

COMPATIBILITY OF MODULES

Ref.: WELMEC 2 (2000)

Non-Automatic Weighing Instrument, single-interval

Certificate of EU Type-Approval N°:

TAC: **DK0199.436**

INDICATOR

A/D (Module 1)

Type: **MV2**

Accuracy class according to EN 45501 and OIML R76:

Class_{ind} (I, II, III or IIII) **III**

Maximum number of verification scale intervals (n_{max}):

n_{ind} **6000**

Fraction of maximum permissible error (mpe):

p₁ **0.5**

Load cell excitation voltage:

U_{exc} [Vdc] **5**

Minimum input-voltage per verification scale interval:

Δu_{min} [μV] **0.83**

Minimum load cell impedance:

R_{Lmin} [Ω] **87**

Coefficient of temperature of the span error:

Es [% / 25°C] **0.006**

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

Sx [% / Ω] **0.0152**

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

(L/A)_{max} [m / mm²] **127**

Load cell interface:

4-wire (no sense)

Additive tare, if available:

T⁺ [% of Max] **5**

Initial zero setting range:

IZSR [% of Max] **-2 / 2**

Temperature range:

T_{min} / T_{max} [°C] **-10 / 40**

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

DANAK-1913746

LOAD RECEPTOR

(Module 2)

Type: **GP-400**

Construction:

Platform

Fraction of mpe:

p₂ **0.5**

Number of load cells:

N **4**

Reduction ratio of the load transmitting device:

R=F_M / F_L **1**

Dead load of load receptor:

DL [% of Max] **10**

Non uniform distribution of the load:

NUD [% of Max] **20**

Correction factor:

Q = 1 + (DL + T⁺ + IZSR⁺ + NUD) / 100 **1.37**

LOAD CELL

ANALOG (Module 3)

Type: **LFB-250M**

Accuracy class according to OIML R60:

Class_{LC} (A, B, C or D) **C**

Maximum number of load cell intervals:

n_{LC} **3000**

Fraction of mpe:

p₃ **0.7**

Rated output (sensitivity):

C [mV / V] **2**

Input resistance of single load cell:

R_{LC} [Ω] **350**

Minimum load cell verification interval: (v_{min%} = 100 / Y)

v_{min%} [% of E_{max}] **0.02**

Rated capacity:

E_{max} [kg] **125**

Minimum dead load, relative:

(E_{min} / E_{max}) * 100 [%] **0**

Temperature range:

T_{min} / T_{max} [°C] **-10 / 40**

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

R60/1991-DK-00.02

COMPLETE WEIGHING INSTRUMENT

Single-interval

Manufacturer: **Detecto**

Type: **GP400-KGEU**

Accuracy class according to EN 45501 and OIML R76:

Class_{WI} (I, II, III or IIII) **III**

Fractions: p₁ = p₁² + p₂² + p₃²:

p₁ **1.0**

Maximum capacity:

Max [kg] **200**

Number of verification scale intervals:

n **2000**

Verification scale interval:

e [kg] **0.1**

Utilisation ratio of the load cell:

α = (Max / E_{max}) * (R / N) **0.40**

Input voltage (from the load cells):

Δ_u = C * U_{exc} * α * 1000 / n [μV/e] **2.00**

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

A [mm²] **0.22**

J-box cable-Length:

L [m] **20**

Temperature range to be marked on the instrument: Not required

T_{min} / T_{max} [°C]

Peripheral Equipment subject to legal control:

Acceptance criteria for compatibility			Passed, provided no result below is < 0	
Class _{WI}	<=	Class _{ind} & Class _{LC} (WELMEC 2: 1)	Class _{WI}	PASSED
p ₁	<=	1 (R76: 3.5.4.1)	1 - p ₁	0.0
n	<=	n _{max} for the class (R76: 3.2)	n _{max} for the class - n	8000
n	<=	n _{ind} (WELMEC 2: 4)	n _{ind} - n	4000
n	<=	n _{LC} (R76: 4.12.2)	n _{LC} - n	1000
E _{min}	<=	DL * R / N (WELMEC 2: 6d)	(DL * R / N) - E _{min}	5
v _{min} * √N / R	<=	e (R76: 4.12.3)	e - (v _{min} * √N / R)	0.050
or (if v _{min} is not given)			Alternative solutions:	
(E _{max} / n _{LC}) * (√N / R)	<=	e (WELMEC 2: 7)	e - ((E _{max} / n _{LC}) * (√N / R))	
Δu _{min}	<=	Δu (WELMEC 2: 8)	Δu - Δu _{min}	1.17
R _{Lmin}	<=	R _{LC} / N (WELMEC 2: 9)	(R _{LC} / N) - R _{Lmin}	1
L / A	<=	(L / A) _{max} ^{WI} (WELMEC 2: 10)	(L / A) _{max} ^{WI} - (L / A)	522
T _{range}	<=	T _{max} - T _{min} (R76: 3.9.2.2)	(T _{max} - T _{min}) - T _{range}	20
Q * Max * R / N	<=	E _{max} (R76: 4.12.1)	E _{max} - (Q * Max * R / N)	56.5

Signature and date:

Conclusion PASSED

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