

**COMPATIBILITY OF MODULES**

Ref.: WELMEC 2 (2000)

**Non-Automatic Weighing Instrument, single-interval**

Certificate of EU Type-Approval N°:

TAC:

**INDICATOR**

A/D (Module 1)

Type:  MV2

Accuracy class according to EN 45501 and OIML R76:

Class<sub>ind</sub> ( I, II, III or IIII )

III

Maximum number of verification scale intervals (n<sub>max</sub>):

n<sub>ind</sub> 6000

Fraction of maximum permissible error (mpe):

p<sub>1</sub> 0.5

Load cell excitation voltage:

U<sub>exc</sub> [ Vdc ] 5

Minimum input-voltage per verification scale interval:

Δu<sub>min</sub> [ μV ] 0.83

Minimum load cell impedance:

R<sub>Lmin</sub> [ Ω ] 87.5

Coefficient of temperature of the span error:

Es [ % / 25°C ]

Coefficient of resistance for the wires in the J-box cable:

Sx [ % / Ω ]

Specific J-box cable-Length to the junction box for load cells:

(L/A)<sub>max</sub> [ m / mm<sup>2</sup> ]

Load cell interface:

4-wire (no sense)

Additive tare, if available:

T<sup>+</sup> [ % of Max ] 0

Initial zero setting range:

IZSR [ % of Max ] -10 / 10

Temperature range:

T<sub>min</sub> / T<sub>max</sub> [ °C ] 5 / 40

Test report (TR), Test Certificate (TC) or OIML Certificate of Conformity:

DK 0199.436

**LOAD RECEPTOR**

(Module 2)

Type:  BRW1000KGEU

Construction:

Platform

Fraction of mpe:

p<sub>2</sub> 0.5

Number of load cells:

N 4

Reduction ratio of the load transmitting device:

R=F<sub>M</sub> / F<sub>L</sub> 1

Dead load of load receptor:

DL [ % of Max ] 8.4

Non uniform distribution of the load:

NUD [ % of Max ] 20

Correction factor:

Q = 1 + (DL + T<sup>+</sup> + IZSR<sup>+</sup> + NUD) / 100 1.384

**LOAD CELL**

ANALOG (Module 3)

Type:  LFB-250P

Accuracy class according to OIML R60:

Class<sub>LC</sub> ( A, B, C or D ) C

Maximum number of load cell intervals:

n<sub>LC</sub> 3000

Fraction of mpe:

p<sub>3</sub> 0.7

Rated output (sensitivity):

C [ mV / V ] 2

Input resistance of single load cell:

R<sub>LC</sub> [ Ω ] 350

Minimum load cell verification interval: (v<sub>min%</sub> = 100 / Y)

v<sub>min%</sub> [ % of E<sub>max</sub> ] 0.02

Rated capacity:

E<sub>max</sub> [ kg ] 250

Minimum dead load, relative:

(E<sub>min</sub> / E<sub>max</sub>) \* 100 [ % ] 0.016

Temperature range:

T<sub>min</sub> / T<sub>max</sub> [ °C ] -10 / 40

Test report (TR) or Test Certificate (TC/OIML) as appropriate:

1991-DK-00.02

**COMPLETE WEIGHING INSTRUMENT**

Single-interval

Manufacturer:

CARDINAL

Type:  BRW1000KGEU-MV2

Accuracy class according to EN 45501 and OIML R76:

Class<sub>WI</sub> ( I, II, III or IIII ) III

Fractions: p<sub>i</sub> = p<sub>1</sub><sup>2</sup> + p<sub>2</sub><sup>2</sup> + p<sub>3</sub><sup>2</sup>:

p<sub>i</sub> 1.0

Maximum capacity:

Max [ kg ] 400

Number of verification scale intervals:

n 2000

Verification scale interval:

e [ kg ] 0.2

Utilisation ratio of the load cell:

α = (Max / E<sub>max</sub>) \* (R / N) 0.40

Input voltage (from the load cells):

Δ<sub>u</sub> = C \* U<sub>exc</sub> \* α \* 1000 / n [ μV/e ] 2.00

Cross-section of each wire in the J-box cable:

A [ mm<sup>2</sup> ]

J-box cable-Length:

L [ m ]

Temperature range to be marked on the instrument:

T<sub>min</sub> / T<sub>max</sub> [ °C ] 5 / 40

Peripheral Equipment subject to legal control:

Acceptance criteria for compatibility			Passed, provided no result below is < 0	
Class <sub>WI</sub>	<=	Class <sub>ind</sub> & Class <sub>LC</sub> (WELMEC 2: 1)	Class <sub>WI</sub>	PASSED
p <sub>i</sub>	<=	1 (R76: 3.5.4.1)	1 - p <sub>i</sub>	0.0
n	<=	n <sub>max</sub> for the class (R76: 3.2)	n <sub>max</sub> for the class - n	8000
n	<=	n <sub>ind</sub> (WELMEC 2: 4)	n <sub>ind</sub> - n	4000
n	<=	n <sub>LC</sub> (R76: 4.12.2)	n <sub>LC</sub> - n	1000
E <sub>min</sub>	<=	DL * R / N (WELMEC 2: 6d)	(DL * R / N) - E <sub>min</sub>	8.36
v <sub>min</sub> * √N / R	<=	e (R76: 4.12.3)	e - (v <sub>min</sub> * √N / R)	0.100
or (if v <sub>min</sub> is not given)			Alternative solutions:	
(E <sub>max</sub> / n <sub>LC</sub> ) * (√N / R)	<=	e (WELMEC 2: 7)	e - ((E <sub>max</sub> / n <sub>LC</sub> ) * (√N / R))	
Δu <sub>min</sub>	<=	Δu (WELMEC 2: 8)	Δu - Δu <sub>min</sub>	1.17
R <sub>Lmin</sub>	<=	R <sub>LC</sub> / N (WELMEC 2: 9)	(R <sub>LC</sub> / N) - R <sub>Lmin</sub>	0
L / A	<=	(L / A) <sub>max</sub> <sup>WI</sup> (WELMEC 2: 10)	(L / A) <sub>max</sub> <sup>WI</sup> - (L / A)	Not applicable
T <sub>range</sub>	<=	T <sub>max</sub> - T <sub>min</sub> (R76: 3.9.2.2)	(T <sub>max</sub> - T <sub>min</sub> ) - T <sub>range</sub>	5
Q * Max * R / N	<=	E <sub>max</sub> (R76: 4.12.1)	E <sub>max</sub> - (Q * Max * R / N)	111.6

Signature and date:

Conclusion . . . . . PASSED

This is an authentic document made from the program:  
"Compatibility of NAWI-modules version 3.0".