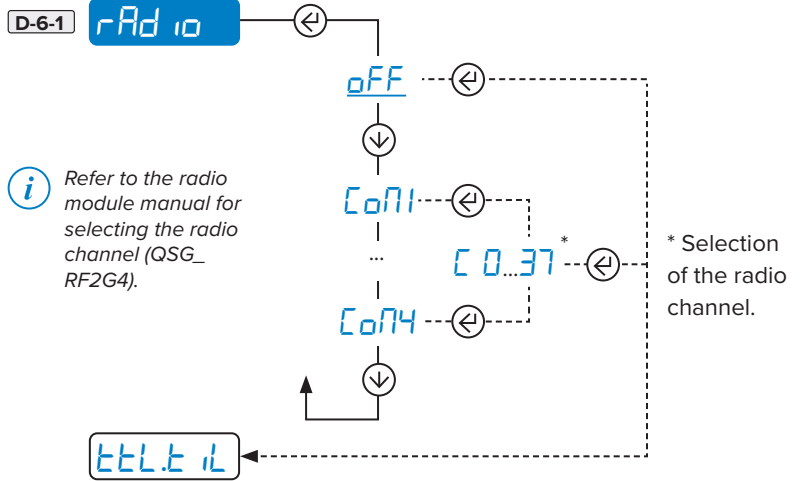
2 tLt.t lL

3 tErn

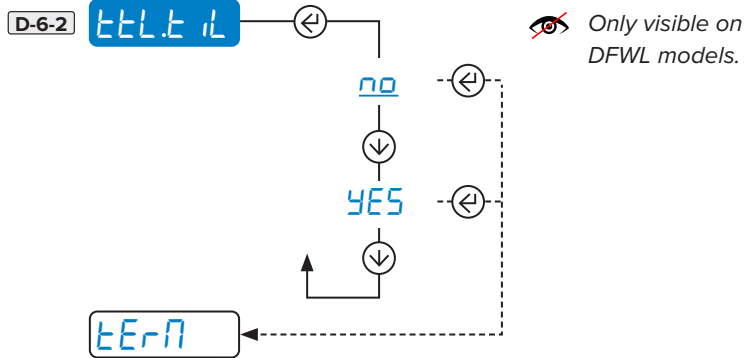
4 iGnorE

AdUAnC Advanced configurations

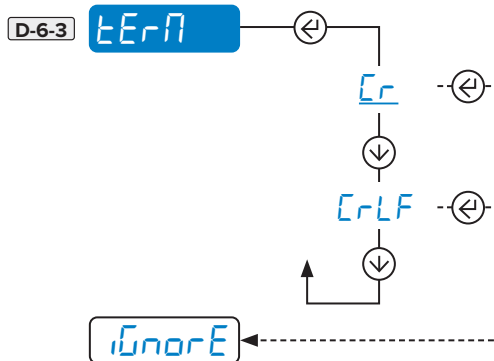
Connection port of radio-frequency module (for use by the manufacturer)



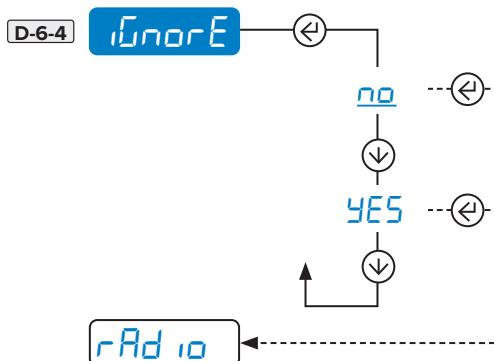
TTL port / inclinometer activation (for use by the manufacturer)



Closing character of each print line



Ignore unknown commands



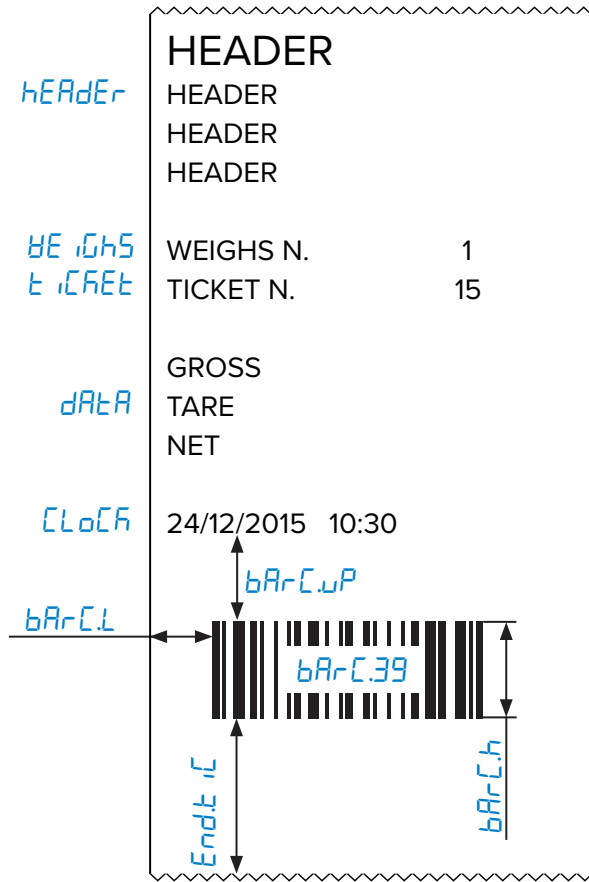
i When an unknown command is sent:

- Selecting NO will result in the response "ERR04".
- Selecting YES ignores the command (no response).

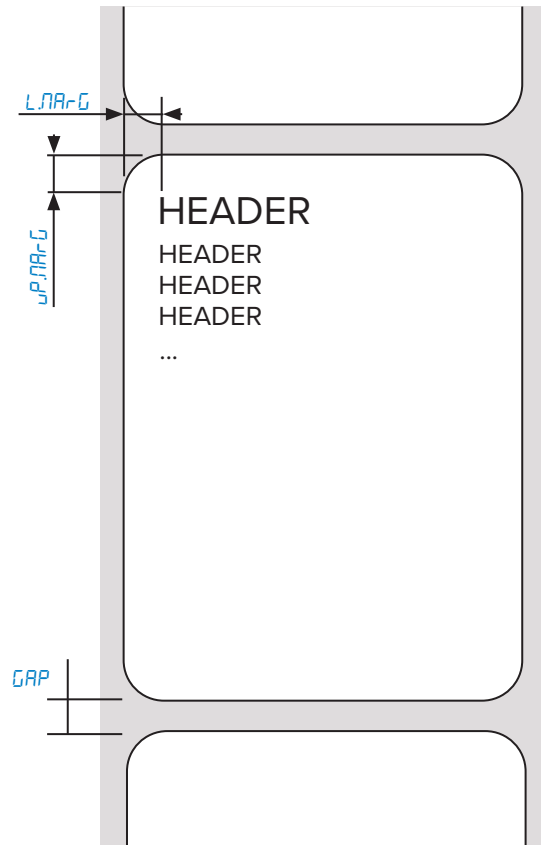
Parameters for ticket/label mode

How to enter	How to browse	How to save and exit
1. Off	↑ =	 Page 9
2. On	↓ =	
3.	→ =	
Page 9	← =	

- A
- B
- C
- D
- E →
- F 1
- G 2
- H 3
- I 4
- J 5
- K 6
- L 7
- M 8
- N 9
- O 10
- P 11
- Q 12
- 13
- 14
- 15
- 16
- 17
- 18



Additional parameters for label mode





MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

A CAL

B SERIAL

C GRAU

D SERIAL

E LAYOUT

F FILTER

G SCREEN

H BATT

I ECOBAT

J AUTOFF

K RENOTE

L ANOUT

M INPUTS

N OUTPUT

O RESET

P DIAG

Q ADVANC

1 LANG

2 CHAR

3 HEADER

4 DATA

5 BEGINS

6 TICKETS

7 CLOCKS

8 BARC39

9 BARCUP

10 BARCL

11 BARCh

12 BARCdt

13 COPIES

14 END TIC

15 BLINÉ

16 LABEL

17 LB.SAVE

18 TEST

Print language settings

E-1

LANG

EnGL

GrEH

CHAR

- ITAL
- EnGL
- dEut
- FRAn
- ESPA
- Ch inES
- Port
- GrEH

Font dimensions

E-2-1

CHAR 1

Main font

Label mode

Font.1

1 x 1,5 mm

Font.1d

1 x 3 mm

Font.2

1,5 x 2,5 mm

Font.2d

1,5 x 5 mm

Font.3

2 x 3 mm

Font.3d

2 x 6 mm

Font.4

3 x 4 mm

Font.4d

3 x 8 mm

Font.5

4 x 6 mm

Font.5d

4 x 12 mm

Ticket mode

normal

double

CHAR 2

E-2-2

CHAR 2

See CHAR 1



MENU

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

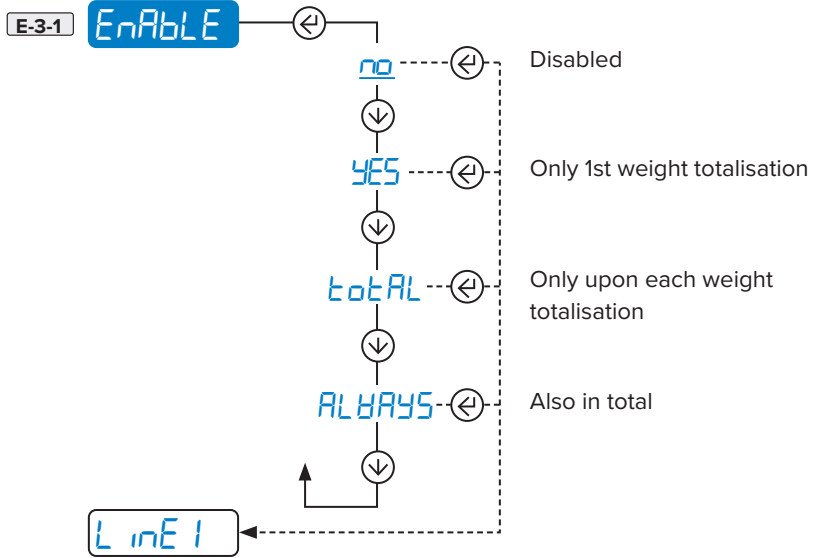
How to save and exit



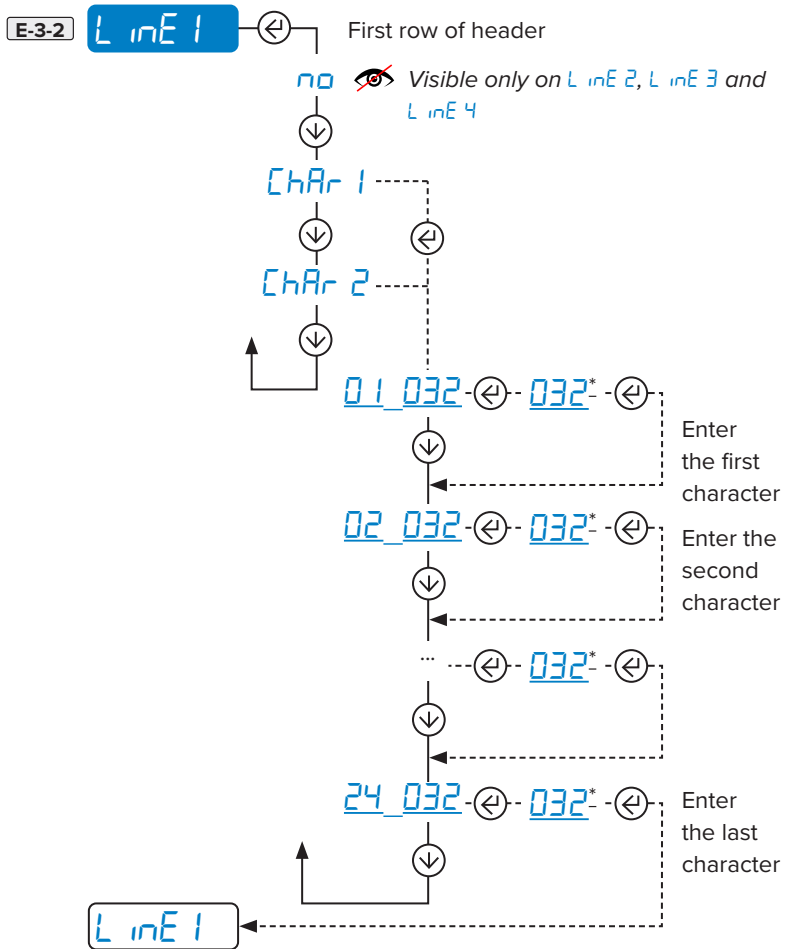
Page 9

- A **CAL**
- B **DCAL**
- C **GRAU**
- D **SERIAL**
- E **LAYOUT**
- F **FILTER**
 - 1 **LANG**
- G **SCREEN**
 - 2 **CHAR**
- H **BATT**
 - 3 **HEADER**
- I **ECOBAT**
 - 4 **DATA**
 - 1 **ENABLE**
 - 2 **LINE 1**
 - 3 **LINE 2**
 - 4 **LINE 3**
 - 5 **LINE 4**
- J **AUTOFF**
 - 5 **WEIGHTS**
- K **RENOTE**
 - 6 **TCRET**
- L **ANOUT**
 - 7 **LOCAL**
- M **INPUTS**
 - 8 **BARC39**
- N **OUTPUT**
 - 9 **BARCUP**
- O **RESET**
 - 10 **BARCL**
- P **DIAG**
 - 11 **BARCh**
- Q **ADVANC**
 - 12 **BARCdt**
 - 13 **COPIES**
 - 14 **ENDtIC**
 - 15 **bLINE**
 - 16 **LABEL**
 - 17 **LBSAVE**
 - 18 **TEST**

Enables header printing



Contents of the header lines



How to set the value



Repeat the operation to program **LINE 2**, **LINE 3** and **LINE 4**. Select **no** to disable them.

MENU

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

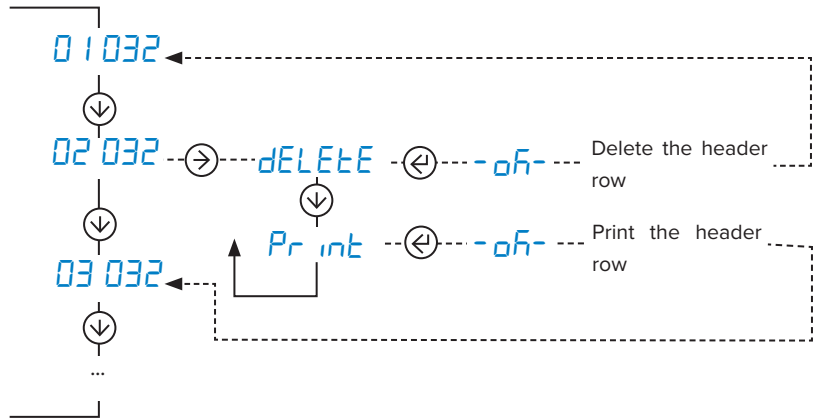
How to save and exit



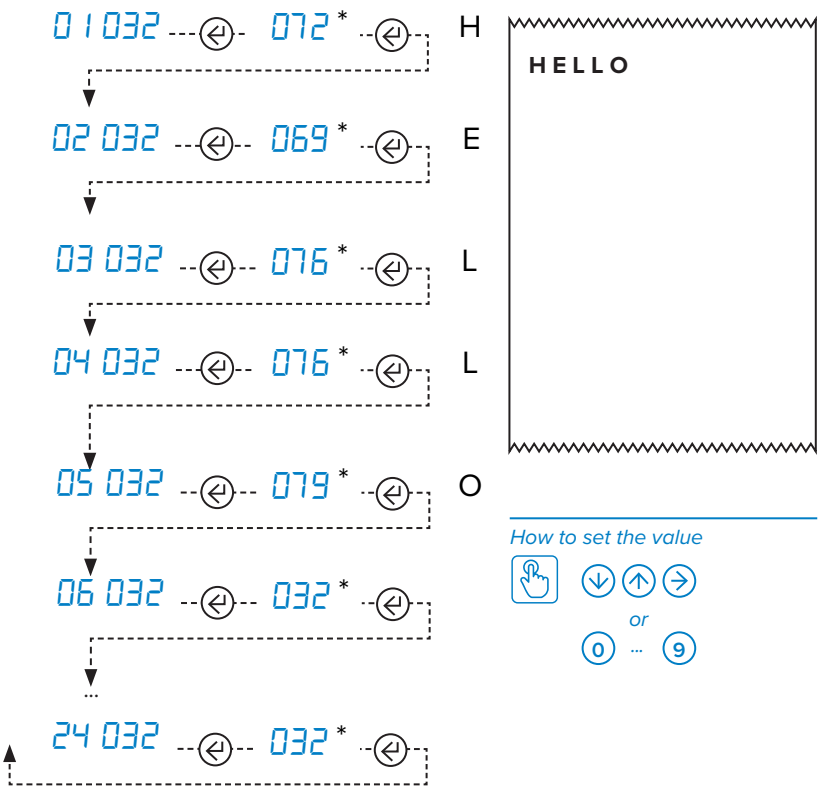
Page 9

- A **CAL**
- B **D.CAL**
- C **GrAU**
- D **SEr iAL**
- E **LAYout**
- F **F iLteR**
 - 1 **LAnG**
- G **SCrEEen**
 - 2 **ChAr**
- H **bAtt**
 - 3 **hEAdEr**
- I **ECobAtt**
 - 4 **dAtA**
 - 1 **EnAbLE**
 - 2 **LiNE1**
 - 3 **LiNE2**
 - 4 **LiNE3**
 - 5 **LiNE4**
- J **AutoFF**
 - 5 **BEtHS**
- K **rENotE**
 - 6 **t iChEt**
- L **An.out**
 - 7 **CLoCh**
- M **inPutS**
 - 8 **bArCL39**
- N **outPut**
 - 9 **bArCLuP**
- O **rESEt**
 - 10 **bArCL**
- P **d iAG**
 - 11 **bArCLh**
- Q **AdUAnC**
 - 12 **bArCLdt**
 - 13 **CoP iES**
 - 14 **End.t iC**
 - 15 **bLiNE**
 - 16 **LABEL**
 - 17 **LB.SAVE**
 - 18 **tEST**

How to print / delete the row being programmed



Programming example



How to set the value



(*) List of characters

32		47	/	62	>	77	M	92	\	107	k	122	z
33	!	48	0	63	?	78	N	93	]	108	l	123	{
34	"	49	1	64	@	79	O	94	^	109	m	124	|
35	#	50	2	65	A	80	P	95	_	110	n	125	}
36	\$	51	3	66	B	81	Q	96	'	111	o	126	~
37	%	52	4	67	C	82	R	97	a	112	p		
38	&	53	5	68	D	83	S	98	b	113	q		
39	'	54	6	69	E	84	T	99	c	114	r		
40	(	55	7	70	F	85	U	100	d	115	s		
41	)	56	8	71	G	86	V	101	e	116	t		
42	*	57	9	72	H	87	W	102	f	117	u		
43	+	58	:	73	I	88	X	103	g	118	v		
44	,	59	;	74	J	89	Y	104	h	119	w		
45	-	60	<	75	K	90	Z	105	i	120	x		
46	.	61	=	76	L	91	[	106	j	121	y		





MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

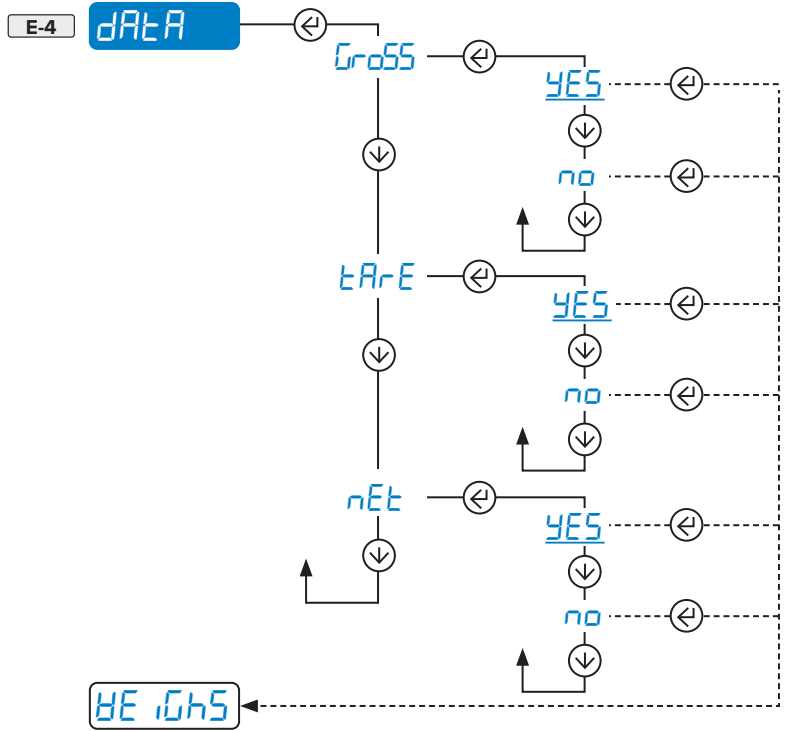
How to save and exit



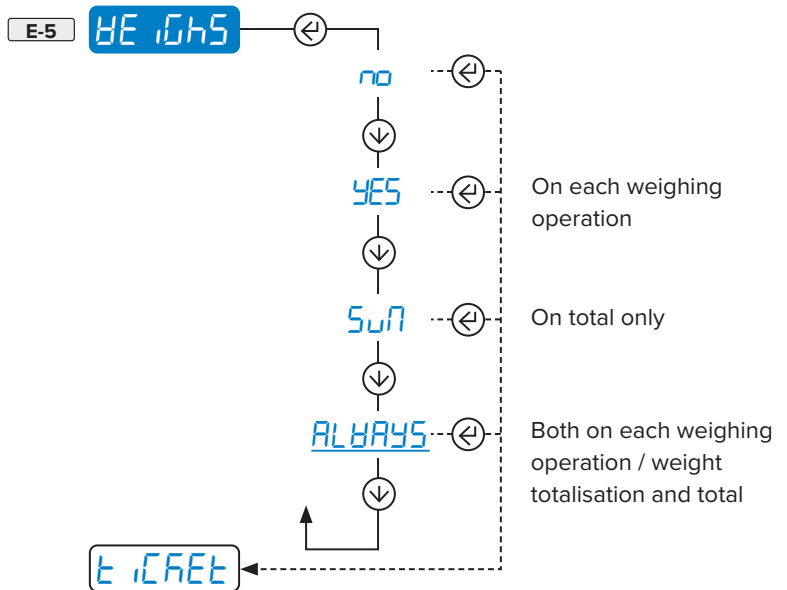
Page 9

- A **CAL**
- B **OCAL**
- C **GRAU**
- D **SERIAL**
- E **LAYOUT**
- F **FILTER**
 - 1 **LANG**
- G **SCREEN**
 - 2 **CHAR**
- H **BATT**
 - 3 **HEADER**
- I **ECOBAT**
 - 4 **DATA**
- J **AUTOFF**
 - 5 **WEIGHS**
- K **RENOTE**
 - 6 **TCRET**
- L **ANOUT**
 - 7 **CLOCK**
- M **INPUTS**
 - 8 **BARC39**
- N **OUTPUT**
 - 9 **BARCUP**
- O **RESET**
 - 10 **BARCL**
- P **DIAG**
 - 11 **BARCh**
- Q **ADVANC**
 - 12 **BARCdt**
 - 13 **COPIES**
 - 14 **ENDtIC**
 - 15 **BLINtE**
 - 16 **LABEL**
 - 17 **LB.SAVE**
 - 18 **tEST**

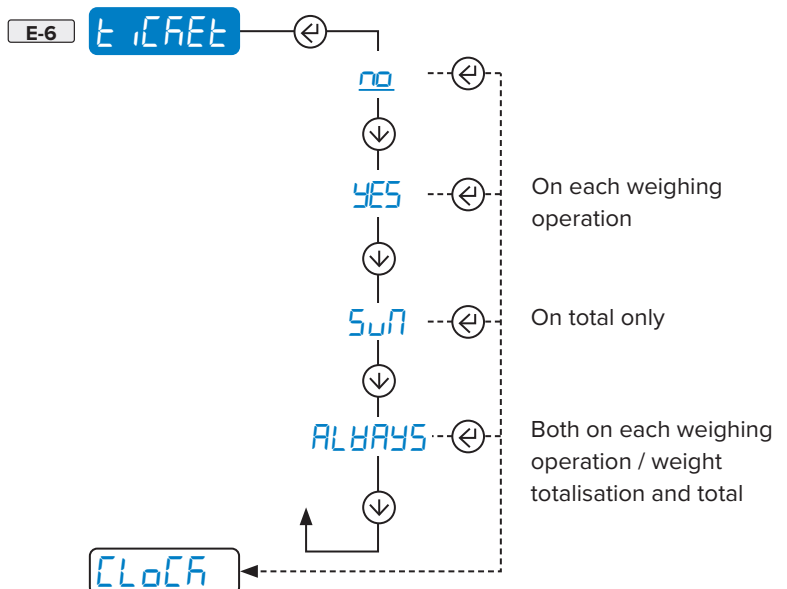
Selection of the weight data



Progressive weighed



Ticket/label progressive





MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

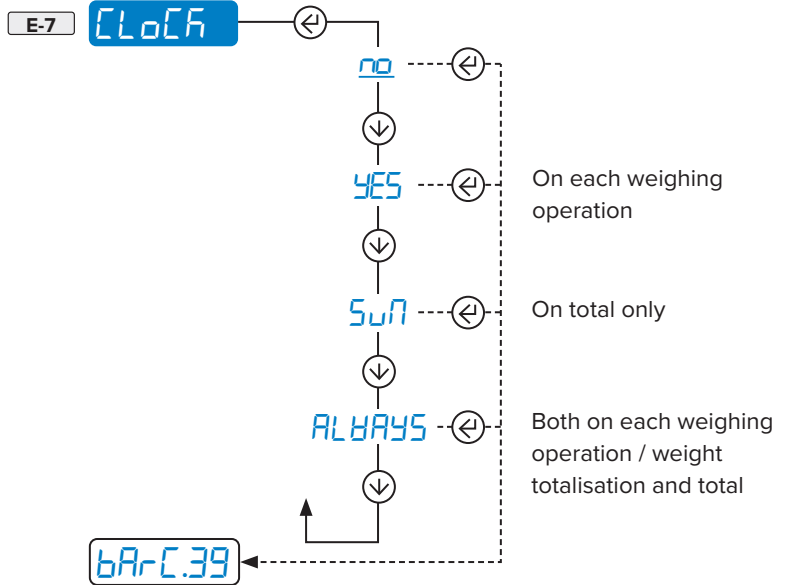
How to save and exit



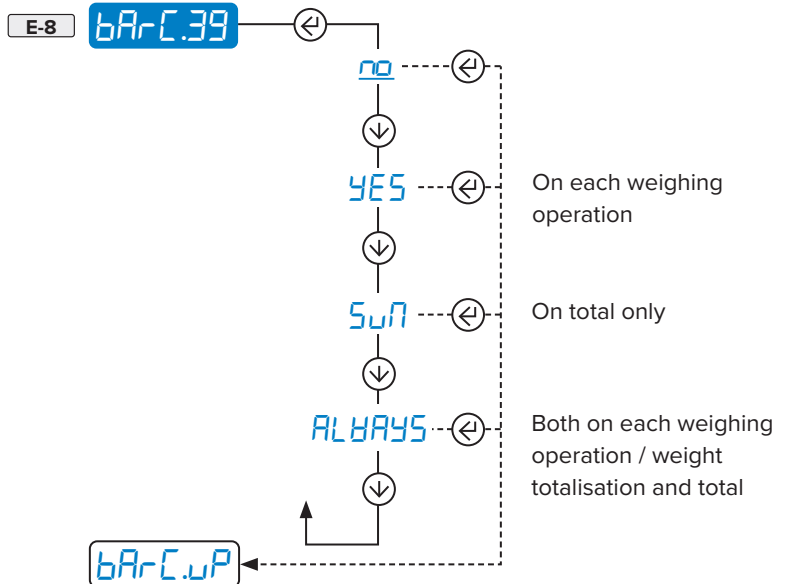
Page 9

- A **CAL**
- B **O.CAL**
- C **GrAU**
- D **SERIAL**
- E **LAYout**
- F **FILtEr**
 - 1 **LANg**
- G **SCrEEen**
 - 2 **ChAR**
- H **bARt**
 - 3 **hEAdEr**
- I **ECobARt**
 - 4 **dAtA**
- J **AutOFF**
 - 5 **WEIGHs**
- K **rENotE**
 - 6 **t.CREt**
- L **An.out**
 - 7 **CLoCh**
- M **inPutS**
 - 8 **bARc.39**
- N **outPut**
 - 9 **bARc.uP**
- O **rESEt**
 - 10 **bARc.L**
- P **d.IAG**
 - 11 **bARc.h**
- Q **AdVAnC**
 - 12 **bARc.dt**
 - 13 **CoP.iES**
 - 14 **End.t.C**
 - 15 **b.L.inE**
 - 16 **LABEL**
 - 17 **LB.SAVE**
 - 18 **t.ESt**

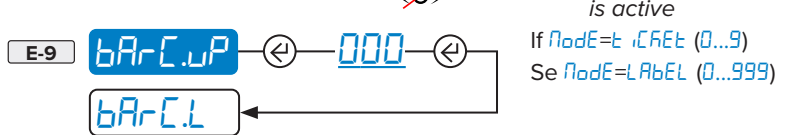
Date and time



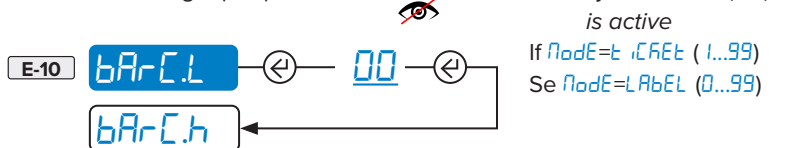
Bar code 39



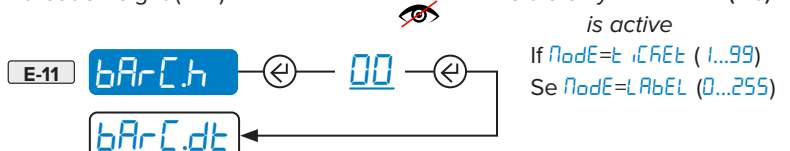
Barcode top margin (mm)



Barcode left margin (mm)



Barcode height (mm)





MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



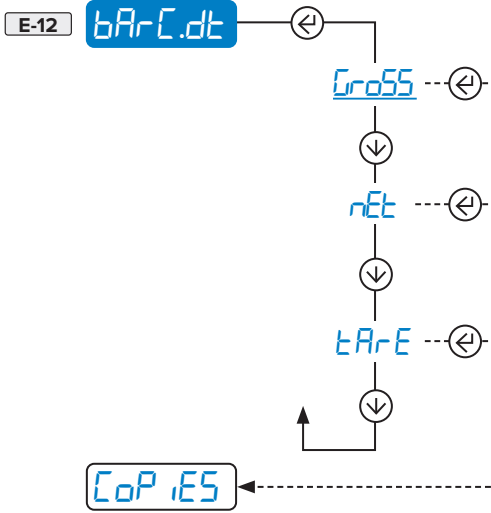
Page 9

- A **CAL**
- B **O.CAL**
- C **GrAU**
- D **SERIAL**
- E **LAYout**
- F **FILtEr**
 - 1 **LANG**
- G **SCrEEEn**
 - 2 **CHAR**
- H **bAtt**
 - 3 **HEAdEr**
- I **ECobAtt**
 - 4 **dAtA**
- J **AutoFF**
 - 5 **WEIGHs**
- K **rENotE**
 - 6 **t.CREt**
- L **An.out**
 - 7 **CLoCh**
- M **inPutS**
 - 8 **bArC.39**
- N **outPut**
 - 9 **bArC.uP**
- O **rESEt**
 - 10 **bArCL**
- P **dIAG**
 - 11 **bArCh**
- Q **AdVAnC**
 - 12 **bArC.dt**
 - 13 **CoP iES**
 - 14 **End.t iC**
 - 15 **b.L inE**
 - 16 **LABEL**
 - 17 **LB.SAVE**
 - 18 **tEST**

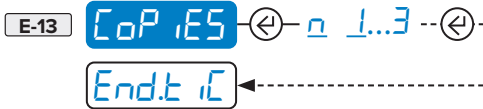
Selection of the weight data



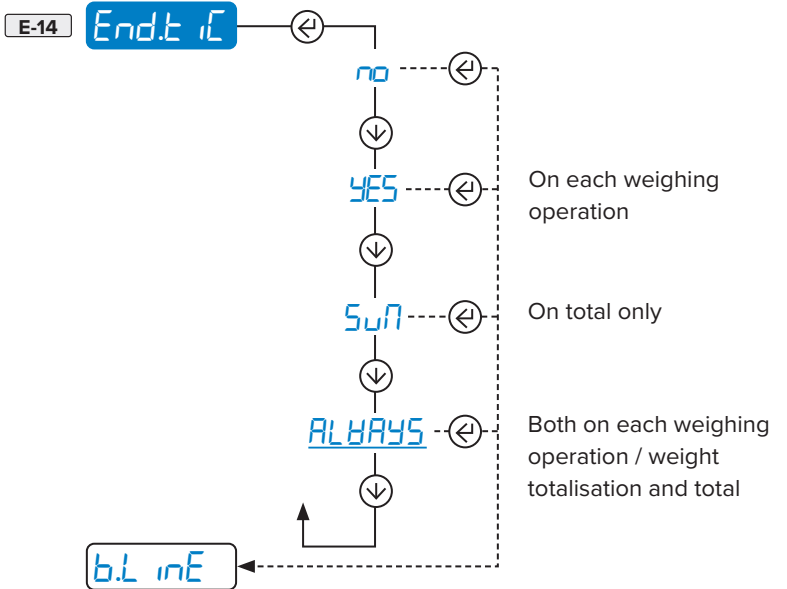
Visible only if **bArC.39** (E-8) is active



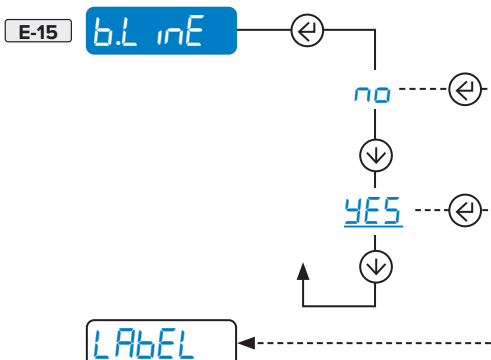
Multi-copy prints



Paper outlet for end of ticket/receipt



White print head preheating line (thermal printer only)





MENU

How to enter

- Off
- On
-

Page 9

How to browse

- =
- =
- =
- =

How to save and exit

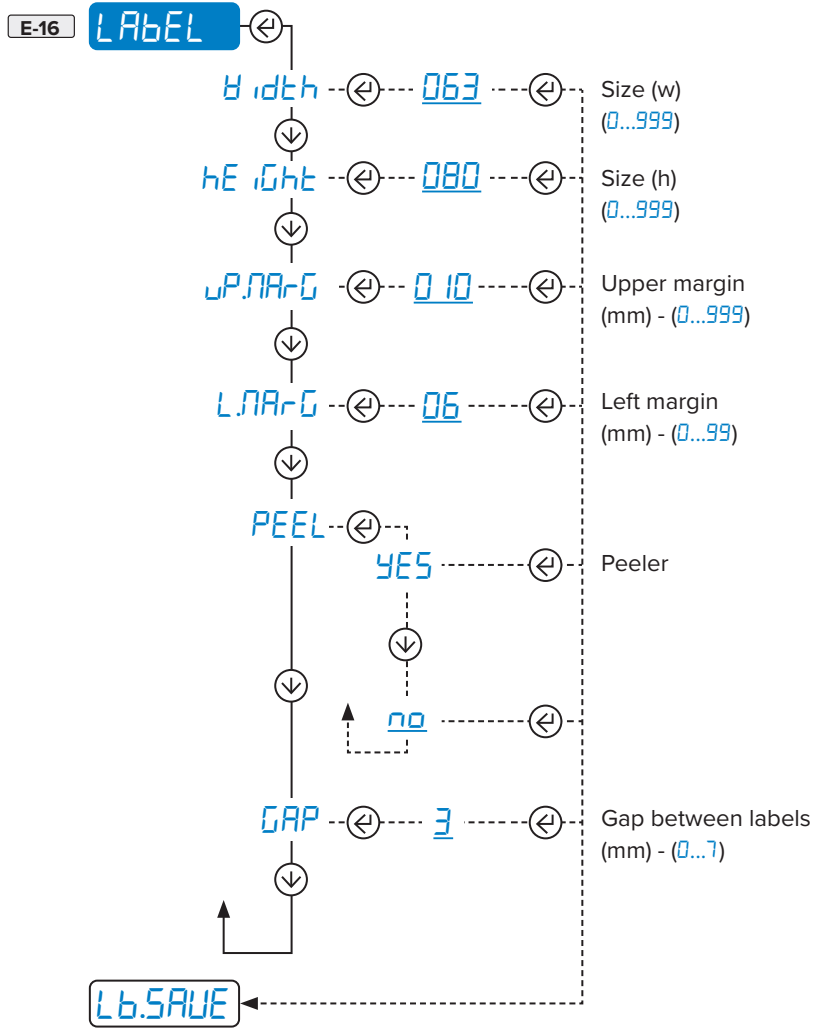


Page 9

- A **CAL**
- B **OCAL**
- C **GRAU**
- D **SERIAL**
- E **LAYOUT**
- F **FILTER**
 - 1 **LANG**
- G **SCREEN**
 - 2 **CHAR**
- H **BATT**
 - 3 **HEADER**
- I **ECOBATT**
 - 4 **DATA**
- J **AUTOFF**
 - 5 **HEIGHTS**
- K **RENOTE**
 - 6 **HEIGHT**
- L **ANOUT**
 - 7 **CLOCK**
- M **INPUTS**
 - 8 **BARCL39**
- N **OUTPUT**
 - 9 **BARCLUP**
- O **RESET**
 - 10 **BARCL**
- P **DIAG**
 - 11 **BARCLH**
- Q **ADVANC**
 - 12 **BARCLDT**
 - 13 **COPIES**
 - 14 **ENDTIC**
 - 15 **BLINÉ**
 - 16 **LABEL**
 - 17 **Lb.SAVE**
 - 18 **TEST**

Label configuration

Only visible if $\text{MODE (D-2-1)} = \text{LABEL}$

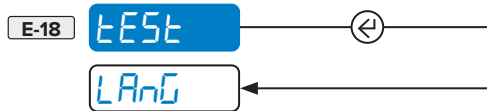


Saving labels in printer memory (only for label mode)



Visible only if $\text{MODE (D-2-1)} = \text{LABEL}$

Test print ALL FORMATS











How to enter

1. Off 
2. On 
3. 

 Page 9


How to browse

-  = 
-  = 
-  = 
-  = 

How to save and exit



 Page 9

- A CAL
- B O.CAL
- C GrAU
- D SEr AL
- E LAYout
- F Filter 
- G SCrEEen **1 F 1**
- H bAtt **2 F 2**
- I ECobAtt **3 F 3**
- J AutoFF **4 F 4**
- K rENotE **5 F 5**
- L An.out **6 F 6**
- M inPutS **7 F 7**
- N outPut **8 F 8**
- O rESEt **9 F 9**
- P d iAG **10 F 10**
- Q AdvAnc **11 CUsTon**

FILTER Weighing filters



To change the responsiveness of the scale.
This is useful to adjust the scale according to your needs.

With an approved instrument, it is not possible to change the filter.



Foreword:

“F 10” represents the lowest filtering incidence.

By increasing the incidence, the weight becomes more stable.

It is advisable to carry out several weighing operations by changing the incidence until the best compromise between responsiveness and stability is achieved.

F-1 F 1 Filter at 5 Hz.

F-2 F 2 Filter at 10 Hz.

F-3 F 3 Filter at 20 Hz.


F-4 F 4 Filter at 40 Hz.

F-5 F 5 Filter at 80 Hz.


F-6 F 6 Filter at 160 Hz.

F-7 F 7 Filter at 325 Hz.


F-8 F 8 Filter at 650 Hz.

 Only visible if
n.ChAn < 3

F-9 F 9 Filter at 1300 Hz.

 Only visible if
n.ChAn < 2

F-10 F 10 Filter at 2600 Hz.

 Only visible if
n.ChAn < 2

F-11 CUsTon For use by the manufacturer.



MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

A **CAL**

B **DCAL**

C **GrAU**

D **SERIAL**

E **LAYout**

F **FILtEr**

G **SCREEN**

H **bAtt**

1 **bAttLit**

I **ECobAtt**

2 **br iGht**

J **AutoFF**

3 **LoCk**

K **rENotE**

4 **CoLour**

L **An.out**

M **inPutS**

N **outPut**

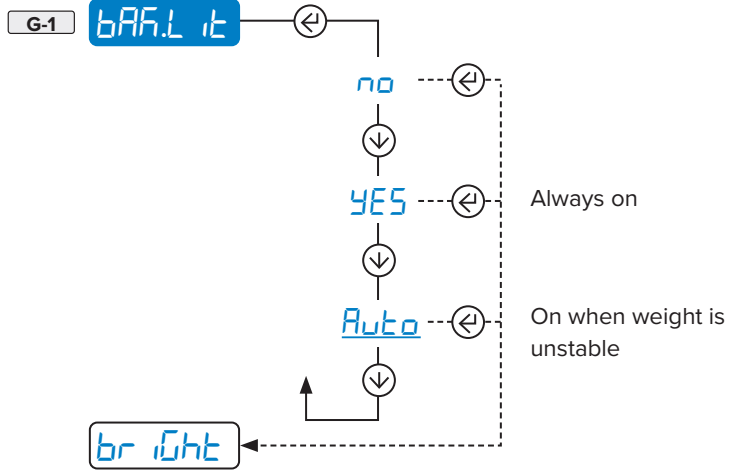
O **rESEt**

P **d iAG**

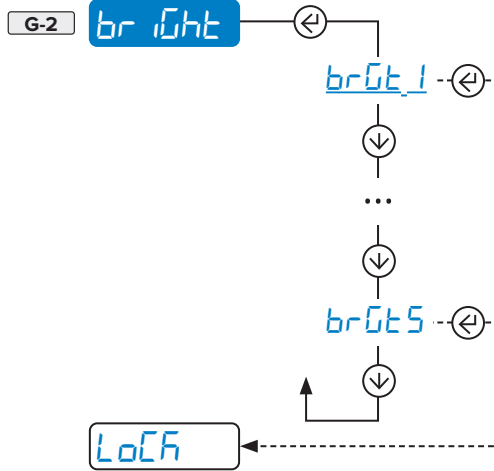
Q **AdVAnC**

SCREEN Adjusting the display

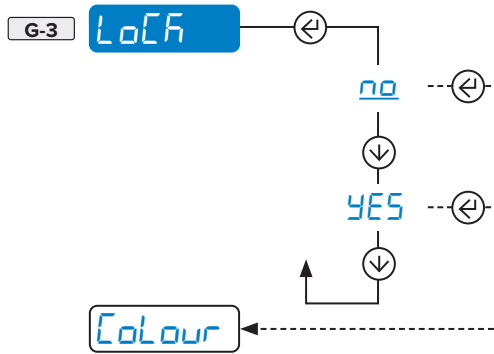
Backlighting



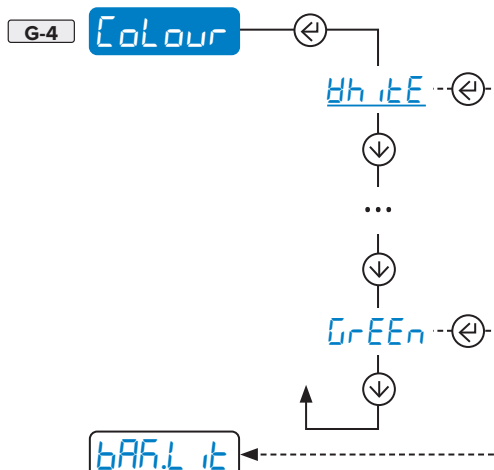
Brightness



Display lock (for use by the manufacturer)



Backlight colour



Only visible in version with colour display.



How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

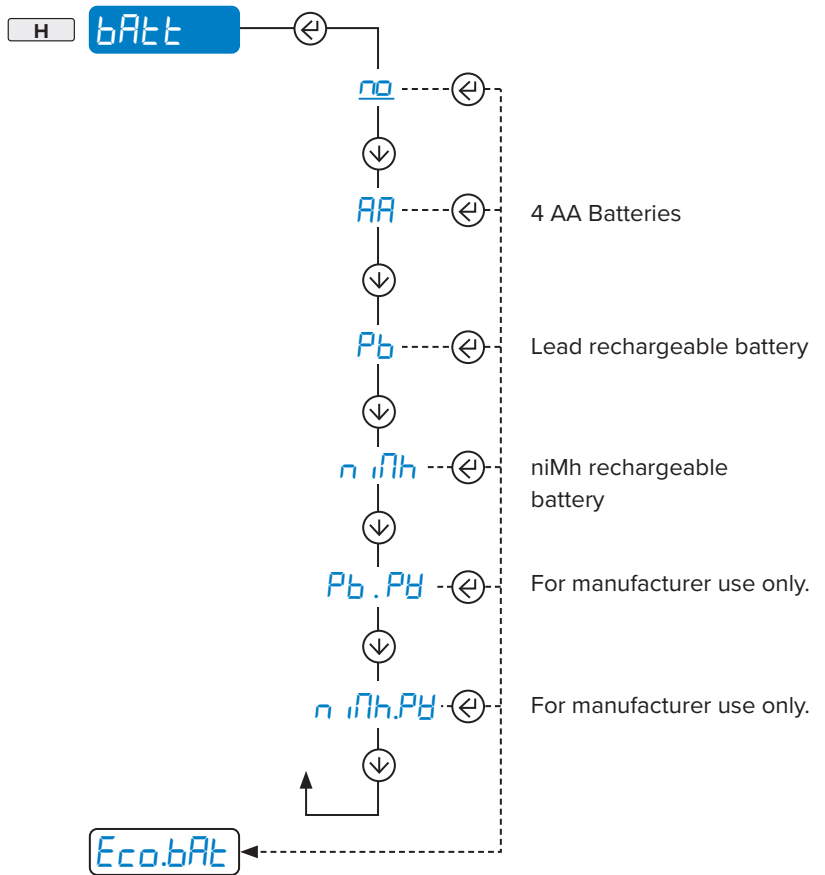
How to save and exit



Page 9

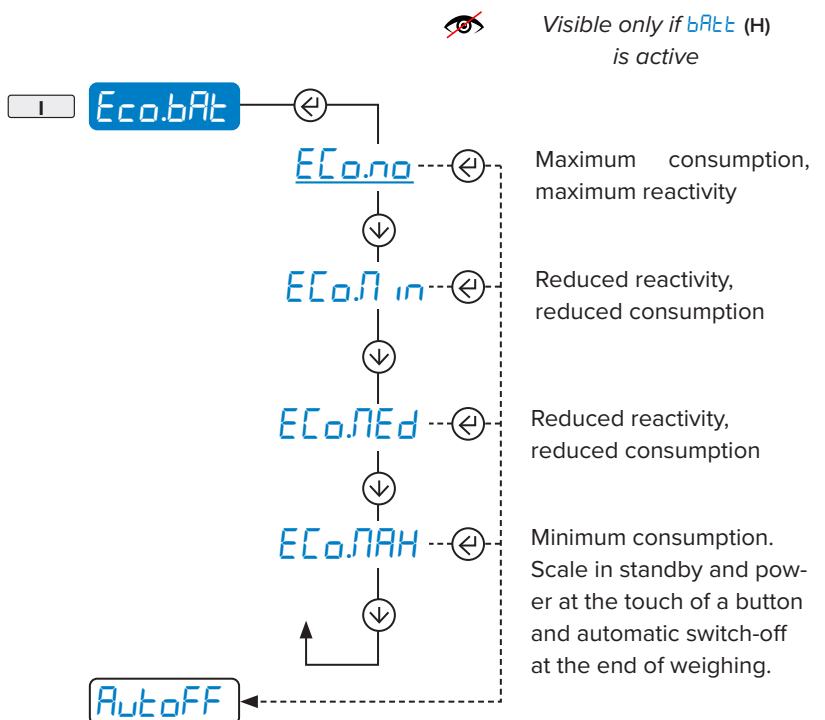
- A CAL
- B O.CAL
- C GrAU
- D SEr iAL
- E LAYout
- F FILtEr
- G SCrEEen
- H **bAtT**
- I Eco.bAt
- J AutoFF
- K rENotE
- L An.out
- M inPutS
- N outPut
- O rESEt
- P d iAG
- Q AdUAnC

bAtT Battery power supply



WARNING:
use only original rechargeable batteries.

ECo.bAt Energy saving for battery operation





MENU

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

A CAL

B D.CAL

C GrAU

D SEr AL

E LAYout

F ILtEr

G SCrEEr

H bAtE

I ECobAt

J AutoFF

K rENotE

L An.out

M inPutS

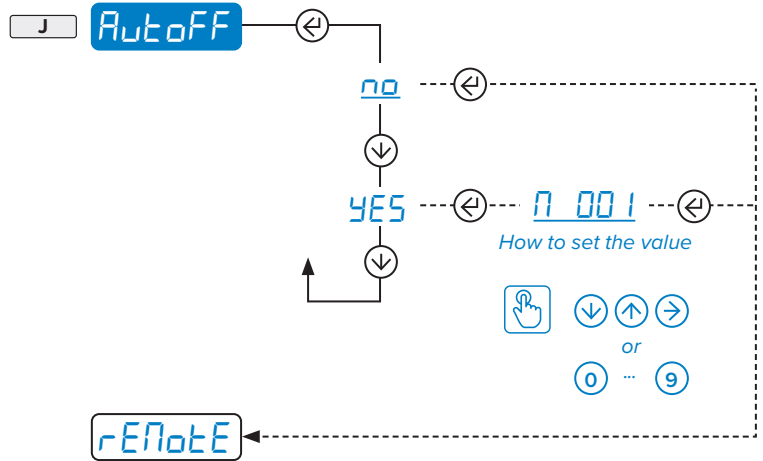
N outPut

O rESEt

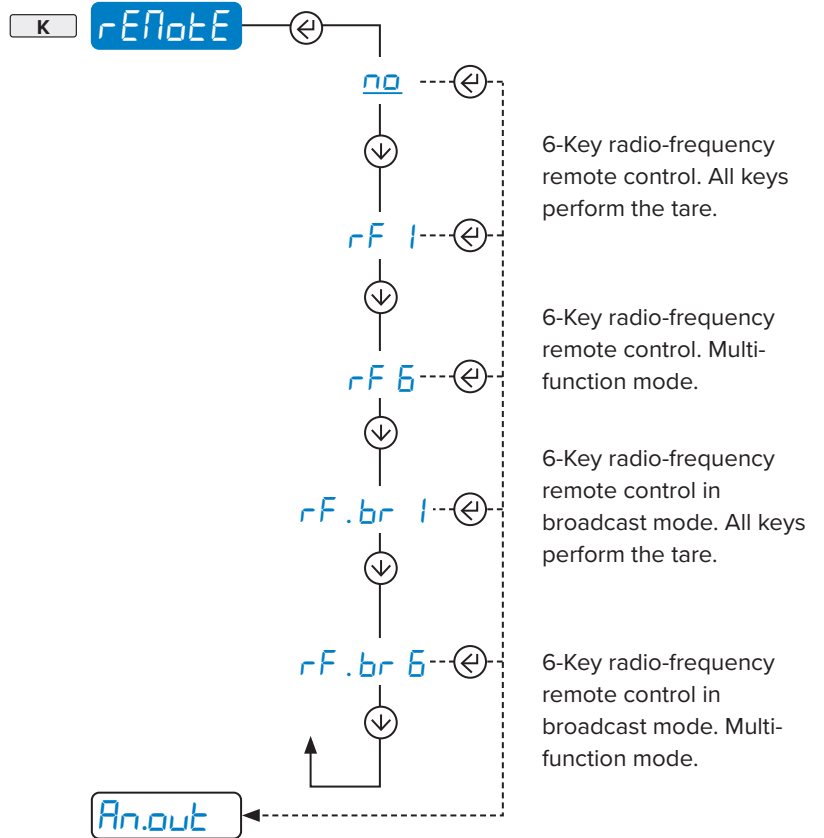
P d iAG

Q AdUAnC

AutoFF Auto switch-off



rENotE Remote control



The broadcast mode allows sending the control to multiple scales simultaneously.



How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

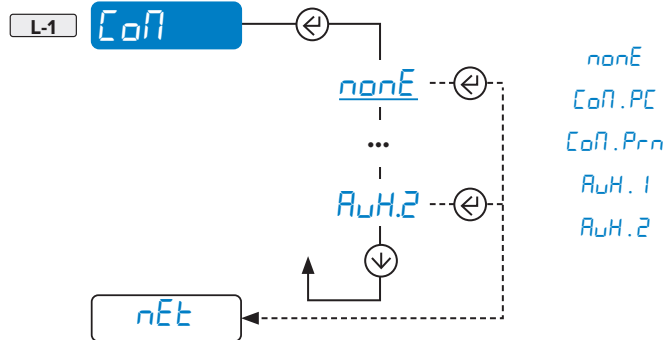
- A **CAL**
- B **D.CAL**
- C **GrAU**
- D **SERIAL**
- E **LAYout**
- F **FILtEr**
- G **SCrEEEn**
- H **bAtt**
- I **ECobAtt**
- J **AutoFF**
- K **rENotE**
- L **An.out**
- M **inPutS**
 - 1 **CoN**
 - 2 **nEt**
 - 3 **Pnt.und**
 - 4 **HGt.1**
 - 5 **Pnt.1**
 - 6 **HGt.2**
 - 7 **Pnt.2**
 - 8 **HGt.3**
 - 9 **Pnt.3**
 - 10 **Pnt.ovr**

An.out Analogue output

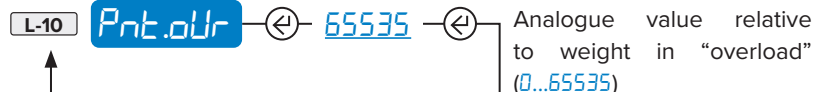
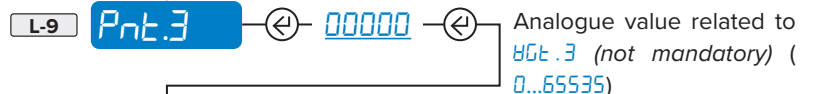
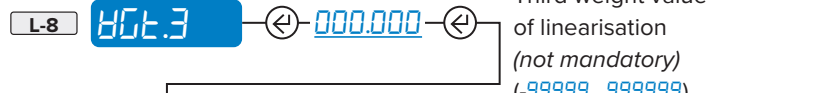
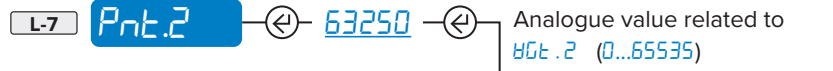
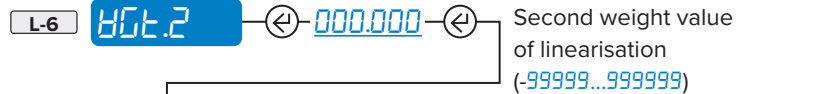
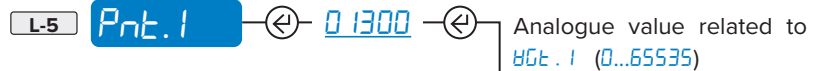
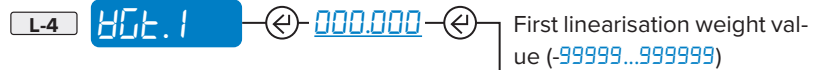
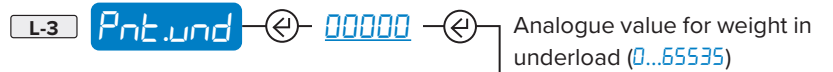
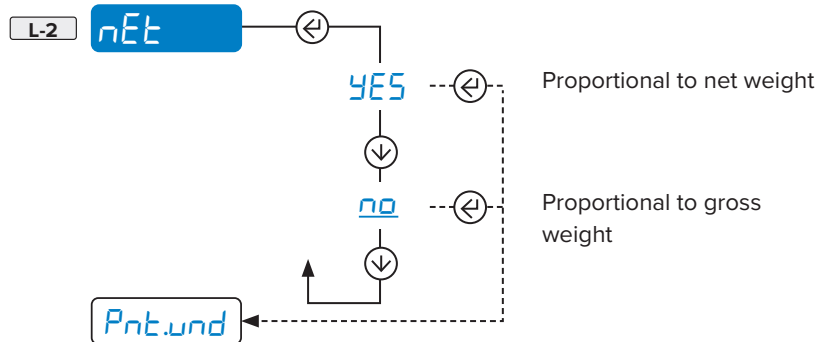


Only visible when the optional analogue board is present.

Selecting the COM port



Operation proportional to net/gross weight



Using the real time update of the output, it is possible to check the entered value with a tester (see example on page 33).

MENU

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit

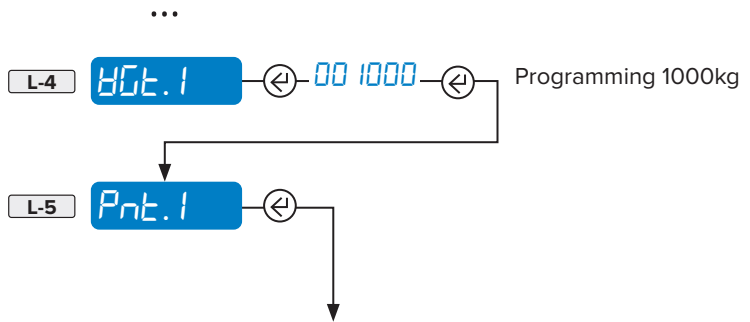


Page 9

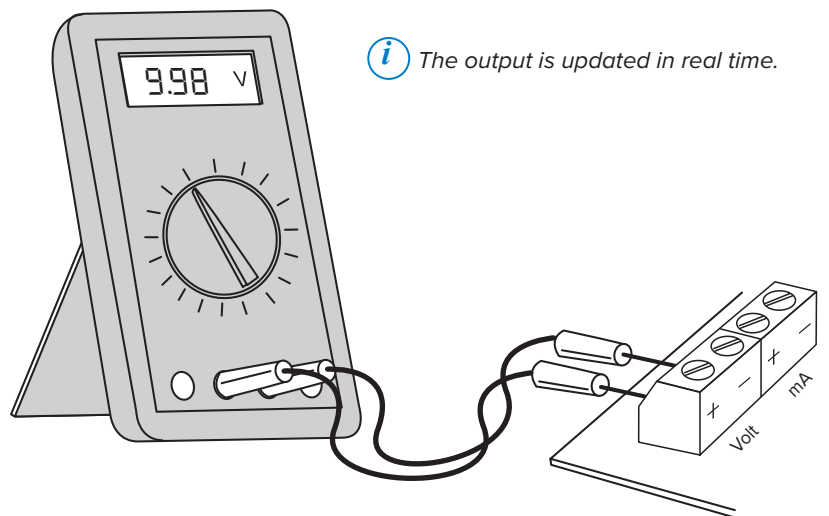
- A CAL
- B D.CAL
- C GrAU
- D SEr iAL
- E LAYout
- F FILtEr
- G SCrEEr
- H bAtE
- I ECobAt
- J AutoFF
- K rENotE
- L An.out
- M inPutS
 - 1 CoN
 - 2 nEt
 - 3 Pnt.und
 - 4 Hgt.1
 - 5 Pnt.1
 - 6 Hgt.2
 - 7 Pnt.2
 - 8 Hgt.3
 - 9 Pnt.3
 - 10 Pnt.oUr

Programming example:

the analogue output provides 10V to program a linearisation point so that at 1000kg.

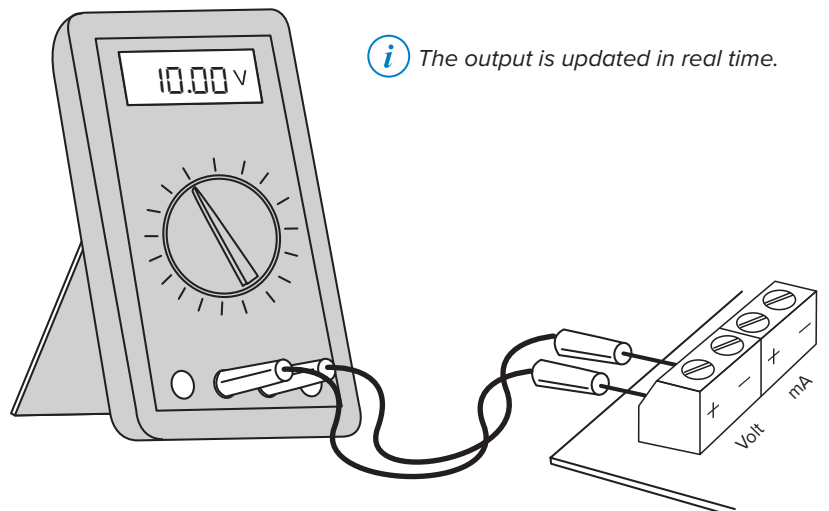
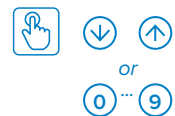


Enter **62300** (the reference value given in the table) and check the analogue output using a tester.



Adjust the analogue output by increasing or decreasing the value. Minimum variations of at least 10 points are recommended, (62310, 62320, 62330, etc.)

How to set the value



Once the desired adjustment has been made, confirm the value with .



MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

A CAL

B D.CAL

C GrAU

D SEr iAL

E LAYout

F FILtEr

G SCrEEEn

H bAtE

I ECo.bAt

J AutoFF

K rENotE

L An.out

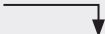
M **inPutS**

N outPut

O rESEt

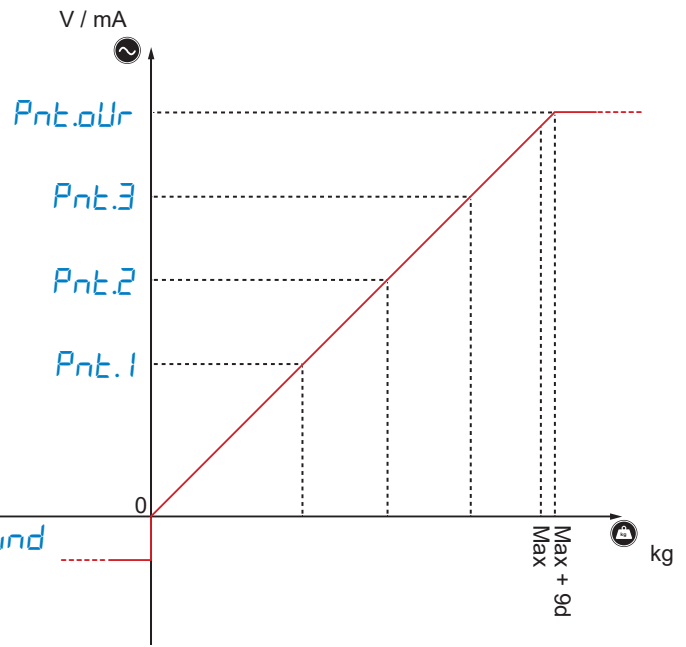
P d iAG

Q AdUAnC



1 **inP.b.1**

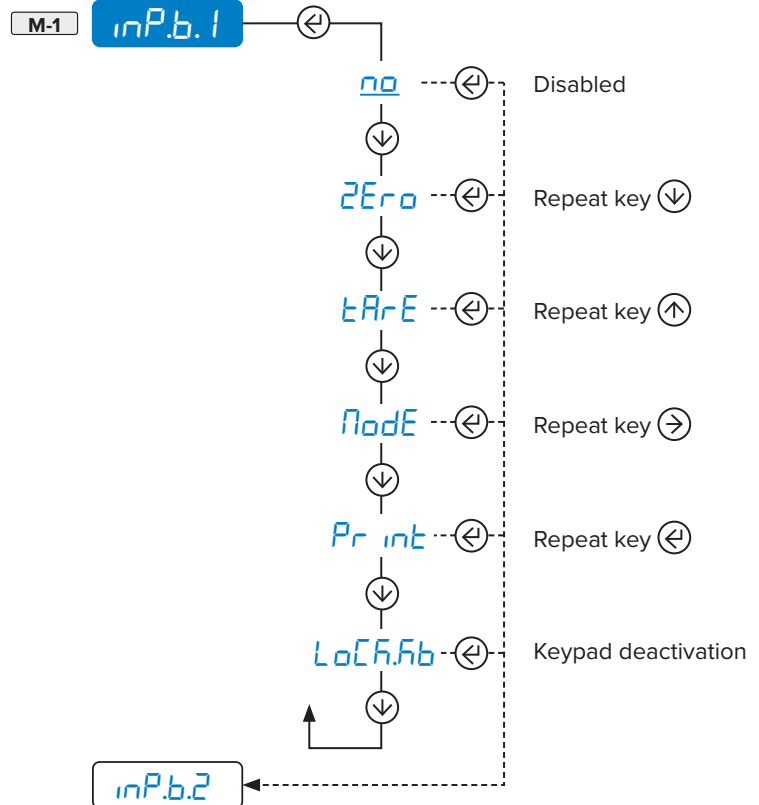
2 **inP.b.2**



Value to be entered	Output volts	mA output
1200	~ 0 V	~ 0 mA
11250		~ 4 mA
52200		~ 20 mA
62300	~ 10 V	

inPutS Digital inputs

Input configuration 1



Repeat the same operation for inP.b.2.



<i>How to enter</i>	<i>How to browse</i>	<i>How to save and exit</i>
1. Off	↑ =	
2. On	↓ =	
3.	→ =	
Page 9	← =	
		Page 9

A CAL

B D.CAL

C GrAU

D SEr AL

E LAYout

F FILtEr

G SCrEEen

H bAtE

I ECobAt

J AutoFF

K rENotE

L An.out

M inPutS

N outPut

O rESEt

P d IAG

Q AdUAnC

1 rEL.b.1

2 rEL.b.2

3 rEL.b.3

4 rEL.b.4

5 rEL.b.5

6 rEL.b.6

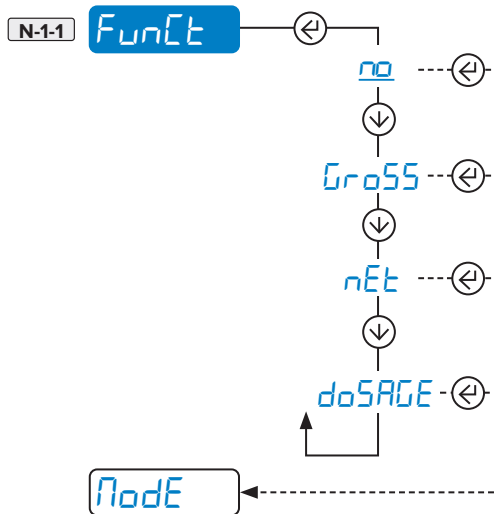
1 FunCt

2 Node

3 d irECt

4 h iStEr

Operation on net weight, gross weight or batching

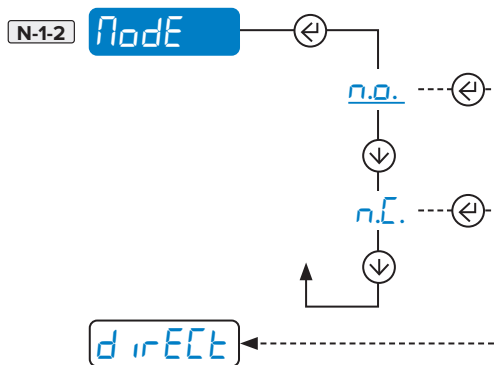


For dosing / filling:

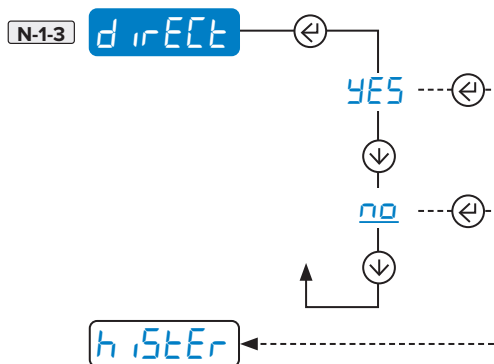
- Activate mode *doSAGE*
- Set tare *unLoCk*.

The output is activated only after the container has been calibrated (by key or external button) and is deactivated when the set target (setpoint) is reached. To carry out two-speed filling, two outputs must be programmed with *doSAGE* mode.

Normally open operation (n.o.) or closed (n.c.)



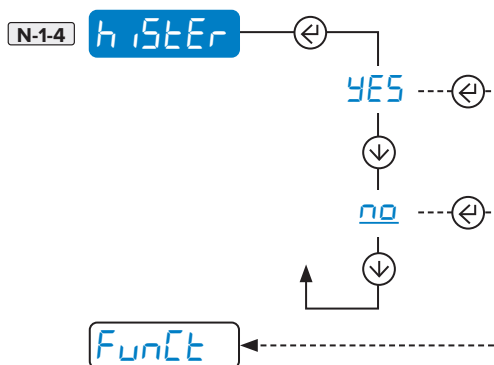
Output activation mode



Direct, stable or unstable weight

Only at stable weight

Double threshold operation (activation weight threshold ≠ from output deactivation weight threshold)



Operation:

YES (Double threshold)

no (Single threshold)

Repeat the same operation for rEL .b.2, rEL .b.3, rEL .b.4, rEL .b.5 and rEL .b.6.





MENU

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- ↑ =
- ↓ =
- =
- ← =

How to save and exit



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A CAL

B D.CAL

C GrAU

D SEr iAL

E LAYout

F iLteR

G SCrEEen

H bAtte

I ECobAt

J AutoFF

K rENotE

L An.out

M inPutS

N outPut

O rESEt

P d iAG

Q AdUAnC

1 AdC.uU

2 d iSPLA

3 rEYb

4 CtS

5 outPut

6 inPutS

7 An.out

8 SEr.nuN

9 PrG.VER

10 d iU. int

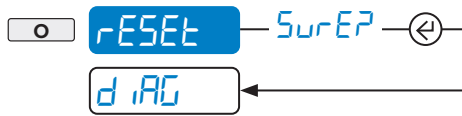
11 AdC.Pnt

12 bt.AdC

13 Pw.AdC

14 SEr iAL

rESEt Factory configuration reset



Function for restoring default configurations keeping the stored calibration.

d iAG Diagnostics

P-1 AdC.uU

Converter. Check of input signal in μV . In case of multiple equalised channels, press buttons or to examine all the channels selected.

P-2 d iSPLA

Display. Integrity check of all segments and icons.

P-3 rEYb

Keypad. Press any key to check its correct operation, with beep and code on display.

P-4 CtS

CTS. Check of status of the control signal from the printer.

P-5 outPut

Optional digital outputs. Check the activation and deactivation of each contact.

Example: *out 1* activates output 1. Press button to select the next output.

WARNING: before entering the step *outPut* check that the activation of the output does not cause conditions of danger to persons, animals or property.

P-6 inPutS

Optional digital inputs. Check the activation and deactivation of each input.

Example: *. . b + 0* input not active

Example: *. . b + 1* active input

Press button to select the next input.

P-7 An.out

Analogue output. Enter the digital value and check the analogue output response with a tester.

P-8 SEr.nuN

Scale serial number.

P-9 PrG.VER

Reviewing hardware (e.g. *rEU 5*) followed by software version (e.g. *04 . 00 . 00*).

P-10 d iU. int

Number of internal divisions.

P-11 AdC.Pnt

Converter. Checking signal in ADC points. In case of multiple equalised channels, press buttons or to examine all the channels selected.

P-12 bt.AdC

Battery voltage value.

P-13 Pw.AdC

Mains power supply voltage value.

P-14 SEr iAL

Scale serial number.





MENU

How to enter

- 1. Off
- 2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



Page 9

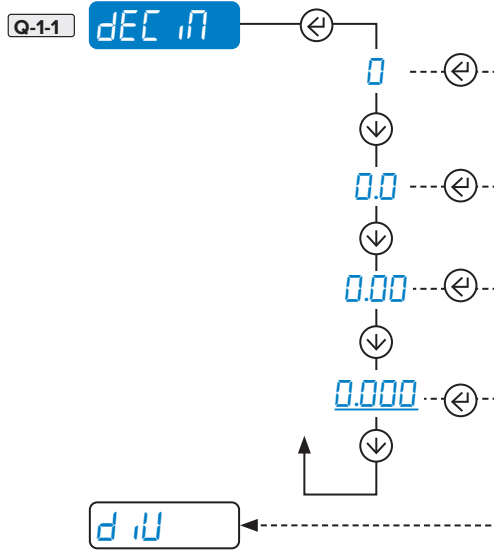
- A CAL
- B D.CAL
- C GrAU
- D SEr AL
- E LAYout
- F ILtEr
- G SCrEEr
- H bAtE
- I ECobAt
- J AutoFF
- K rENotE
- L An.out
- M inPutS
- N outPut
- O rESEt
- P d iAG
- Q AdVAnC

- 1 CAL.PAr
- 2 EQvAL.P
- 3 CAL.AdU
- 4 StEb.FLt
- 5 PErR.FL
- 6 NEtrol
- 7 rEYb
- 8 t iLt
- 9 rEACt
- 10 LoCh.Fb
- 11 AL ib i.r
- 12 P in.tEC
- 13 P in.uSE
- 14 dFLt.t

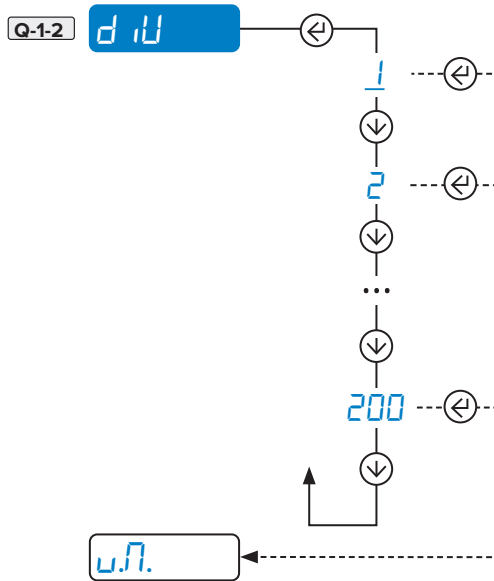
AdVAnC Advanced

CAL.PAr Calibration parameters

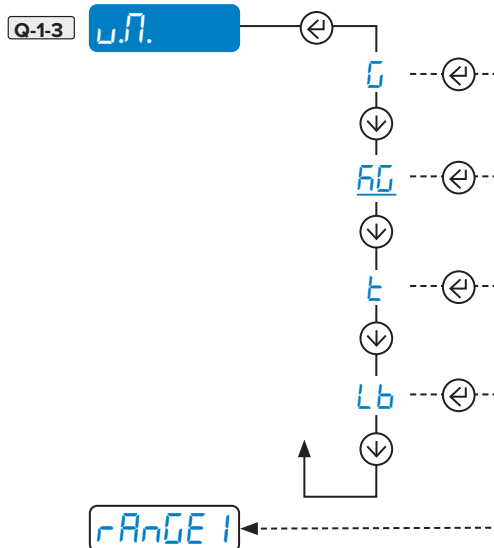
Configuration of the decimal point (0...3)



Reading division



Unit of measure



How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit

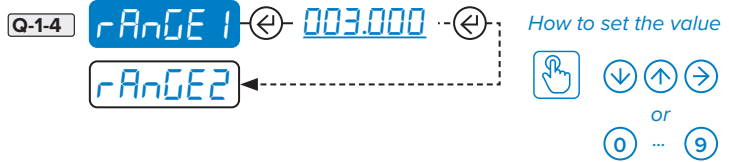


Page 9

- A CAL
- B O.CAL
- C GRAU
- D SERIAL
- E LAYOut
- F FILTER
- G SCREEN
- H bAtt
- I ECobAtt
- J AutoFF
- K rENotE
- L An.out
- M inPutS
- N outPut
- O rESEt
- P d.iAG
- Q AdVAnC

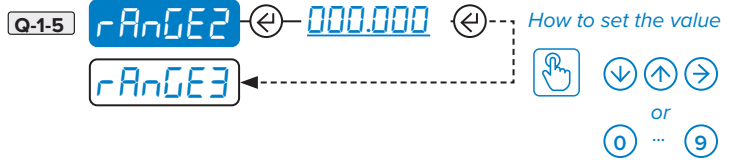
- 1 CAL.PAr
 - 2 EQUAL.P
 - 3 CAL.AdU
 - 4 Stb.FLt
 - 5 PEAK.FL
 - 6 NEtrol
 - 7 REYb
 - 8 t iLt
 - 9 rEAct
 - 10 LoChAb
 - 11 AL ib i.r
 - 12 P in.tEC
 - 13 P in.uSE
 - 14 dFLt.t
- 1 dEC iN
 - 2 d iU
 - 3 u.N.
 - 4 rAnGE 1
 - 5 rAnGE2
 - 6 rAnGE3
 - 7 EQUAL
 - 8 n.ChAn

Scale capacity. Set Max or Range 1 (Max range = 800.000)



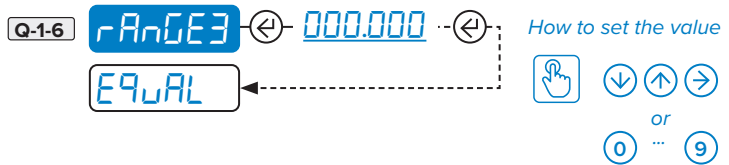
Range 2

For multirange scales, set the second weighing range.



Range 3

For multirange scales, set the third weighing range.

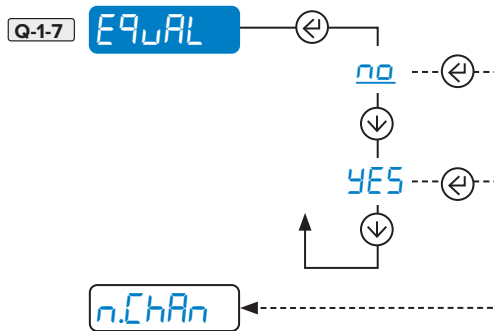


Example of multirange configuration at 1500/3000 kg, division 0,5/1 kg.

Set:

- dEC i = 0.0
- d iU = 5
- rAnGE 1 = 1500.0
- rAnGE 2 = 3000.0

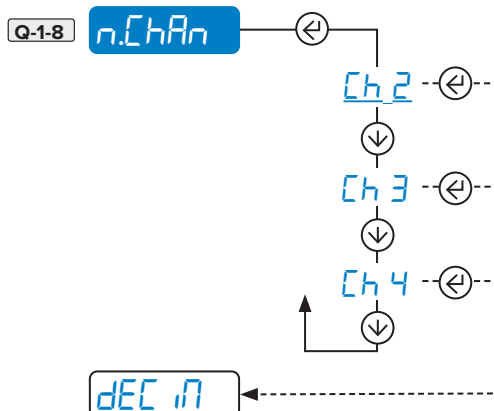
Equalisation function













Connection diagram on page 8.
Equalisation procedure on page 39.

Equalised analogue channels


Only visible if EQUAL (Q-1-7) = YES



How to enter	How to browse	How to save and exit
1. Off 	↑ = 	 
2. On 	↓ = 	
3. 	→ = 	
 Page 9	← = 	

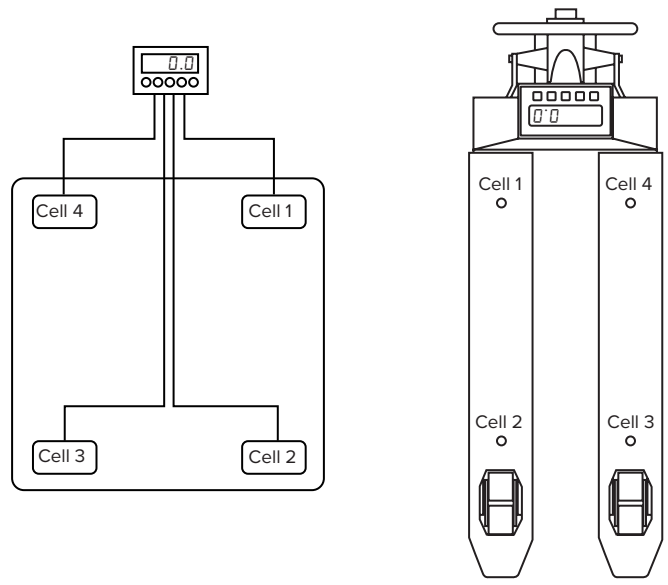
- A CAL
- B D.CAL
- C GrAU
- D SEr iAL
- E LAYout
- F ILtEr
- G SCrEEr
- H bAtE
- I ECobAt
- J AutoFF
- K rENotE
- L An.out
- M inPutS
- N outPut
- O rESEt
- P d iAG
- Q AdVAnC**


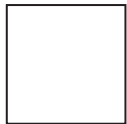





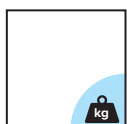


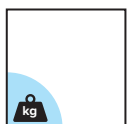




- 1 CAL.PAr
- 2 **EQUAL.P**
- 3 CAL.AdU
- 4 StEb.FLt
- 5 PEAK.FL
- 6 NEtrol
- 7 rEyE
- 8 t iLt
- 9 rEAct
- 10 LoCh.Fb
- 11 AL ib i.r
- 12 P in.tEC
- 13 P in.uSE
- 14 dFLt.t

 **EQUAL.P** is only visible if the function **EQUAL** (Q-1-7) is activated in the menu **CAL.PAr** (Q-1).

The equalisation wizard asks to acquire the zero point with scale unloaded and to later place a weight of about 1/8 of the maximum capacity (Max) on each individual cell in the required order. The message **E9.oh** will appear after the procedure.

Proceed with the calibration.



- Q-2-1 **E9.0** →  -oh- 
- E9.1** ← 
- Q-2-2 **E9.1** →  -oh- 
kg = 1/8 Max (kg)
- E9.2** ← 
- Q-2-3 **E9.2** →  -oh- 
kg
- E9.3** ← 
- Q-2-4 **E9.3** →  -oh- 
kg
- E9.4** ← 
- Q-2-5 **E9.4** →  -oh- 
kg
- CAL.AdU** ← 

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



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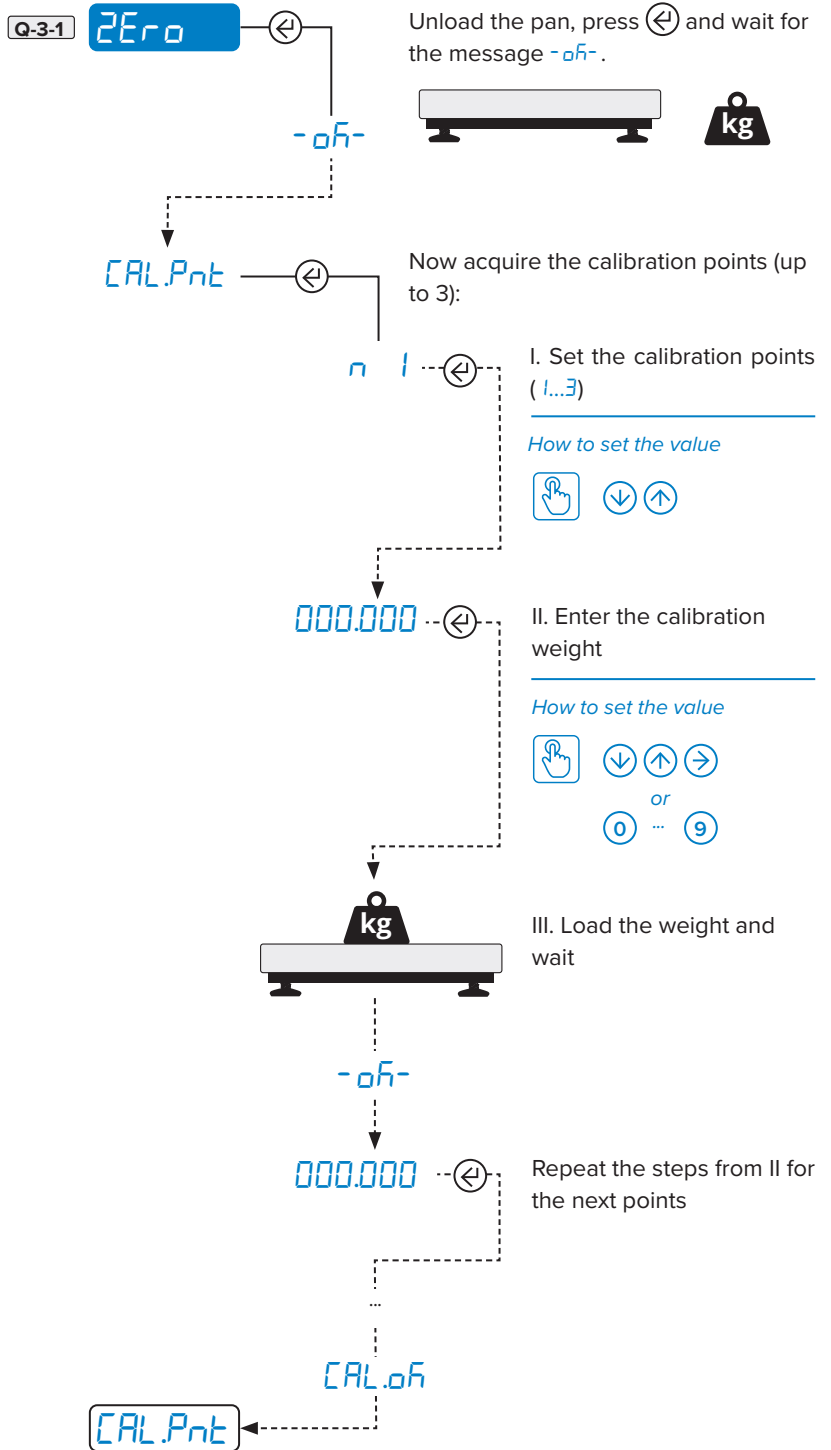
- A **CAL**
- B **0.CAL**
- C **GrAU**
- D **SEr iAL**
- E **LAYout**
- F **F ILtEr**
- G **SCrEEen**
- H **bAtt**
- I **ECobAt**
- J **AutoFF**
- K **rENotE**
- L **An.out**
- M **inPutS**
- N **outPut**
- O **rESEt**
- P **d iAG**
- Q **AdVAnC**

- 1 **CAL.PAr**
- 2 **EQUAL.P**
- 3 **CAL.AdU**
- 4 **Stb.FLt** → **2Er0**
- 5 **PEAK.FL**
- 6 **NEtrol**
- 7 **REYb**
- 8 **t iLt**
- 9 **rEAct**
- 10 **LoChAb**
- 11 **AL ib i.r**
- 12 **P in.tEC**
- 13 **P in.vSE**
- 14 **dFLt.t**

CAL.AdU Complete calibration

Before calibrating, configure the decimals (**dEE** - Q-1-1), the division (**d iU** - Q-1-2) and the capacity (**rAnGE** - Q-1-4,5,6).

Start of the calibration procedure:



Stb.FLt Additional stability filter

Q-4 **Stb.FLt** For use by the manufacturer.



How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



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A CAL

B O.CAL

C GrAU

D SEr iAL

E LAYout

F iLteR

G SCrEEen

H bAtte

I ECobAt

J AutoFF

K rENotE

L An.out

M inPutS

N outPut

O rESEt

P d iAG

Q AdvAnC

1 CAL.PAr

2 EQUAL.P

3 CAL.AdU

4 Sttb.FLt

5 PEAK.FL

6 METrol

7 REYb

8 t iLt

9 rEAct

10 LoChAb

11 AL ib i.r

12 P in.tEC

13 P in.uSE

14 dFLt.t

1 O.PEr-C

2 d iLSttb

3 t iLSttb

4 O.t.r.h

5 O.t.r.h.SP

6 on.2Er0

7 CAL.AdU

8 CAL.NAn

9 d.SALe

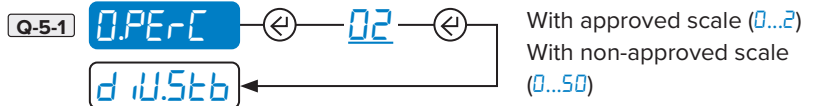
PEAK.FL Anti-peak filter

Q-4 PEAK.FL For use by the manufacturer.

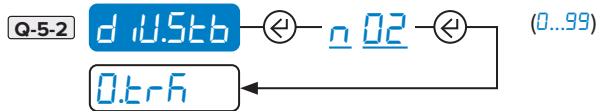
METrol Metrological parameters



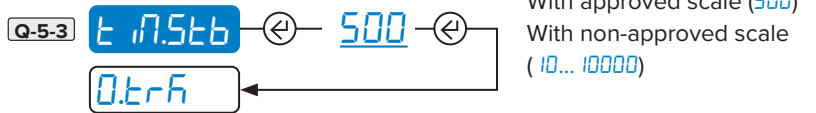
Resetting percentage using the key



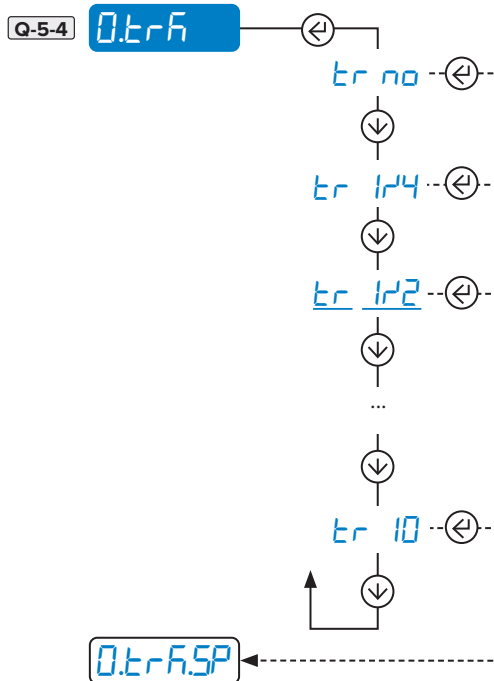
Sensitivity of the weight stability control



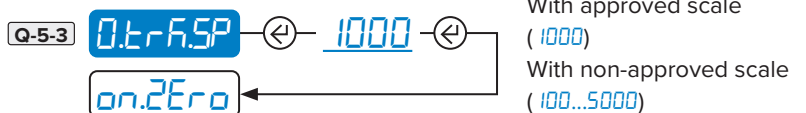
Stability detection time



Zero hold function (tracking)



Zero tracking speed





MENU

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

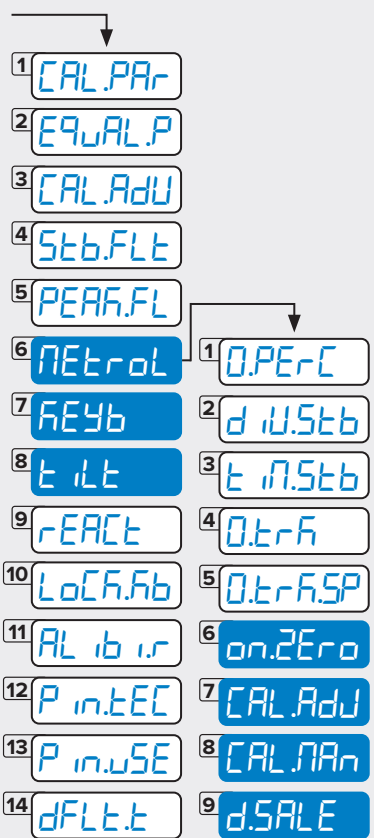
- =
- =
- =
- =

How to save and exit

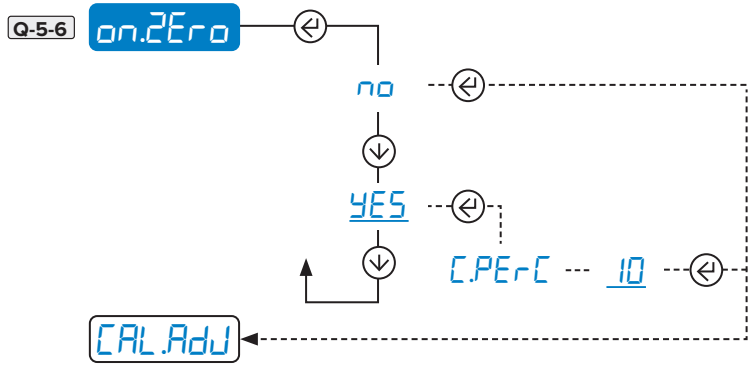


Page 9

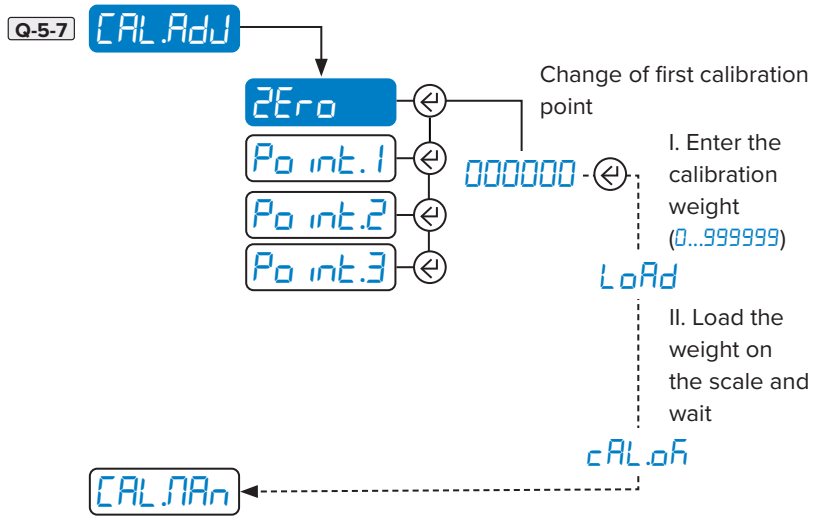
- A CAL
- B O.CAL
- C GrAU
- D SEr iAL
- E LAYout
- F FILtEr
- G SCrEEen
- H bAtt
- I ECobAt
- J AutoFF
- K rENotE
- L An.out
- M inPutS
- N outPut
- O rESEt
- P d iAG
- Q AdvAnC



Reset at power and reset percentage



Re-acquisition / change of the calibration points in memory.

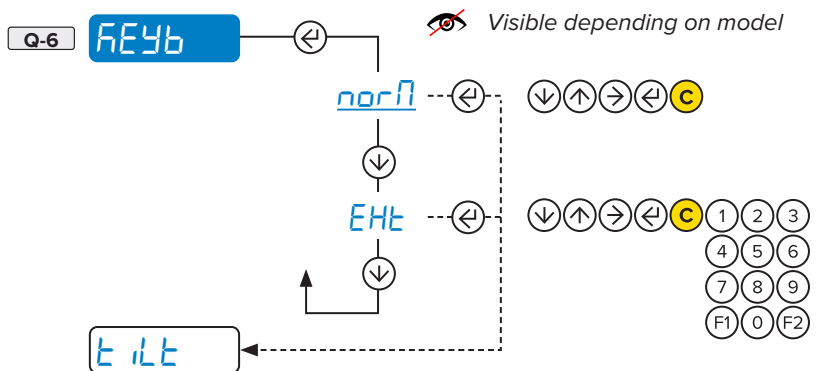


Repeat the same operation for Po int 1, Po int 2 and Po int 3

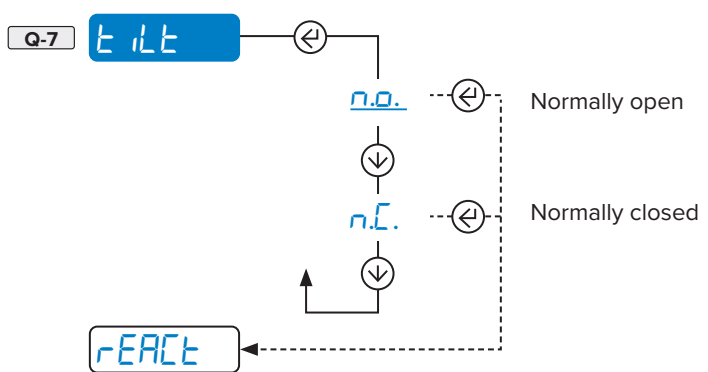
Q-5-8 CAL.NAn For use by the manufacturer.

Q-5-9 d.SALE For use by the manufacturer.

Type of keypad



Inclinometer (for use by the manufacturer)





MENU

How to enter

1. Off
2. On
- 3.

Page 9

How to browse

- =
- =
- =
- =

How to save and exit



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A CAL

B O.CAL

C GrAU

D SEr AL

E LAYout

F FILtEr

G SCrEEr

H bAtt

I ECobAt

J AutoFF

K rENotE

L An.out

M inPutS

N outPut

O rESEt

P d.rAG

Q AdvAnc

1 CAL.PAr

2 EQUAL.P

3 CAL.AdU

4 Stb.FLt

5 PEAK.FL

6 NEtrol

7 rEYb

8 tILt

9 rEAct

10 LoCk.rAb

11 ALib.r

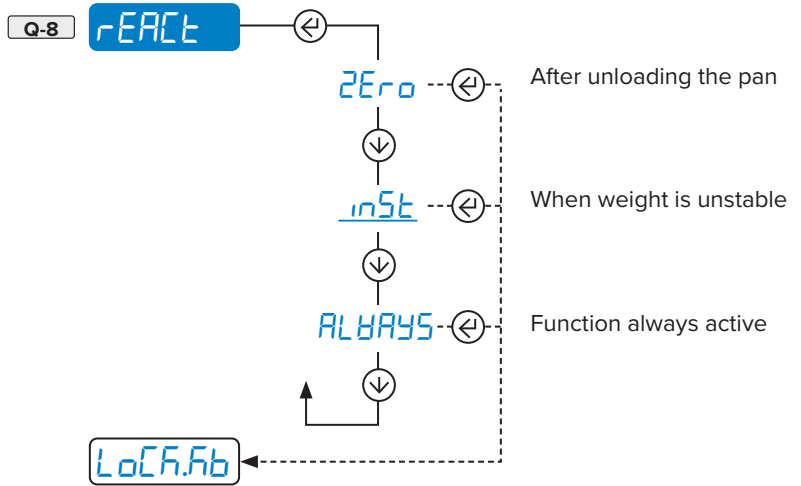
12 P.in.tEC

13 P.in.uSE

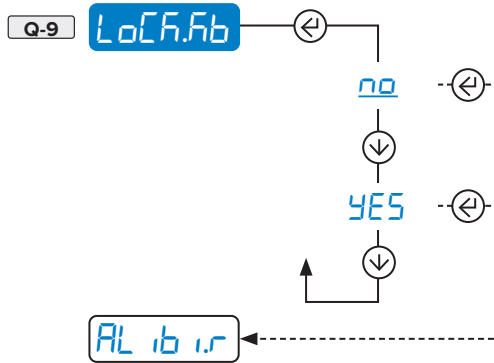
14 dFLt.t



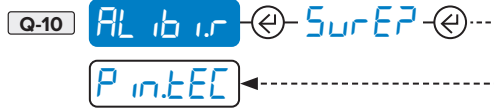
Reactivation of the print or weight totalisation function



Permanent keypad lock (excluding key)



Reset of fiscal memory (alibi memory, optional)



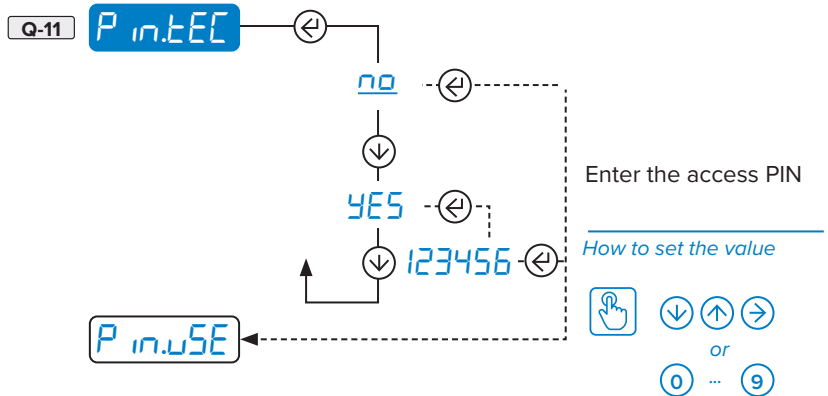
Only visible if alibi memory option is present

Reset is not possible



if instrument is certified

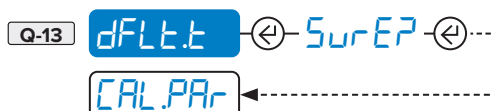
Access PIN to programming menu



Access PIN to user menus



Total reset of memory and of calibration, with reset of the factory settings.



6. COMMUNICATION STRINGS

Short string

01ST,GS, 0.0,kg<CR><LF>

where

01	Code 485 of the instrument (2 characters), only if communication mode 485 is enabled
ST	Scale status (2 characters): <u>US</u> - Unstable weight <u>ST</u> - Stable weight <u>OL</u> - Weight overload (out of range) <u>UL</u> - Weight underload (out of range) <u>TL</u> - Scale not level (inclinometer active)
,	ASCII 044 character
GS	Type of weight data (2 characters) <u>GS</u> - Gross <u>NT</u> - Net
,	ASCII 044 character
0.0	Weight (8 characters including the decimal point)
,	ASCII 044 character
kg	Unit of measurement (2 characters)
<CR><LF>	Transmission terminator, characters ASCII 013 and ASCII 010

Extended string

011, ST, 0.0,PT 20.8, 0,kg<CR><LF>

where

01	Code 485 of the instrument (2 characters), only if communication mode 485 is enabled
1	ASCII 049 character
,	ASCII 044 character
ST	Scale status (2 characters): <u>US</u> - Unstable weight <u>ST</u> - Stable weight <u>OL</u> - Weight overload (out of range) <u>UL</u> - Weight underload (out of range) <u>TL</u> - Scale not level (inclinometer active)
,	ASCII 044 character
0.0	Net weight (10 characters including the decimal point)
,	ASCII 044 character
PT	Indication of pre-set manual tare (2 characters)
20.8	Tare weight (10 characters including the decimal point)
,	ASCII 044 character
0	Number of pieces (10 characters)
,	ASCII 044 character
kg	Unit of measurement (2 characters)
<CR><LF>	Transmission terminator, characters ASCII 013 and ASCII 010

Custom string

Foreword:

The configuration can only be carried out using DiniTools in the “CUSTOM STRING FORMATTING” section.

The maximum length of the string configuration field is 100 characters. Fixed alphanumeric characters or variable macros may be used inside.

There are also “tokens” that define the characters that a variable (<>) will become in the string when the indicator is in weighing mode.

The custom string can be composed using the macros on page 49

The default custom string setting is shown below:

<2><P><W7.><U><M><S><CR><LF>

where

<2>	ASCII STX character (start of text)
<P>	Weight polarity
<W7.>	Weight (formatted to 7 digits with decimal point)
<U>	Unit of measure
<M>	Type of weight (gross, net, tare)
<S>	Weight status
<CR><LF>	Transmission terminator, characters ASCII 013 and ASCII 010

Default token:

Gross mode token “<M>”	G
Net mode token “<M>”	N
Tare mode token “<M>”	T
Preset weight token “<M>”	T
Unit token “<U>”	K
Positive polarity token “<P>”	SPACE
Negative polarity token “<P>”	-
Invalid status token “<S>”	I
Motion status token “<S>”	M
Valid status token “<S>”	SPACE
Coz status token “<S>”	Z
Overload status token “<S>”	O
Underload status token “<S>”	O
Overload char token “<S>”	&
Underload char token “<S>”	=

The default command to be sent to the weight indicator to request the custom string is:

nnSF#1<CR><LF>

Available Macro:

Macro	Format	Description	Token value (standard)
Weight sign	<p><P> Sign of the displayed weight</p> <p><PG> Sign of the gross weight</p> <p><PN> Sign of the net weight</p> <p><PT> Sign of the tare</p>	<p>The string will show the character set in tokens:</p> <p>Positive polarity token "<P>"</p> <p>Negative polarity token "<P>"</p>	<p>"SPACE" if the weight is positive</p> <p>"," if the weight is negative</p>
Unit of measure	<U>	<p>The string will show the character set in token:</p> <p>Unit token "<U>"</p>	"K", to indicate kg
Weight type	<p><M> Displayed weight</p> <p><MG> Gross weight</p> <p><MN> Net weight</p> <p><MT> Tare</p>	<p>The string will show the character set in tokens:</p> <p>Gross mode token "<M>"</p> <p>Net mode token "<M>"</p> <p>Tare mode token "<M>"</p> <p>Preset tare weight token "<M>"</p>	<p>"G" if the weight is gross</p> <p>"N" if the weight is net</p> <p>"T" if the weight is a tare</p> <p>"T" if the weight is a preset tare</p>
Weight status	<S>	<p>The string will show the character set in tokens:</p> <p>Invalid status token "<S>"</p> <p>Motion status token "<S>"</p> <p>Valid status token "<S>"</p> <p>Coz status token "<S>"</p> <p>Overload status token "<S>"</p> <p>Underload status token "<S>"</p> <p>Overload char token "<S>"</p> <p>Underload char token "<S>"</p>	<p>"I" if the weight is not valid</p> <p>"M" if the weight is not stable</p> <p>"SPACE" if the weight is valid</p> <p>"Z" if the weight is equal to zero</p> <p>"O" if the weight is in overload</p> <p>"O" if the weight is in underload</p> <p>"&" if the weight is in overload, all the weight digits are replaced by &</p> <p>"=" if the weight is in underload, all the weight digits are replaced by =</p>
Weight value	<p><W-0x.y> Displayed weight [left align]</p> <p><w-0x.y> Displayed weight [right align]</p> <p><G-0x.y> Gross weight [left align]</p> <p><g-0x.y> Gross weight [right align]</p> <p><N-0x.y> Net weight [left align]</p> <p><n-0x.y> Net weight [right align]</p> <p><T-0x.y> Tare [left align]</p> <p><t-0x.y> Tare [right align]</p>	<p>The string will show the weight. Depending on the parameters set, the format will change accordingly:</p> <p>! Show the sign "-" if the weight is negative</p> <p>0 Fills the empty spaces with "0"</p> <p>x Indicates the number of digits by which the weight is shown (max 15, from 1 to F)</p> <p>. Show the decimal point (If present in the weight)</p> <p>y Indicates the fixed number of digits after the decimal point (If the decimal point is present)</p> <p>!, 0, ., y characters are optional.</p>	
Bit sequence	<Bn,Bn,...>	Indicate a sequence of exactly 8 bits	See bit table
ASCII character	<X>		<p>Add the ASCII character. "CR" and "LF" are recognised as ASCII character 13 and 10</p> <p><CR> add the carriage return</p> <p><LF> add the line feed</p> <p><2> add the STX character</p>

Bit:

Bit	Bit used	Type	Name	Description
B0	1	Fixed	Bit value = 0	Used to complete the byte
B1	1	Fixed	Bit value = 1	Used to complete the byte
B3	1	Variable	Net weight	1 if the displayed weight is net 0 if the displayed weight is gross
B4	1	Variable	Weight equals to zero	1 if the gross weight is equal to zero (zero indication on the screen) 0 if the gross weight is not equal to zero (no zero indication on the screen)
B5	1	Variable	Stable weight	1 if the weight is stable (no motion indication on the screen) 0 if the weight is unstable (motion indication on the screen)
B6	1	Variable	Negative gross weight	1 if the gross weight is negative 0 if the gross weight is positive
B7	1	Variable	Weight in underload / overload	1 if the weight is in underload / overload 0 if the weight is not in underload / overload
B9	1	Variable	Active tare	1 if a tare is active 0 if there isn't a tare active
B10	1	Variable	Active preset tare	1 if a preset tare is active 0 if there isn't a preset tare active
B11	2	Variable	Weight type	00 if the displayed weight is gross 01 if the displayed weight is net 10 if the displayed weight is a tare

Example of custom string configuration to replicate the standard Dini Argeo string:

<u>String definition</u>	1,<S>,<M>,<P><W7.>,<U><CR><LF>	
Gross mode token "<M>"	GS	
Net mode token "<M>"	NT	
Tare mode token "<M>"	T	
Preset tare weight token "<M>"	PT	
Unit token "<U>"	Depending on the unit of measure	
Positive polarity token "<P>"	SPACE	
Negative polarity token "<P>"	-	
Invalid status token "<S>"	SPACESPACE	
Motion status token "<S>"	US	
Valid status token "<S>"	ST	
Coz status token "<S>"	ZR	
Overload status token "<S>"	OL	
Underload status token "<S>"	UL	
Overload char token "<S>"		(null)
Underload char token "<S>"		(null)

Example of custom string configuration to replicate the extended Dini Argeo string:

<u>String definition</u>	1,<S>,<WA.>,<MT><TA.> ,<U><CR><LF>	
Gross mode token "<M>"	GS	
Net mode token "<M>"	NT	
Tare mode token "<M>"	SPACESPACE	
Preset tare weight token "<M>"	PT	
Unit token "<U>"	Depending on the unit of measure	
Positive polarity token "<P>"	SPACE	
Negative polarity token "<P>"	-	
Invalid status token "<S>"	SPACESPACE	
Motion status token "<S>"	US	
Valid status token "<S>"	ST	
Coz status token "<S>"	ZR	
Overload status token "<S>"	OL	
Underload status token "<S>"	UL	
Overload char token "<S>"		(null)
Underload char token "<S>"		(null)

7. COMMUNICATION COMMANDS

Foreword:

in the serial commands and the respective responses

nn Address 485 of the instrument (2 characters), only if communication mode 485 is enabled
<CR> ASCII terminator character 13 (0D) (1 character)
<LF> ASCII terminator character 10 (0A) (1 character)

Simple weight reading

Command **nnREAD<CR><LF>**
Response Short string (see page 44)

Complete weight reading

Command **nnREXT<CR><LF>**
Response Long string (see page 44)

Reading custom string

Command **SF#1<CR><LF>** (configurable from Dinitools)
Response String (see page 45)

Performing a semi-automatic tare

Command **nnTARE<CR><LF>**
Response **OK<CR><LF>>** indicates that the command has been received correctly

Setting a tare value (PT)

Command **nnTMANttttttt<CR><LF>**
Where t...t is the tare value, with decimal points, max 8 characters.
Response **OK<CR><LF>>** indicates that the command has been received correctly
Examples **TMAN1.56<CR><LF>**
sets a tare value of 1.56
TMAN100<CR><LF>
sets a tare value of 100

Clearing the stored tare

Command **nnCLEAR<CR><LF>**
Response **OK<CR><LF>>** indicates that the command has been received correctly

Zeroing the scale (ZERO key function)

Command **nnZERO<CR><LF>**
Response **OK<CR><LF>>** indicates that the command has been received correctly

SPECIFIC COMMANDS FOR ALIBI MEMORY (OPTIONAL)

Save requests

Command `nnPID<CR><LF>` request to save the weighing

Response successful registration
`nnPIDss,c,wwwwwwwwwwuu,ppttttttttuu,xxxxx-yyyyyy<CR><LF>`

no registration
`nnPIDss,c,wwwwwwwwwwuu,ppttttttttuu,NO<CR><LF>`

where:

- ss** weight status (2 characters)
 - TL** *t iLl* error condition (NO RECORDING)
 - OL** *OUErLdPd* condition (NO RECORDING)
 - UL** Underload condition (NO REGISTRATION)
 - ST** Stable weight
 - US** Unstable weight (NO RECORDING)
- c** Scale number (1 character)
- w...w** Gross weight (10 characters)
- uu** Unit of measurement (2 characters)
- pp** Type of tare: double space " " if semi-automatic, "PT" if preset (2 characters)
- t...t** Tare value (10 characters)
- xxxxx** Number of rewrite (5 characters)
- yyyyyy** Progressive weighing (6 characters)

Example `PIDST,1, 1500,0kg,PT 2,8kg,00000-000158<CR><LF>`

Reading a stored weighing

Command `nnALRDxxxxx-yyyyyy<CR><LF>`
 Where xxxxx is the rewrite number, yyyy is the weighing sequence.

Response `s,wwwwwwwwwwuu,ppttttttttuu<CR><LF>`

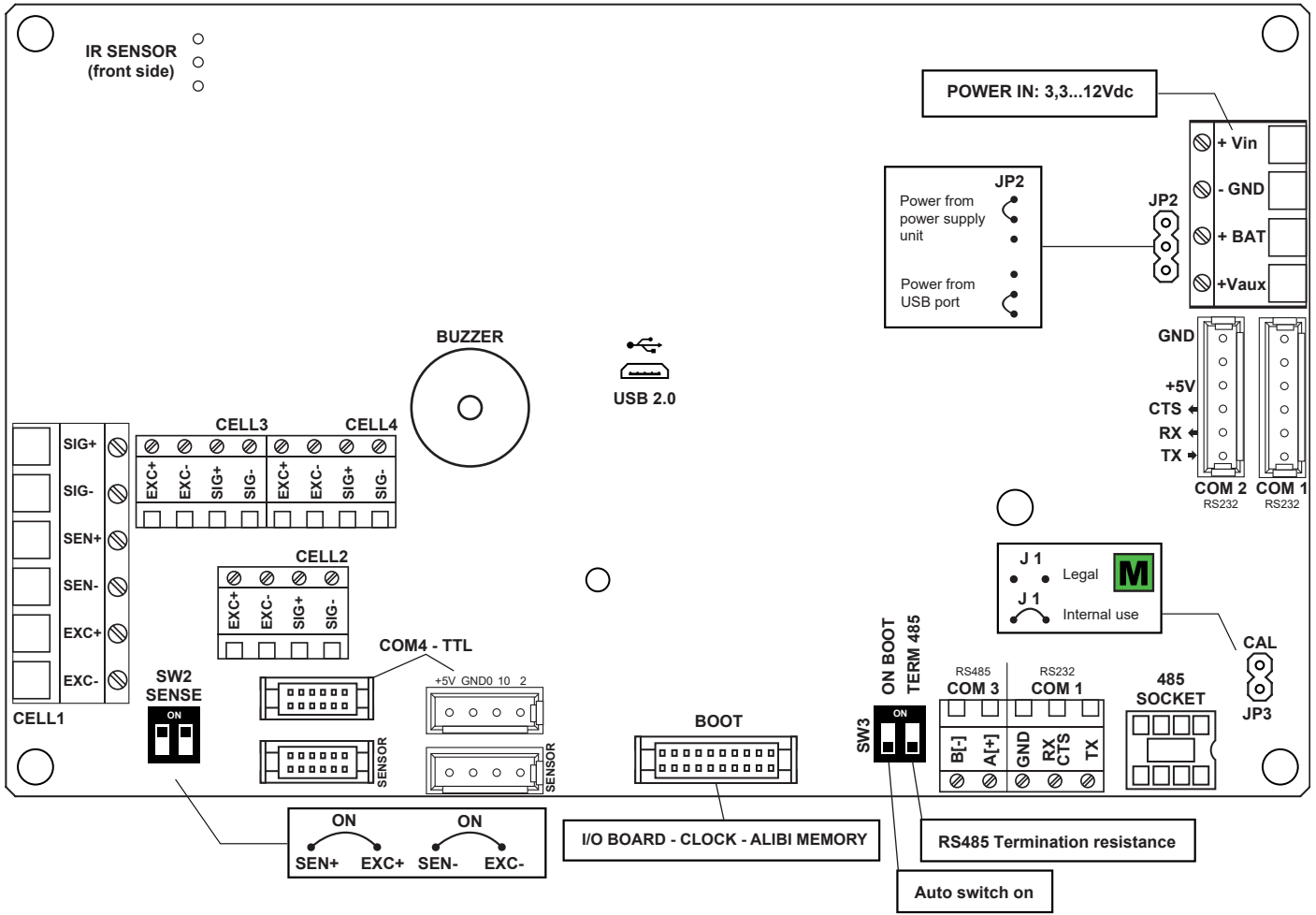
where:

- s** Number of scales (always 1)
- w...w** Gross weight (10 characters)
- uu** Unit of measurement ("g", "kg", "t", "lb")
- pp** Type of tare: double space " " if semi-automatic, "PT" if preset (2 characters)
- t...t** Tare value (10 characters)

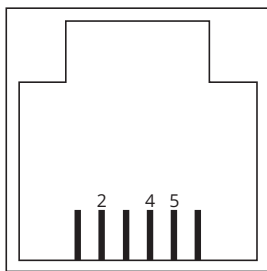
Example `ALRD00000-000158<CR><LF>`
`1, 1500,0kg, 2,8kg<CR><LF>`

8. WIRING DIAGRAMS

CPU board (DFWL-1x, DFWLI-1x, TPWNBT-1x)



RS232 serial port with RJ11 connector

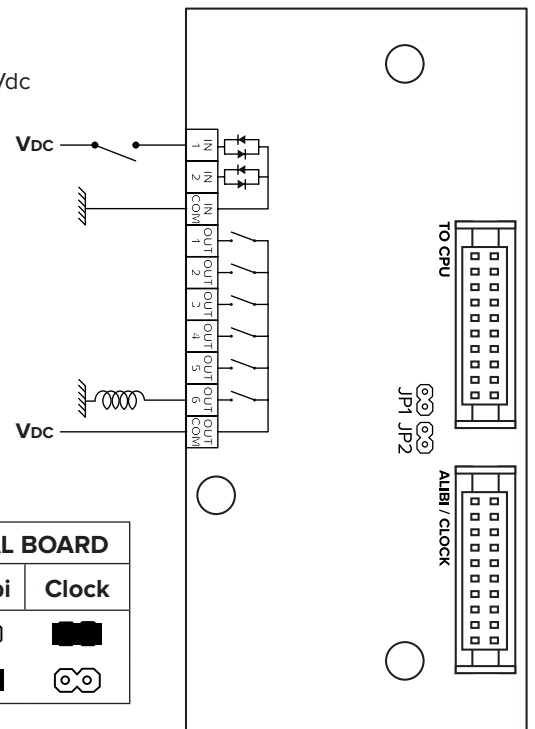


PIN	MEANING
2	TX
4	GND
5	RX

Optional IN/OUT DFIO board

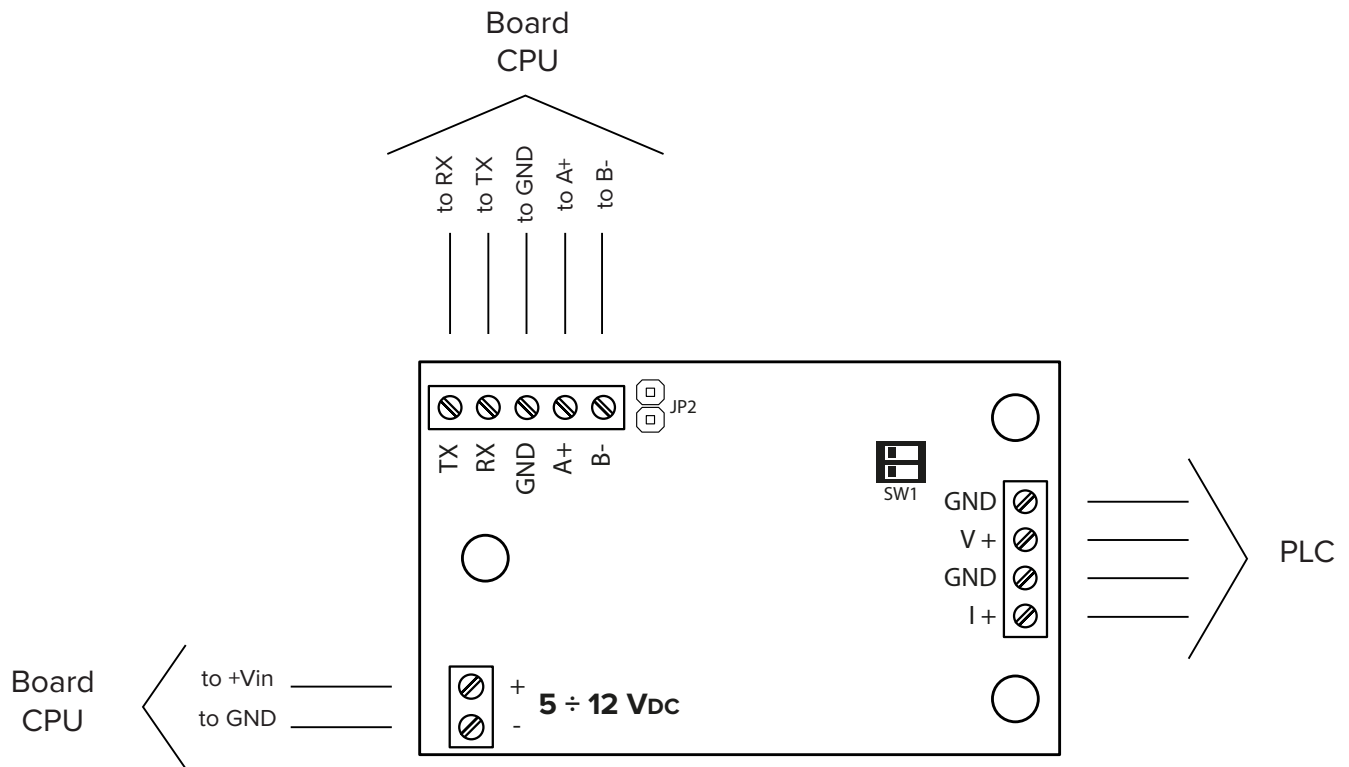
INPUTS
12 ÷ 48 V

OUTPUTS
48 Vac / 60 Vdc
0.5 A Max



EXTERNAL BOARD		
	Alibi	Clock
JP1		
JP2		

Optional analogue DAC16OSER output board



OPERATION RANGE (only for live analogue output)



9. PROGRAMMING ERRORS

MESSAGE	DESCRIPTION	SOLUTION
<i>AL.Err</i>	"Alibi memory" board (optional) not detected.	Check the presence of the board inside the indicator. If present, check it is not damaged and is installed correctly.
<i>Er.1.b.H</i>	"inputs / outputs" board (optional) not detected.	Check the presence of the board inside the indicator. If missing, deactivate any inputs or outputs (parameter " <i>inPUtS</i> " or " <i>ouTpuT</i> ", see <i>page 37-38</i>). If present, check it is not damaged and is installed correctly.
<i>Er.r.b.H</i>		
<i>E9.Err</i>	Impossible to perform equalisation.	Check the cells are connected properly. Check the signal of each cell in the diagnostic menu (menu <i>d.iAC</i> , parameter <i>AdC.uU</i> , see <i>page 39</i>).
<i>PrEC.</i>	Calibration error.	First calibrate the zero point, then proceed with the next points.
<i>Err.Pnt</i>	Calibration error.	Check the connection of the load cell. Check that the cell signal is stable, valid and greater than that of the previously acquired point.
<i>Er 11</i>	Calibration error.	Increase the calibration weight.
<i>Er 12</i>	Calibration error.	Check that the signal coming from the cell increases upon the increasing of the weight loaded on the scale. When acquiring the calibration points, use the increasing calibration weights.
<i>Er 37</i>	Calibration error.	Repeat the calibration, checking that the capacity and division have been correctly set.
<i>Er 39</i>	Instrument not configured.	Reset the factory configurations (menu <i>AdUAnC</i> , parameter <i>dFLt.t</i> , see <i>page 46</i>).
<i>Er 85</i>	Instrument configured but not calibrated.	Perform calibration.
<i>C.Er. 36</i>	Calibration error.	Check that the signal coming from the load cell is not negative.
<i>Err.Not</i>	Unstable weight	Check in the menu <i>d.iAC</i> , parameter <i>AdC.uU</i> (see <i>page 39</i>) that the signal is stable and try again. If the connection of the cells is with 4 wires, check that the sense jumpers are inserted.

10. SUMMARY OF THE PARAMETERS

CAL	Calibration	11
dU	Division	11
0CAL	Zeroing the pre-tare (zero calibration)	12
GRAU	Area of gravity of the place of use	12
SERIAL	Configuration of the serial ports	13
CoNPE	PC port configuration (communication with PC, PLC or repeater)	13
Node	Selection of the communication mode	13
ProtoC	Communication protocol	13
CoNSEL	COM port selection for use as PC port	14
bAud	Communication speed (baud rate)	14
b it	Configuration of the serial protocol	14
CoNPrn	PRN port configuration (communication with printer or repeater)	15
Node	Selection of the communication mode	15
ProtoC	Communication protocol	15
bAud	Communication speed (baud rate)	15
b it	Configuration of the serial protocol	16
CTS	Printer control signal	16
PowerP	Printer power supply	16
AuH.1	Communication with PC, PLC or repeater	17
Node	Selection of the communication mode	17
ProtoC	Communication protocol	17
bAud	Communication speed (baud rate)	17
b it	Configuration of the serial protocol	18
AuH.2	Communication with PC, PLC or repeater	17
Node	Selection of the communication mode	17
ProtoC	Communication protocol	17
bAud	Communication speed (baud rate)	17
b it	Configuration of the serial protocol	18
uSb	Communication with PC, PLC or repeater	18
AdUAnC	Advanced configurations	19
rAd io	Connection port of radio-frequency module	19
tTLt iL	TTL port / Inclinometer activation	19
tErN	Closing character of each print line	19
iGnorE	Ignore unknown commands	19
LAYout	Print customisation	20
LANG	Print language settings	21
ChAr	Setting the font	21
hEAdEr	Print header	22
dAtA	Selection of the weight data	24
WEiGht	Progressive weighed	24
t iCkEt	Ticket/label progressive	24
CLoCk	Date and time	25
bArC39	Bar code 39	25
bArCwP	Barcode top margin (mm)	25
bArCL	Barcode left margin (mm)	25
bArCh	Barcode height (mm)	25
bArCdt	Selection of the weight data	26
CoPiES	Multi-copy prints	26

End.t.c	Paper outlet for end of ticket/receipt	26
bl.inE	White print head preheating line (thermal printer only)	26
LABEL	Label configuration	27
Lb.SAVE	Saving labels in printer memory	27
TEST	Test print all formats	27
Filter	Weighing filters	30
SCREEN	Adjusting the display	29
Backlit	Backlighting	29
brght	Brightness	29
Lock	Display lock (for use by the manufacturer)	29
Colour	Backlight colour	29
bAtt	Battery power supply	30
ECobAtt	Energy saving for battery operation	30
AutoOFF	Auto switch-off	31
RENotE	Remote control	31
An.out	Analogue output	32
inPutS	Digital inputs	34
outPut	Digital outputs	35
rESEt	Factory configuration reset	36
d.iAG	Diagnostics	36
AdC.uV	Converter (uV)	36
d.SPLA	Display	36
KEYb	Keypad	36
CTS	CTS status	36
outPut	Digital outputs	36
inPutS	Digital inputs	36
An.out	Analogue output	36
SER.nuN	Serial number	36
PrG.WEr	Firmware release	36
d.iU.int	Internal divisions	36
AdC.Pnt	Converter (ADC points)	36
btAdC	Battery voltage	36
PHAdC	Mains power supply voltage	36
SER.iAL	Bridge between serial ports	36
ADVAnC	Advanced	37
CALPAR	Calibration parameters	37
dec.in	Configuration of the decimal point	37
d.iU	Reading division	37
u.N.	Unit of measure	37
rAnGE 1	Scale capacity (maximum capacity / first weighing range)	38
rAnGE 2	For multirange scales (second weighing range)	38
rAnGE 3	For multirange scales (third weighing range)	38
EQuAL	Equalisation function	38
n.ChAn	Equalised analogue channels	38
EQuALP	Equalisation	39
CALAdU	Complete calibration	42
Stb.FLt	Additional stability filter	40
PEAK.FL	Anti-peak filter	41

MEtroL	Metrological parameters	41
OPErC	Reset percentage via key ⏴	41
d.UStb	Sensitivity of the weight stability control	41
t.nStb	Stability detection time	41
0.trH	Zero hold function (tracking)	41
0.trH.SP	Zero tracking speed	41
on.ZErO	Reset at power and reset percentage	42
CAL.AdJ	Re-acquisition / change of the calibration points in memory	42
CAL.MAn	Manual calibration (via insertion of ADC points)	42
d.SALE	Limitations for direct sales	42
KEYb	Type of keypad	42
t.iLt	Inclinometer (for use by the manufacturer)	42
rEACt	Reactivation of the print or weight totalisation function	43
LoCK.FAb	Permanent keypad lock (excluding key Ⓞ)	43
AL ib ir	Reset of fiscal memory (alibi memory, optional)	43
P in.tEE	Access PIN to programming menu	43
P in.uSE	Access PIN to user menus	43
dFLt.t	Total reset of memory and calibration	43

11. FAQ - Frequently Asked Questions

Calibration

Can I change the maximum capacity without recalibrating?

Yes, you must change the parameters `rRnGE 1.2.3` (Q-1-4,5,6). (See page 41)

Can I change the division without recalibrating?

Yes, you must change the parameter `d iU` (Q-1-2). (See page 40)

Can I change the position of the decimal point without recalibrating?

Yes, you must change the parameter `dEC iU` (Q-1-1) and the value of the calibration points using step `CAL .nRn` (Q-5-6). (See page 40 and 45)

Can I calibrate the instrument in “multi-division” mode?

Yes, using the advanced configuration function from PC and the Dinitools program.

Communication

Scale doesn't answer

- Check that the cable is in good condition and that there are no faults (use a multimeter).
- Check that the communication port of the PC or device being used is not compromised. If necessary, try another device / PC.
- Check that you have connected the cable to the correct serial port.
- Check step configuration `bRud` and `b iE5`. (See page 17)
- Temporarily activate continuous communication and retry string reception. If the string has been received correctly, carefully check the syntax of the command sent, the communication timeouts and the presence of the terminator.

Generic

The scale does not turn on

- Check that the input voltage level to the motherboard is correct.
- Try the forced power by inserting the “ON BOOT” jumper present on the motherboard. If the indicator lights up, check the correct operation of the keypad, using the diagnostics menu `d iRG`. (See page 39)
- Possible failure of the internal rechargeable battery (if present).

Notes

This publication, or portions thereof, may not be duplicated without written permission from the Manufacturer. All information in this manual is based on the data available at the time of its publication; the Manufacturer reserves the right to make changes to its products at any time, without notice and without incurring any penalty. We therefore recommend that you always check for updates.

The person responsible for the use of the scale must ensure that all safety regulations in force in the country of use are applied, ensure that the scale is employed in accordance with the intended use and avoid any dangerous situation for the user.

The Manufacturer declines all responsibility for any weighing errors.



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Stamp of the authorised service centre

