

Quick-Start Manual



Digital Weighing-Indicator **WE2110**

MA.WE2110.0e (QICK)

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INTRODUCTION

The HBM WE2110 is a precision digital indicator using the latest Sigma-Delta A/D converter to ensure extremely fast and accurate weight readings. This advanced technology allows the WE2110 to be configured for up to 100,000 divisions ($0.2 \mu\text{V}/\text{division}$) with up to 60 measurements per second. The WE2110 has extended sensitivity adjustment which can handle scales with outputs ranging from 0.2 to 3.0 mV/V for full range.

It is approved for legal for trade scales up to 6000 divisions in single range mode, or 2 x 3000 divisions in dual interval/range operation.

Serial outputs are provided standard in the WE2110 to communicate with external computers, printers and remote displays. Two Serial outputs are available providing RS-232. One can be set up to a RS422/485 interface for bus systems .

Optional accessory cards must be fitted to enable either the analogue output or the digital outputs to be used. Connection diagrams for these cards are provided separately.

This Manual

This quick-start manual contains all the information needed to set up and calibrate the WE2110. It can be used by those installers with some experience with digitally programmed indicators, or anyone who has used the WE2110 before. The manual makes use of simple flow charts where possible.

A reference manual is also available for those requiring more detailed information on the operation of the WE2110.

Safety precautions

The product normally presents no dangers provided the instructions and notes for layout, installation, correct operation and maintenance are followed.

- The safety and accident prevention regulations applicable to the particular application must be observed.
- Installation, setting up and servicing may be carried out by qualified personnel only.
- All connections service and repair work which requires the unit to be opened may only be carried out by qualified electricians.
- It is absolutely essential before installing the unit to check whether it is designed for 110-240 VAC or 12-24 VDC. Connecting a 12-24 VDC model to 230VAC will destroy the unit.
- If units are permanently connected a readily accessible 2-pole isolator must be provided.
- 12-24 VDC supply must be safely insulated of the extra low voltage from the power supply (EN 61010).
- The safety regulations of EN 61010 must be observed when connecting additional devices.
- The power supply must be switched off before the unit is opened.
- The change of the fuses is to be done by HBM only.
- The units are maintenance free

Screened cables must be used for all connecting cables to ensure the optimum EMC protection. The screen to be connected to the housing of the connectors in a flat way.

Cleaning

- Do not use any cleaning agent or solvent to clean the front panel of the WE2110. Use only a quite dry cloth for cleaning.

Delivery

Delivery contains:

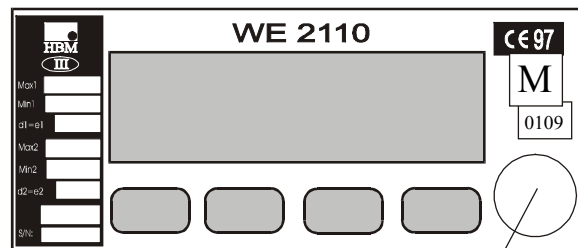
- Precision Indicator

One connector DB9 (male) for load cell connection

- Two connectors DB9 (female) for interface connections
- Quick-Start Manual
- Labels for the scales

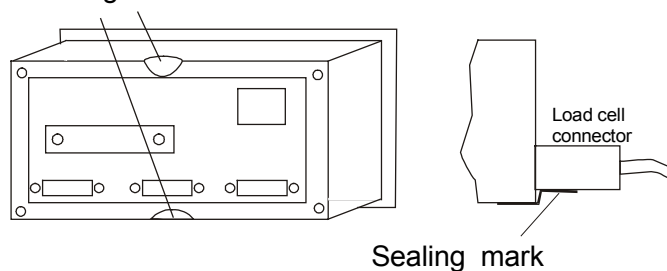
Cable for power supply is not included !

Verification- and Sealing Marks



Verification mark

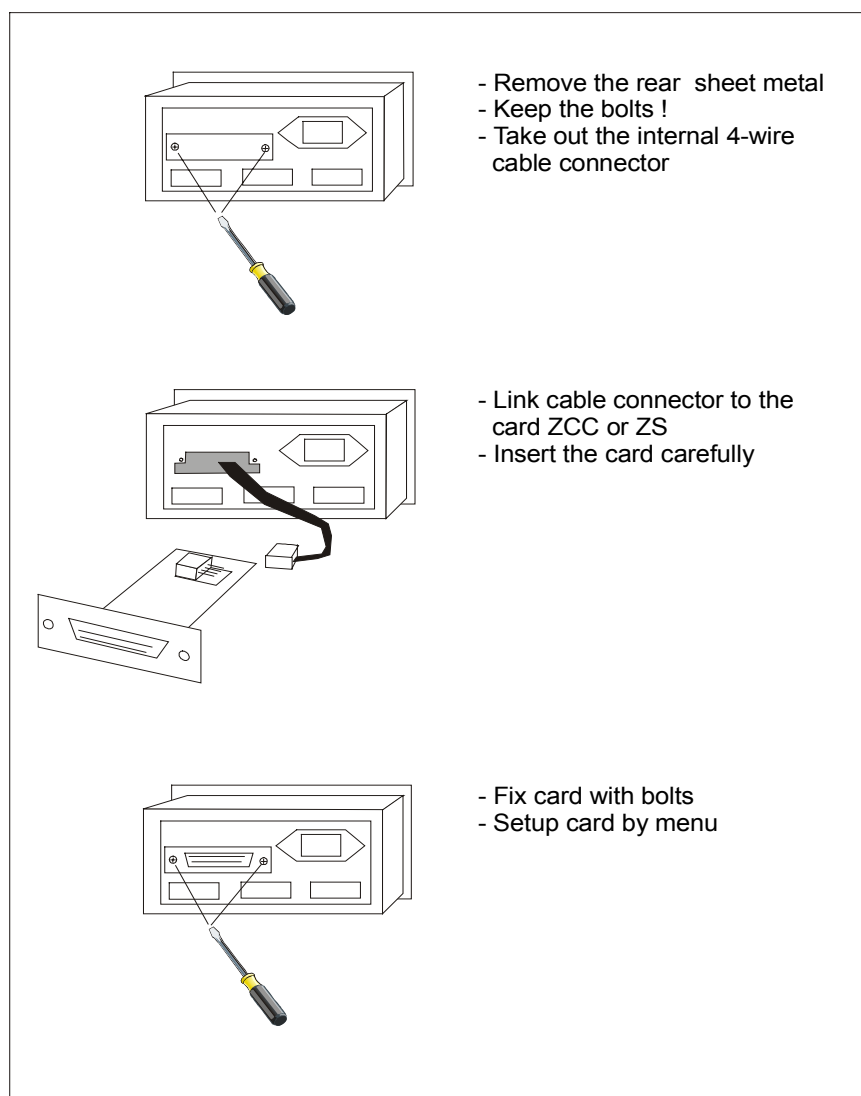
Sealing marks



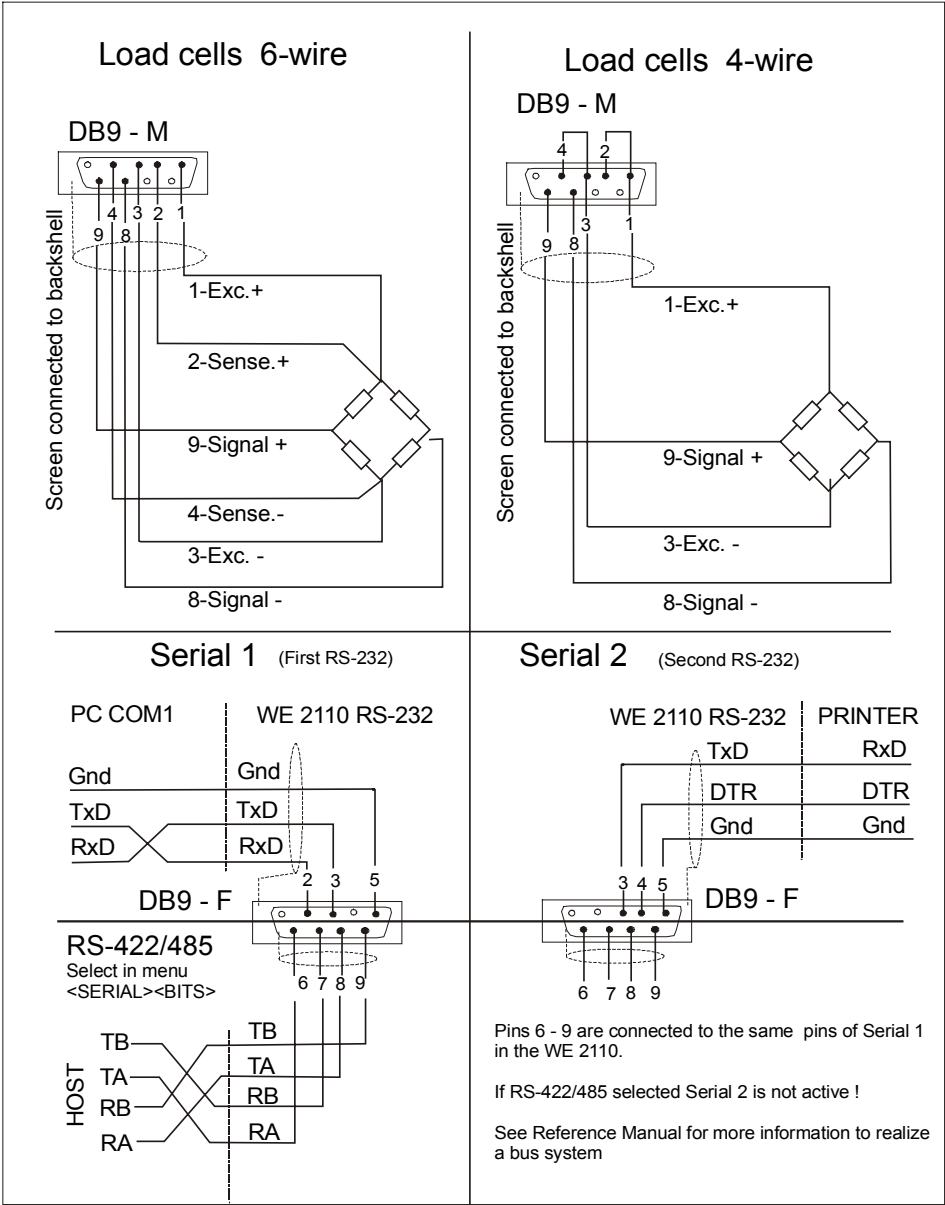
Sealing mark

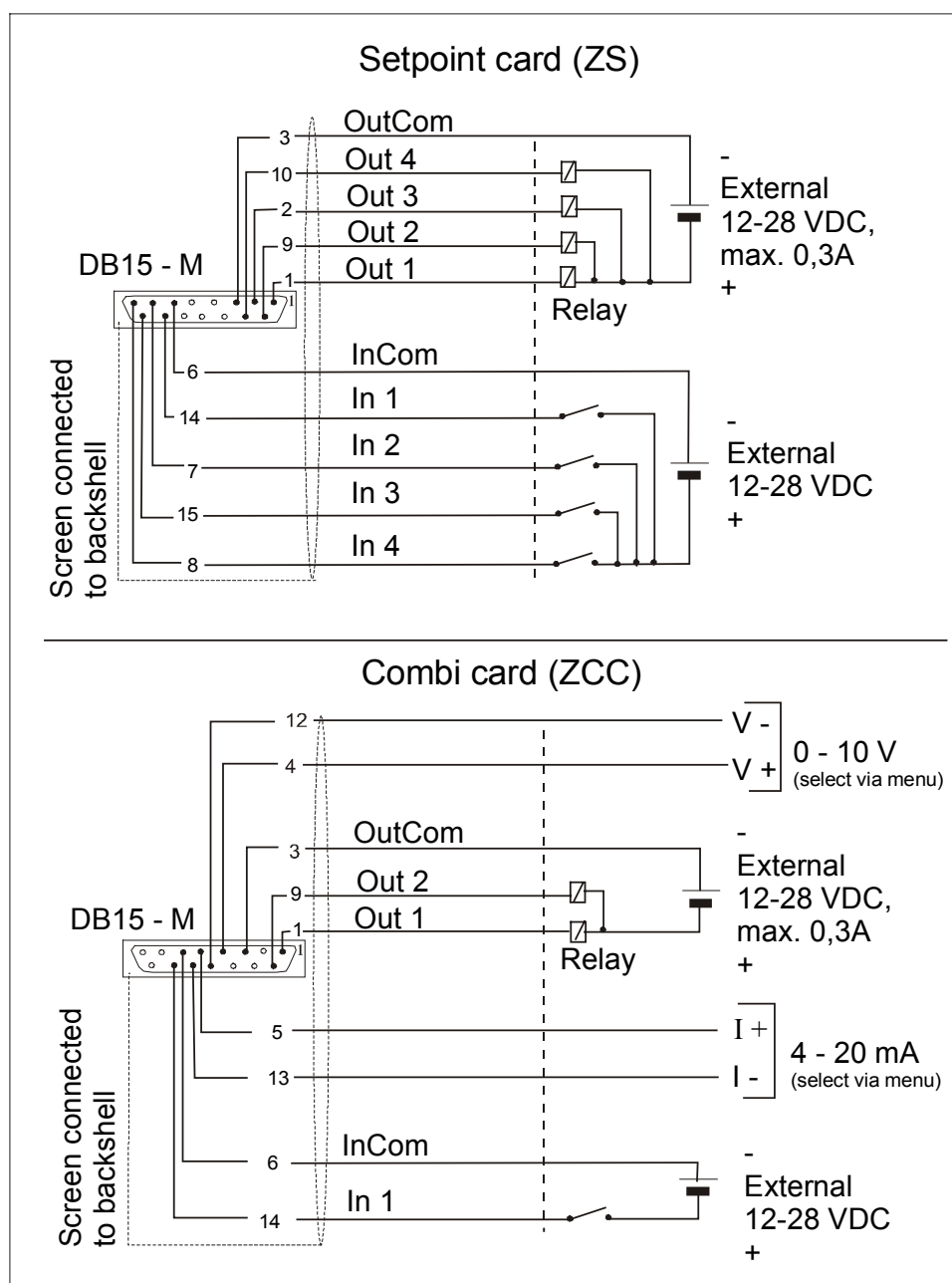
Mounting option card

Never change or assemble cards when unit is on power. The power supply board will be destroyed.



CONNECTIONS





INSTALLATION

The following steps must be followed to install the indicator.

1. First inspect the unit to ensure it is in good condition and all the required options are installed, and all the connectors required are available.
2. Use the connection diagrams to wire up the unit to the load cells, power and other external devices.
3. Follow the "Setting Up the WE2110" flowchart on the next page, to digitally set the unit (the section following the flow chart provides additional notes on the steps involved).
4. Refer to the calibration flowchart for the zero and span calibration steps and if necessary for the linearisation.
5. The unit can then be sealed for security if necessary.

First steps

- Connect the load cells and other devices
- Press the hidden setup key with a pencil
- Wait until BUILD is displayed
- Select the scale type <BUILD> <TYPE>
(Items: SINGLE range, DUAL Range, DUAL Interval, DIRECT mV/V)
- Enter decimal point <BUILD> <DP>
- Enter scale capacity 1 <BUILD> <CAP1>
- Enter verification interval e1 <BUILD> <E1>
(Only valid: 1,2,5,10,20,50,100)
- Enter scale capacity 2 <BUILD> <CAP2>
(if dual range/interval selected)
- Enter verification interval e2 <BUILD> <E2>
(if dual range/interval selected)
- Select Additive Tare value <BUILD> <AD.TARE>
- Select unit <BUILD> <UNITS>

- Go to the CAL menu with the SELECT GROUP Key
- Do a zero calibration <CAL> <ZERO>
See page 21 for the flow chart. The process time is depending on the selected average filter setting. It takes approx. 15 sec @ filter 10.
- Do a span calibration <CAL>
See page 21 for the flow chart. The process time is depending on the selected average filter setting. It takes approx. 15 sec @ filter 10.
- Select further settings in the OPTION menu
- Enter/select further settings

Starting the Digital Setup

Digital setup and calibration is carried out entirely from the front panel using the secondary functions on the Control Buttons. There are two methods of entering the digital setup program.

The first setup access method is by removing the security screw at the right of the keypad, and pressing the hidden button behind the screw. This setup program allows all steps to be accessed, including calibration.

The second method involves pressing the Gross/Net button for at least 2 seconds. This also allows access to the setup, but all critical steps controlling the calibration and trade operation of the WE2110 cannot be accessed. This allows all other digital functions to be accessed without risk to the basic calibration. Once configured and calibrated, the WE2110 can be pass-code protected to prevent un-authorized tampering. If the scale has been previously pass-code protected, the correct code will need to be entered before setup can start.

SETTING UP THE WE2110 - PART 3					SEE NOTE
TRADE SAFE		SELECT CHANGE		LIMITATIONS TO OIML R76	
ZERO SELECT GROUP 0 → ← TARE SELECT ITEM ↑ → ←	SERIAL ↔ SERIAL SER 1 ↑ SER 2 ADDRESS ↔ AUT.OPT	GROSS / NET 52 ↕ PRINT ○ CHANGE	SERIAL OUTPUT 1 SERIAL OUTPUT 2 NETWORK ADDRESS TYPE SOURCE CUSTOM. FORMAT START CHARACTER 1st END CHAR. 2nd END CHAR.. TYPE OF PRINTOUT EDIT HEADER CUSTOM. PRINTOUT POS. OF PRINTOUT	OFF / AUTO.LO / AUTO.HI / SINGLE / NET OFF / AUTO.LO / PRINT / SINGLE 00 TO 31 AUTO.A AUTO.B, AUTO.C / AUTO.D CUSTOM NET / TOTAL / DISP / GROSS No . ASCII CODE ASCII CODE (Default 02) ASCII CODE (Default 03) ASCII CODE (00) = NONE SING / DOUB / TIC / A.SING / A.DOUB / A.TIC / TOTAL / A.TOTAL LINE . No . ASCII CODE No . ASCII CODE COLUMNS . ROWS	23 24 25 26 27 28 29 30 31 32 33 34 35

SETTING UP THE WE2110 - PART 4					LIMITATIONS TO OIML R76	SEE NOTE
SELECT GROUP	TRADE SAFE	SELECT CHANGE	PRINT CHANGE			
						
	 BAUD	BAUD RATE		300 TO 19200		36
	 BITS	PROTOCOL		VARIOUS - (Default: n81-2-) see Handbook		37
 SPECIAL	 SAFE.PC	SET SAFETY PASSCODE		0 TO 999999 (0 = NONE)		38
	 FULL.PC	SET FULL PASSCODE		0 TO 999999 (0 = NONE)		39
	 BUTTON	BUTTON LOCKS (OR INSTANT)		YES, NO (LOCK), OR INSTANT	Y / n	40
	 IN.FN	INPUT FUNCTIONS		- / 0 / t / G / P / b / L / S / C / u / 1 / 2 / H / E		41
	 SYNC	A/D SYNCRONISATION		15 TO 60 HZ		42
 TEST	 SCALE	mV / V TEST DISPLAY		ON / OFF (5 SEC. in SAVE-SETUP)		43
	 HI.RES	x10 RESOLUTION DISPLAY		ON / OFF (5 SEC. in SAVE-SETUP)		44
	 FORCE OUT	FORCE DIGITAL OUTPUTS		OFF / ON1 / ON2 / ON3 / ON4		45
	 TEST INPUT	INPUT TEST MODE		(-) = OFF / (1) = ON		46
	 OVERLOAD	SHOW NUMBER OF OVERLOADS		DELETE COUNTER IN SAFE SETUP		47

SETTING UP THE WE2110 - PART 5									
TRADE SAFE			GROSS / NET SELECT CHANGE		PRINT CHANGE		LIMITATIONS TO OIML R76		SEE NOTE
ZERO → 0 ← SELECT GROUP			TAKE → T ← SELECT ITEM		ENABLE SETPOINT		- / A / M / 0 / E / N		48
SEEEEE SETPOINTS			ACTIVE LOFF LOCK		LOCK CHANGES		(L) = LOCK OUT CHANGES		49
SOURCE			5P1		WEIGHT DATA SOURCE		(G) = GROSS / (n) = NET		50
DIRECTION			DIR		SWITCHING DIRECTION		(O) = OVER / (U) = UNDER		51
LOGIC			LOFF		ACTIVE RELAY LOGIC		(L) = LOW / (H) = HIGH		52
ALARM			ALHFF		ALARM BEEP OPTIONS		(.) = OFF / SOUNDS: (S / D / C) DISPLAY FLASH (f)		53
EEFFEE TARGET			EEFFEE TARGET		TARGET VALUE SETPOINTS		SET IN WEIGHT UNITS		54
HYS			HYS		HYSTERESIS VALUE		SET IN WEIGHT UNITS		55
FILE FLIGHT			FILE FLIGHT		IN-FLIGHT VALUE		SET IN WEIGHT UNITS		56

SETTING UP THE WE2110 - PART 6					LIMITATIONS TO OIML R76	SEE NOTE
SELECT GROUP	SELECT ITEM	TRADE SAFE	GROSS / NET SELECT CHANGE	PRINT CHANGE		
ZERO → 0 ← SELECT GROUP TARE → T ← SELECT ITEM	↔ ↕ ANALOG ↔ ↕ SOURCE ↔ ↕ TYPE ↔ ↕ CAL LOW ↔ ↕ CAL HI ↔ ↕ FRC.ANL		SOURCE FOR ANALOG TYPE OF ANALOG OUTPUT FINE CALIBRATION - UP / DN FINE CALIBRATION - UP / DN FORCE ANALOG OUTPUT	DISP / GROSS / NET VOLT / CUR / ABS:CUR CHANGE VALUE CHANGE VALUE LO / HI	57 58 59 60 61	
↔ ↕ CLOCK ↔ ↕ TIME ↔ ↕ DATE ↔ ↕ QA.OPT ↔ ↕ QA.DATE	↔ ↕ TIME ↔ ↕ DATE ↔ ↕ QA.OPT ↔ ↕ QA.DATE	↔ ↕ TIME ↔ ↕ DATE ↔ ↕ QA.OPT ↔ ↕ QA.DATE	SET THE TIME SET THE DATE SET THE QA-MODE SET QA DAY and YEAR	00 . HH . MM (24 HOUR) DD . MM . YY (00 FOR 2000) OFF / ON ENTER DD.MM / YYYY	62 63 64 65	
↔ ↕ FACTORY TO BUILD ↔ ↕ FACTORY DEFAULT ↔ ↕ FAC. RESET ↔ ↕ PRN.CFG	↔ ↕ FACTORY DEFAULT ↔ ↕ FAC. RESET ↔ ↕ PRN.CFG	↔ ↕ FACTORY DEFAULT ↔ ↕ FAC. RESET ↔ ↕ PRN.CFG	RESTORE FACTORY SETUP FACTORY ACCESS ONLY PRINT OUT WHOLE SETUP	N / Y CONTINUE Y/N	66 67 68	
↔ ↕ -END- ↔ ↕ -END-	↔ ↕ LEAVE SETUP (ALTERNATIVE PRESS "SETUP")				69	

NOTES ON DIGITAL SETUP

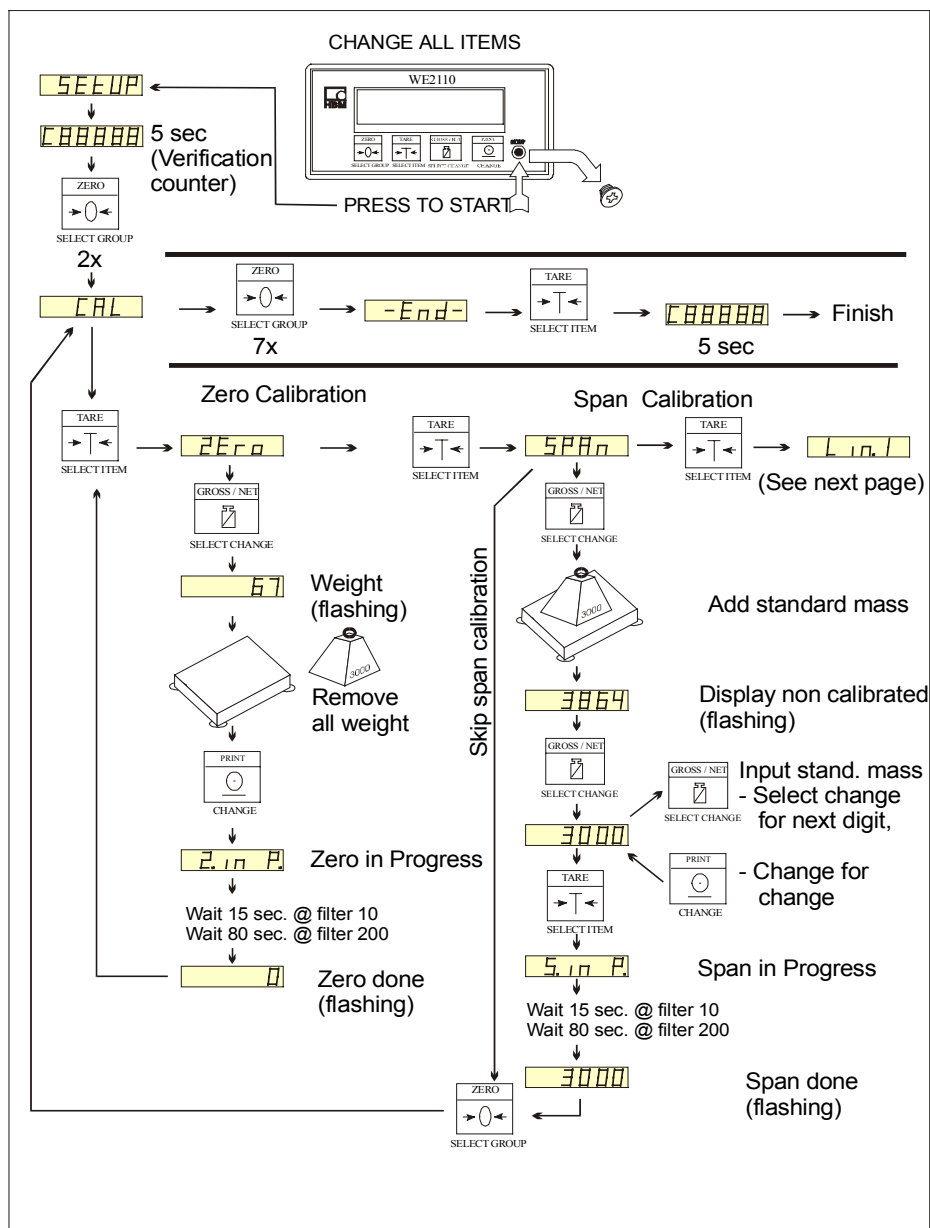
1	"Sing" = single range, "Dual I" = dual interval, "Dual r" = dual range and „Direct“ = direct mV/V calibration.
2	Sets the decimal position before weight range input.
3	Enter the full scale weight (Max) for single interval, or (Max1) for dual interval/range. Use units of displayed weight (not divisions).
4	Enter the verification interval (e) for single interval, or (e1) for dual interval/range. Use units of displayed weight.
5	Enter (Max2) for dual interval/range.
6	Enter e2 for dual interval/range.
7	Additive Tare limit in weight. ! The max. load of the scale (e.g. CAP1) is exceeded by that value !
8	The weight unit set here will be used for the display and any printer output.
9	Trade use has some limitations. See Reference-Handbook for that.
10	This is the number of readings that will be averaged for display (relative to synchronization speed - see item 42).
11	Anti-jitter prevents minor display instability with small average filter settings.
12	Motion detection rate is set in the number of e1 per ½ second or per second. (See item 4 for e1).
13	Enables the initial zero setting at power-on. The fixed setting range is –5% ... +15%.
14	Zero Tracking rate is set in the number of e1 per ½ second or per second. (See item 4 for e1).
15	This sets the range of operation of the ZERO setting.
16	The band around zero is defined. This is used by the zero track function and the printout.
17	Deactivate the error message E0040-00C0. Useful for EX-I applications if the voltage drop at the load cells is too high. Default is activated (on).
18/ 19	See separate chart for Zero and Span Calibration. Some digital settings can effect calibration, always complete digital Setup before calibrating. Enter zero and span in mV/V with direct-mV/V-calibration.
20/ 21	Linearity Routine. See diagram page 22
22	Cancels existing calibration and restores original factory default calibration.

23	The Serial 1 output can be set to OFF, Auto.Lo (ca. 10/sec), Auto.Hi (ca. 50/sec), Single transmit by remote key, or Network.
24	The Serial 2 output can be set for OFF, Auto.Lo (ca. 10/sec), Single transmit, or Printer driving.
25	The network address can be set from 00 to 31.
26	Type of automatic output can be set. Auto.A is the standard HBM format, Auto.B, Auto.C or Auto.D are extended with units fields etc. See the Reference-Handbook for more information about automatic output formats.
27	Source for automatic output can be selected.
28	Custom Auto format. See the Reference-Handbook for more information about automatic output formats.
29	Allows the output string START character to be defined (normally 02).
30	Allows the output string first END character to be defined (normally 03).
31	Allows the output string second END character to be defined (00 = none).
32	Type of printer output can be set. Print outs can be done in single line, double line, total, or printed ticket. "A" or Automatic printing is identical to manual printing, but occurs on stable weight.
33	A custom printer header can be set up for up to 2 lines of 20 characters. Each character is displayed as L.CH.CCC where L = line number (1-2), CH = character number (01 to 20) and CCC is the character code (in decimal ASCII).
34	A custom format for the printout can be entered. Max. 50 characters are allowed. Format NNN.CCC, where NNN = number of the character, CCC = ASCII code. For more information refer to Reference-Handbook.
35	Positioning of the printout. First parameter for the horizontal position, second parameter for the vertical position.
36	The baud rate controls both serial 1 and serial 2 outputs. Different baud rates for each interface are not possible
37	Controls the data flow. Each character set as shown on the table below. N, O,E parity is set for none, Odd or Even 8, 7 The number of data bits 1, 2 The number of stop bits t, - enable or disable RS485 termination resistors 2, 4 2 = RS232; 4 = RS485/RS422 d, - enable or disable DTR handshake for printer
38	The Safety pass-code controls access to the SAVE Setup using the "Select Change" key. (If „000000“ is set, no password is needed).

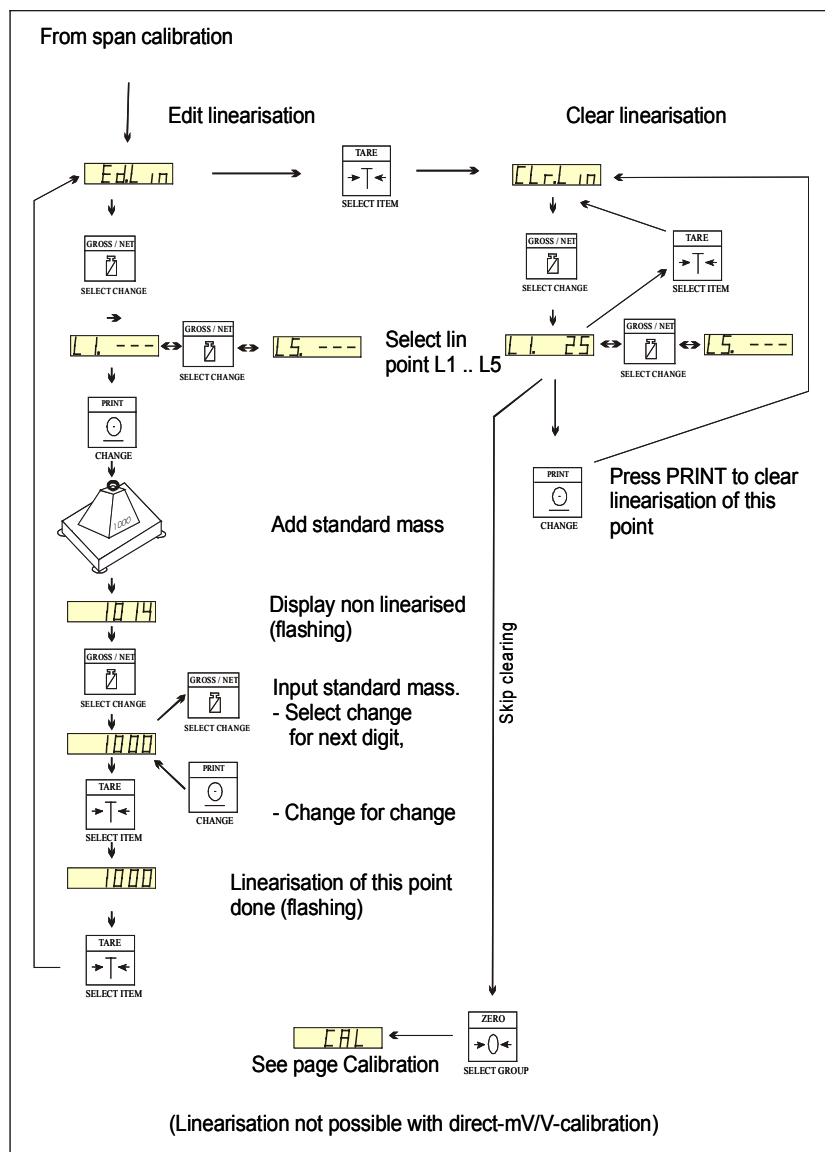
39	The Full pass-code controls access to the FULL Setup (hidden screw) using the SETUP key and controls settings through the interface.		
40	Individual keys can be enabled (Y), disabled (N) or set for instant operation (I) without a delay for No Motion.		
41	Input function are selected. Card ZS provides 4 inputs, card ZCC one.		
	0 = Zero Key P = Print Key S = Show Total 1 = Single Transmit to Serial 1	t = Tare Key b = Blank Display C = Clear Total 2 = Single Transmit to Serial 2	G = Gross Key L = Lock WE2110 U = Undo Print H = Hold Display E = Peak F = Live animal hold
42	The speed of the A/D converter can be set to synchronize with the primary frequency of scale vibration for extremely high noise rejection. As a standard the mains frequency is convenient. Warning - this setting effects calibration.		
43	Allows the special mV/V display mode to be selected for scale base testing for 5 seconds.		
44	Allows the special high resolution (x10) display mode to be selected for scale base testing.		
45	Allows the outputs to be forced ON one at a time.		
46	Shows a test display for the remote inputs with 0 = off and 1,2,3,4 = on.		
47	Shows the number of overloads (>130%) of the scale. In safe setup the counter can be set to zero.		
48	Allows individual setpoints to be enabled. Card ZS provides 4 outputs, card ZCC two.		
	A = Active Limit Switch 	M = Motion Indication E = Error Indication	0 = Zero Indication N = Net Indication
49	Stops the operator changing the Limit Switches using the (TARE) button long press.		
50	Limit Switches can be set to trigger from Gross or Net weights.		
51	Sets the In-flight and hysteresis for tripping on <u>Increasing</u> or <u>Decreasing</u> weight for Limit Switches.		
52	Sets the sense of the output drivers for positive or negative logic		
53	Setpoint alarm sounds may be set to OFF, Single, Dual, Continuous or display flashing (f) is set.		
54	The TARGET for output 1..4 can be entered in displayed weight units.		

55	The HYSTERESIS for output 1..4 can be entered in displayed weight units.
56	The (optional) IN-FLIGHT for output 1..4 can be entered in displayed weight units.
57	Source for analogue output.
58	Select VOLT for -10 .. 10 V output, CUR for 4 .. 20 mA, ABS.CUR for absolute 4 .. 20mA e.g. for loss in weight systems
59	Fine calibration of the low level - either 0 Volt or 4 mA
60	Fine calibration of the high level - either 10 Volt or 20 mA
61	Allows the analogue output card to be tested by forcing the output either low or high.
62	The time is set similar to a normal digital clock (using 24 hour format).
63	The date is set using European format. The clock allows for year 2000.
64	Activate the QA-feature. From the entered date the WE2110 will ask for maintenance .
65	The date for maintenance.
66	This step will delete ALL digital setup (but not calibration !) and return the WE2110 to the original factory defaults. To restore the factory calibration see item 22.
67	Factory setting only.
68	Print out the WE2110 setup
69	The exit point from digital setup. Press "Select Item" button to exit. Press "Select Group" button to continue setup.

CALIBRATION

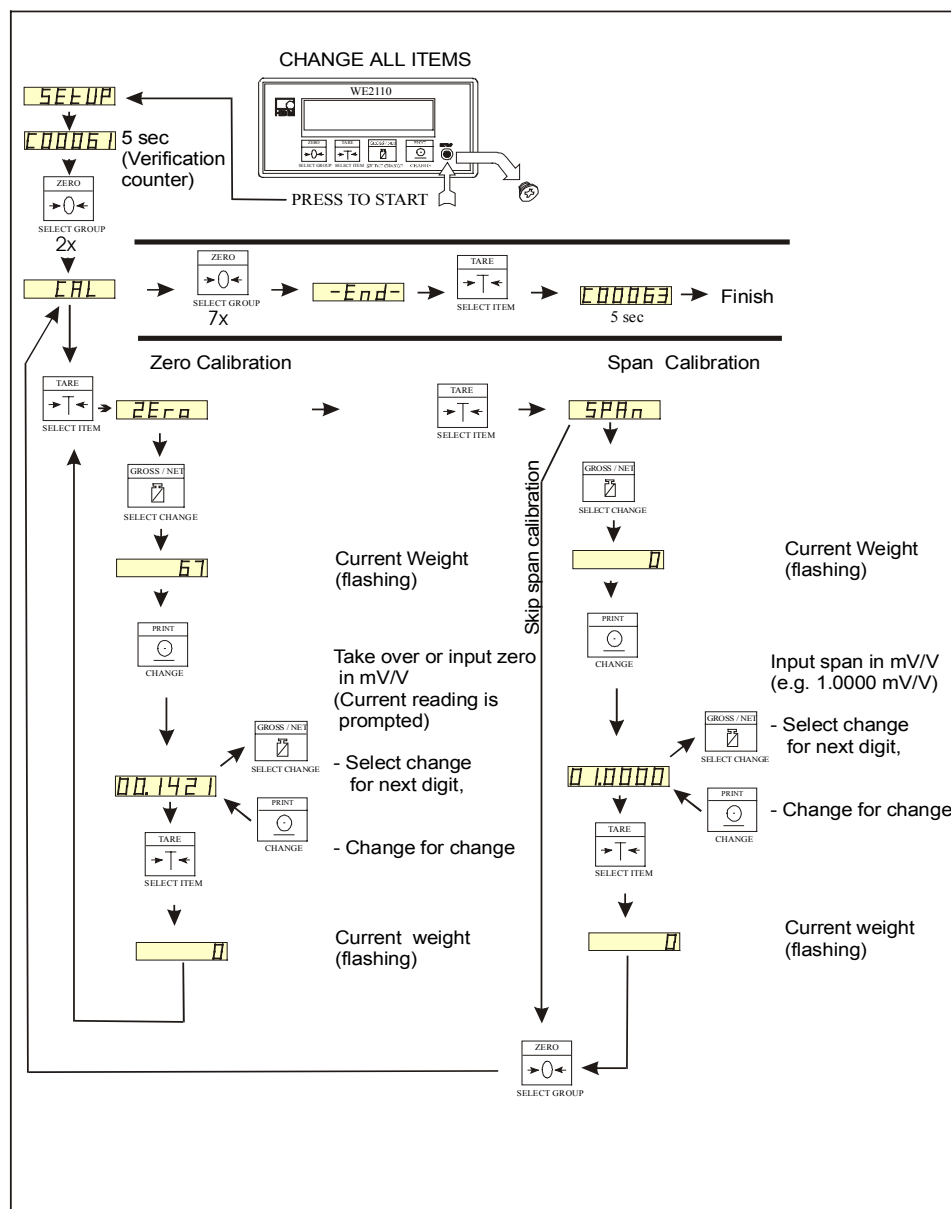


LINEARISATION



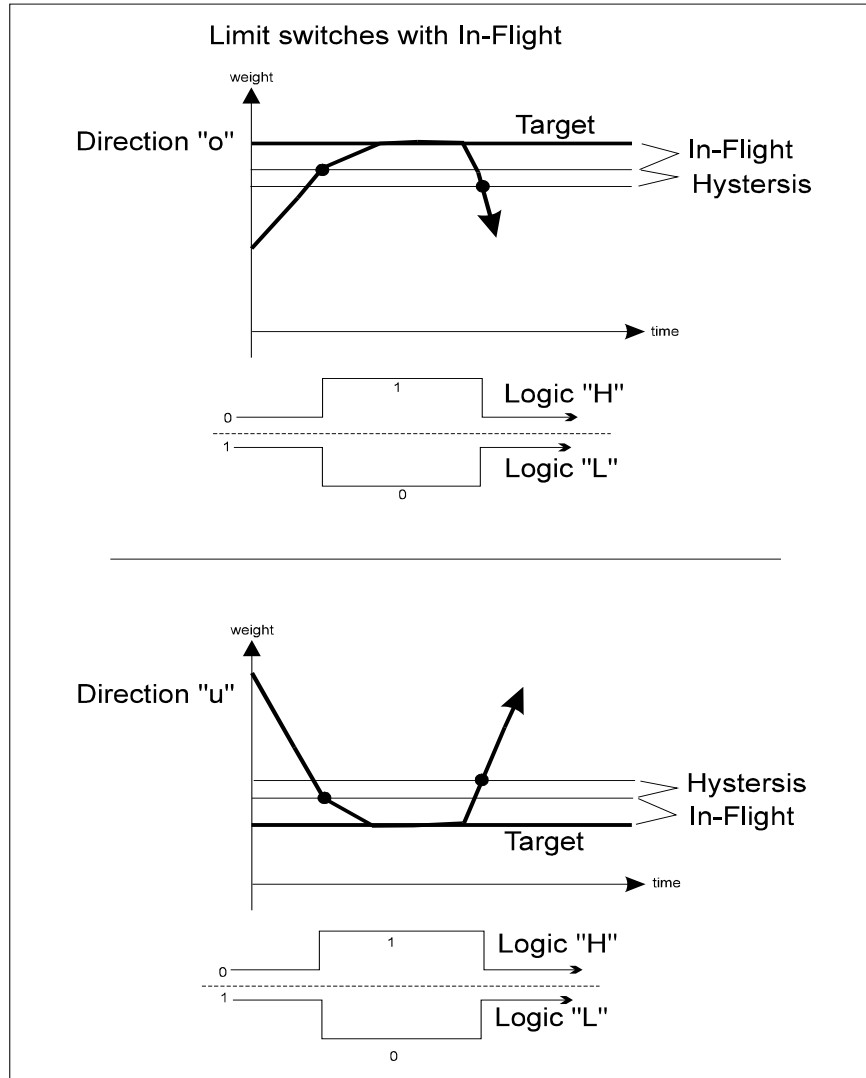
CALIBRATION in mV/V

Scale type "DIRECT" within the BUILD menu has to be selected



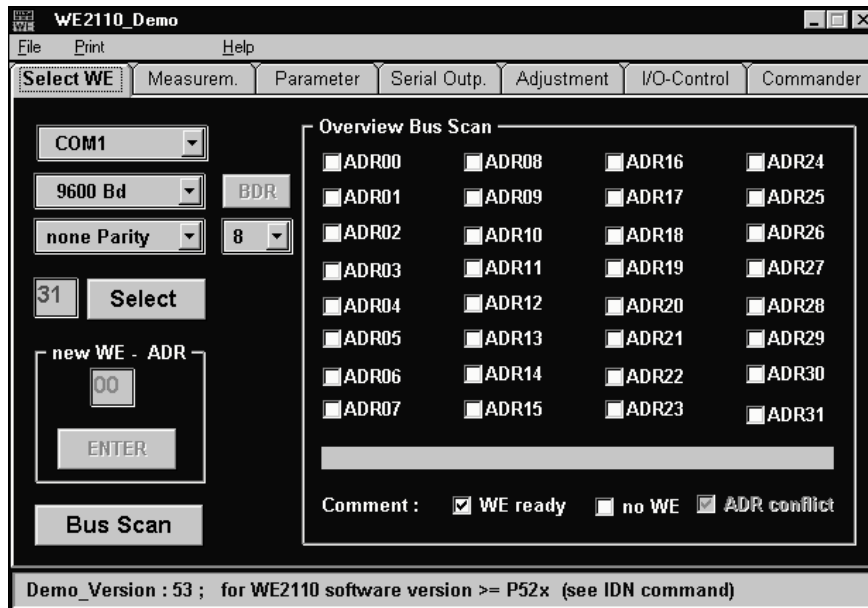
LIMIT SWITCHES

If the optional setpoints have been used, the setpoint target values can be accessed by pressing the TARE button for 2 seconds.



WE2110 DEMO SOFTWARE

The optional WE Demo Software from HBM allows the operation of all functions and settings through a PC. A standard setup can be stored and used for other units as well. Additionally an integrated commander enables direct access to the WE2110 by the command set. This software can be ordered together with the Reference-Handbook with order no. 1-WE2110/DOC.



TOTALISING

The WE2110 can add single weight and store the sum in an internal storage. The following steps are needed for that:

- Select printer type TOTAL or A.OTAL
- If SERIAL 2 is set to PRINT then the output goes to the printer as well. If set to OFF the output goes only to the display.
- Pressing the PRINT-Key forces the WE2110 to add the current weight to the sum. The W2110 displays (COUNT) (000004) – no of items is four, followed by (TOTAL) (003456) – sum is 3456.
- Pressing the PRINT-Key for 2 seconds does not add, but displays the no of items and sum again, print out this information if selected and deletes the sum.
- Using external keys in connection with the optional setpoints the following extended functions can be realized:
 - Display the sum w/o deleting it
 - Display sum and delete – as 2 seconds PRINT-Key
 - Undo last print

PEAK STORAGE, FREEZE DISPLAY, LIVE ANIMAL

Using external keys in connection with the optional setpoints the following extended functions can be realized. These functions are only possible in the INDUSTRIAL mode:

Peak storage

- First press peak value is displayed – unit flashes
- Second press back to normal display
- 2 seconds press sets the storage to zero

Freeze of the display

- First press display is on hold –unit flashes
- Second press back to normal display

Live Animal Hold

- Short press shows -----. After that freezed value is shown–unit flashes
- Long press returns to normal display

ERROR MESSAGES

Weighing Errors

(U-----)	The weight is below the minimum allowable weight reading.
(O-----)	The weight is above full range.
(ZERO) (ERROR)	The weight reading is beyond the limit set for Zero operation
(STABLE)(ERROR)	Scale motion has prevented a Zero, Tare or Print operation from occurring on command.
(PRINT) (ERROR)	A printer problem has prevented the printout from being completed. (No power, no paper, cable fault)
(CAL) (DUE)	Maintenance is due ! Call your scale supplier.
(PRINT)	WE2110 is currently printing.
(SAVING)	WE2110 is currently writing to the EEPROM

Setup Errors

(RES) (LO)	The scale build is configured for less than 100 verification intervals
(RES) (HIGH)	The scale build is configured for more than 100,000 verification intervals
(CHEC) (TRADE) ! Note: This error is not displayed if parameters are set via the interface !	At least one parameter is not acc. to EN45501 requirements. Check the trade relevant items. This is only displayed in trade mode when leaving setup. Error numbers: 1 = Verification interval e1 or e2 > 50 2 = Graduations > 6000d 3 = No weighing unit selected 4 = Motion set to NONE 5 = Zero tracking not OFF or 0,5d/s 6 = Zero setting range not $\pm 2\%$ or -1% $+3\%$ 7 = Zero dead band not set to 000000 8 = Buttons set for immediate operation 9 = Type set to direct mV/V calibration

Calibration Errors

(ZERO) (HI)	The load cell output is beyond allowable zero calibration range.
(ZERO) (LO)	The load cell output is below allowable zero calibration range.
(SPAN) (LO)	The load cell signal range (span) is too small for these settings.
(SPAN) (HI)	The load cell signal range (span) is too large for these settings.
(NO) (ZERO)	A new WE2110 must be zero calibrated before span calibration.

Diagnostic Errors

(E 0001)	The power supply voltage is too low. (check supply)
(E 0002)	The power supply voltage is too high. (check scale / cables)
(E 0004)	The load cell excitation voltage is too low. (check scale)
(E 0008)	The load cell excitation voltage is too high. (check scale)
(E 0010)	The temperature is outside of allowable limits. (check location)
(E 0020)	Count-by setting is too high or low for the set scale capacity
(E 0040/80/C0)	One or both load cell excitation sense lines is not connected. The error message can be deactivated with <OPTION><SENS.CH><OFF> e.g. for EX-I applications.
(E 0100)	The digital setup information has been lost. (restore setup)
(E 0200)	The calibration information has been lost. - (re-calibrate)
(E 0300)	All setup information has been lost - (enter setup and calibrate)
(E 0400)	The factory configuration information has been lost. (service)
(E 0800)	The EEPROM memory storage chip has failed (service)
(E 8000)	The EPROM memory storage chip has failed (service)

The "E" type error messages are additive. For example if a condition is detected where the power supply voltage is low, resulting in a reduction of excitation voltage, the resulting Error messages will be E0005 (0001 + 0004).

Declaration of Conformaty



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Konformitätserklärung

Declaration of Conformity

Déclaration de Conformité

Document: 100/03.2000

Wir,

We,

Nous,

HBM Wägetechnik GmbH, Darmstadt

erklären in alleiniger Verantwortung,
dass das Produkt

declare under our sole responsibility
that the product

déclarons sous notre seule responsabilité
que le produit

Digitaler Wägeindikator

Typen: WE2110, WE2110DC, WE2110/BLANK, WE2110DC/BLANK

mit Optionen (s. Seite 2)

auf das sich diese Erklärung
bezieht, mit der/den folgenden
Norm(en) oder normativen
Dokument(en) übereinstimmt (siehe
Seite 2) gemäß den Bestimmungen
der Richtlinie(n)

to which this declaration relates is
in conformity with the following
standard(s) or other normative
document(s) (see page 2)
following the provisions of
Directive(s)

auquel se réfère cette déclaration
est conforme à la (aux) norme(s)
ou autre(s) document(s)
normatif(s) (voir page 2)
conformément aux dispositions
de(s) Directive(s)

73/68/EWG Richtlinie des Rates vom 19.02.1973 zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten
betreffend elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen,
geändert durch die Richtlinie 93/68/EWG vom 22.07.1993

89/336/EWG Richtlinie des Rates vom 03.05.1989 zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten
über die elektromagnetische Verträglichkeit, geändert durch 91/263/EWG, 92/31/EWG und
93/68/EWG

Die Absicherung aller produkt-
spezifischen Qualitätsmerkmale
erfolgt auf Basis eines von der DQS
(Deutsche Gesellschaft zur Zertifizierung
von Managementsystemen) seit 1986
zertifizierten Qualitätsmanagementsystems
nach DIN ISO 9001 (Reg. Nr. DQS - 00001).
Die Überprüfung der sicherheits-
relevanten Merkmale (Elektromagnetische
Verträglichkeit, Sicherheit elektrischer
Betriebsmittel) führt ein von der DATech
erstmalig 1991 akkreditiertes Prüflaboratorium
unabhängig im Hause HBM durch
(Reg. No. DAT-P-006/DAT-P-012).

All product-related features are
secured by a quality system in
accordance with DIN ISO 9001,
certified by DQS (Deutsche Gesellschaft
zur Zertifizierung von Managementsystemen)
since 1986 (Reg. No. DQS - 00001).
The safety-relevant features
(electromagnetic compatibility,
safety of electrical apparatus) are
verified at HBM by an independent
testing laboratory which has been
accredited by DATech in 1991 for
the first time
(Reg. No. DAT-P-006/DAT-P-012).

Chez HBM, la détermination de
tous les critères de qualité relatifs
à un produit spécifique est faite sur
la base d'un protocole DQS
(Deutsche Gesellschaft zur Zertifizierung
von Managementsystemen) certifiant, depuis 1986,
notre système d'assurance qualité
selon DIN ISO 9001 (Reg. Nr. DQS - 00001).
De même, tous les critères de
protection électrique et de
compatibilité électromagnétique
sont certifiés par un laboratoire
d'essais indépendant et accrédité
depuis 1991
(Reg. No. DAT-P-006/DAT-P-012).

Darmstadt, 02.01.2000

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Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, beinhaltet jedoch keine Zusicherung von Eigenschaften. Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

This declaration certifies conformity with the Directives listed above, but is no asseveration of characteristics. Safety directions of the delivered product documentation have to be followed.

Cette déclaration atteste la conformité avec les directives citées mais n'assure pas un certain caractère. S.v.p. observez les indications de sécurité de la documentation du produit ajoutée.

Folgende Normen werden zum Nachweis der Übereinstimmung mit den Vorschriften der Richtlinie(n) eingehalten:

The following standards are fulfilled as proof of conformity with the provisions of the Directive(s):

Pour la démonstration de la conformité aux disposition de(s) Directive(s) le produit satisfait les normes:

EN 50082-2 : 1995

Elektromagnetische Verträglichkeit (EMV); Fachgrundnorm Störfestigkeit; Teil 2: Industriebereich; Deutsche Fassung

EN 55011 : 1998

Funk-Entstörung von Elektrischen Betriebsmitteln und Anlagen; Grenzwerte und Meßverfahren für Funkstörungen von industriellen, wissenschaftlichen und medizinischen Hochfrequenzgeräten (ISM-Geräten) (CISPR 11 : 1990, modifiziert); Deutsche Fassung; Klasse B

EN 45501 : 1992

Metrologische Aspekte nichtselbsttätiger Waagen; Deutsche Fassung; Anhang B3: Funktionsprüfungen unter Störeinflüssen

EN 61010-1 : 1993

Sicherheitsbestimmungen für elektrische Meß-, Steuer-, Regel- und Laborgeräte; Teil 1: Allgemeine Anforderungen (IEC 1010-1:1990 + A1:1992, modifiziert); Deutsche Fassung

Optionen:

WE2110/ZS mit digitaler I/O-Karte; WE2110/ZA mit Analogausgang (4...20mA, 0...10V); WE2110/ZCC mit Kombi-Karte

SPECIFICATIONS

Type		WE2110
Accuracy class		6000d acc. to EN 45501
Number of verification intervals OIML R76		6000d ; 2x3000d
Input Sensitivity	$\mu\text{V/e}$	$\geq 0,2$ ($\geq 1,0$ OIML)
Measuring range	mV/V	0 – 3,5
Input zero range	mV/V	± 2
Weighing unit		g, kg, t, lb
No. of load cells		8 x 350 Ohm
Load cell excitation	V	8 DC (short circuit proof)
Load cell connection		6 or 4 wire
Load cell cable length	m/mm ²	< 580
Linearisation		5 intermediate points
Measuring rate	Hz	60
Filter low pass (digital)		1/1 - 1/200 moving average
Zero track window	d/sec	off - 32
Motion detection window	d/sec	off - 32
Interface 1		full duplex RS-232, RS-485 (4-wire)
Interface 2		RS232 for printers, remote displays
Cable length RS232 RS485	m	≤ 25 ≤ 1000
Baud rate, adjustable to	baud	300 - 19200
Power supply	VAC	110 - 240, 48 - 60 Hz
DC-version	VDC	12 - 24 nom., 10 - 30 max.
Power consumption	VA	10
Nominal temp. range	°C	- 10 ...+ 40
Operation temp. range	°C	- 10 ...+ 60
Storage temp. range	°C	- 40 ...+ 70

Display		6 digit green LED
Digit height	mm	14
Status symbols		Zero,gross,net,motion,units (g, kg, lb, t), setpoints
Keys	Foil keys with tactile and audible feedback	
Dimensions w/o connectors (l x w x h)	mm	150 x 115 x 72
Front panel	mm	144 x 72
Front panel cut-out (DIN 43700)	mm	138 x 68
Weight approx.	kg	1
Protection class to IEC529		IP 40
Protection class of front only (IEC529)		IP 65
Housing Material		Aluminum, painted
Optional Combi-Card WE2110/ZCC		
Analogue outputs		4-20 mA or 0-10 V, optically isolated
Perm. load resistance –10..10V	Ohm	>2000
Perm. load resistance 4..20mA	Ohm	<500
Resolution	bit	16
Fine adjustment via menu		Voltage output or current loop
Inputs/outputs (limit values)		1 x input and 2 x output, optically isolated
Optional Setpoint-Card WE2110/ZS		
Function		4 x input and 4 x output, optically isolated
Reference value outputs		gross, net, zero, motion, error
Functions for input		keys, blank, lock, total, peak, hold
Voltage range inputs/outputs (external)	VDC	12 - 28
Duration of short circuit outputs	sec	no limit
Max. voltage / Max. current	VDC/mA	50 / 300



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