Trescal CALIBRATION | SOLUTIONS TO | IMPROVE | YOUR | PERFORMANCE

BELAC Accr. no 004-CAL

CALIBRATION CERTIFICATE

1709-12764

Customer information

Client	: Heckmann Präzisionstechnik GmbH (Digi-Pas)
Contact	: Fr. Sarah Heckmann
Address	: Wilhelm-Leuschner-Str. 36 68519 Viernheim Germany
Reference client	:
Reference Trescal	: 201718045/2

Instrument information

Make / type	: DIGI-PAS / DWL-1500 XY
Description	: Inclinometer
Range	: 0 .. 2 °
Serial number	: 11A21763
Identification number	:
Accuracy	:

Date of calibration : 16 October 2017 to 11 January 2018

Method of calibration

P1-02-G.017 Calibration of spirit levels / inclinometers
The calibration of the levels/clinometers consists of a visual inspection and a series of measurements. Firstly, we examine the general condition of the surfaces and the functionality of the readout. Nextly we measure the zero, the deviations and, if necessary, the perpendicularity of the instrument.

Environmental conditions (limits during measurements)

Ambient temperature	: 20 °C ± 1 °C
Relative humidity	: 45%rh ± 20%rh

Used reference

The equipment used is traceable to National and/or International standards.

R3797/3	Rotary encoder	Cert.170504038

Note

The instrument is measured, adjusted and then re-measured.

Issue date: 12 January 2018

Technician
Koen Groffen

Head of the laboratory
Luc Van Pelt

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Initial results:

-	Description	Reference value	Instrument value	Difference	Tolerance ±	Uncertainty ±	Units	-
1	◄	0,000	0,000	0,000	0,001	0,001	°	
2	◄	0,200	0,202	0,002	0,001	0,001	°	*
3	◄	0,500	0,503	0,003	0,001	0,001	°	*
4	◄	1,000	1,004	0,004	0,003	0,001	°	*
5	◄	1,500	1,505	0,005	0,003	0,001	°	*
6	►	0,000	0,000	0,000	0,001	0,001	°	
7	►	0,200	0,200	0,000	0,001	0,001	°	
8	►	0,500	0,500	0,000	0,001	0,001	°	
9	►	1,000	1,003	0,003	0,003	0,001	°	
10	►	1,500	1,504	0,004	0,003	0,001	°	*

-	Description	Reference value	Instrument value	Difference	Tolerance ±	Uncertainty ±	Units	-
1	▼	0,000	0,000	0,000	0,001	0,001	°	
2	▼	0,200	0,201	0,001	0,001	0,001	°	
3	▼	0,500	0,502	0,002	0,001	0,001	°	*
4	▼	1,000	1,004	0,004	0,001	0,001	°	*
5	▼	1,500	1,505	0,005	0,001	0,001	°	*
6	▲	0,000	0,000	0,000	0,001	0,001	°	
7	▲	0,200	0,200	0,000	0,001	0,001	°	
8	▲	0,500	0,502	0,002	0,003	0,001	°	
9	▲	1,000	1,003	0,003	0,003	0,001	°	
10	▲	1,500	1,506	0,006	0,003	0,001	°	*

After adjustment results:

-	Description	Reference value	Instrument value	Difference	Tolerance ±	Uncertainty ±	Units	-
1	◄	0,000	0,000	0,000	0,001	0,001	°	
2	◄	0,200	0,201	0,001	0,001	0,001	°	
3	◄	0,500	0,500	0,000	0,001	0,001	°	
4	◄	1,000	1,000	0,000	0,001	0,001	°	
5	◄	1,500	1,499	-0,001	0,001	0,001	°	
6	►	0,000	0,000	0,000	0,001	0,001	°	
7	►	0,200	0,200	0,000	0,001	0,001	°	
8	►	0,500	0,500	0,000	0,003	0,001	°	
9	►	1,000	1,000	0,000	0,003	0,001	°	
10	►	1,500	1,500	0,000	0,003	0,001	°	

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1709-12764

-	Description	Reference value	Instrument value	Difference	Tolerance ±	Uncertainty ±	Units	-
1	▼	0,000	0,000	0,000	0,001	0,001	°	
2	▼	0,200	0,200	0,000	0,001	0,001	°	
3	▼	0,500	0,500	0,000	0,001	0,001	°	
4	▼	1,000	0,999	-0,001	0,001	0,001	°	
5	▼	1,500	1,500	0,000	0,001	0,001	°	
6	▲	0,000	0,000	0,000	0,001	0,001	°	
7	▲	0,200	0,200	0,000	0,001	0,001	°	
8	▲	0,500	0,500	0,000	0,003	0,001	°	
9	▲	1,000	0,999	-0,001	0,003	0,001	°	
10	▲	1,500	1,500	0,000	0,003	0,001	°	

The stated uncertainty is that of the entire set-up including the object under test.

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95% .
The uncertainty is calculated following EA-4/02 in accordance with the requirements of the ISO/IEC 17025.