CALIBRATION CERTIFICATE

NAME	:	COMPACT-CT
MODEL	:	ACT-HR
SERIAL No.	:	1578
Parameter	:	Temperature Conductivity

JFE

JFE Advantech Co., Ltd.

Temperature Calibration Certificate

Model	:	ACT-HR
Serial No.	:	1578
Date	:	December 01, 2015
Location	:	Production Section
Method	:	Calibration equation is determined from third order regression of samples of the reference temperature against A/D values. Samples are taken at approximately 3, 10, 17, 24, and 31 °C.

1. Equation

Instrument temperature[°C] = $A+B \times N+C \times N^2+D \times N^3$ N: A/D value

2. Coefficients

A = -6.627438e00
B = 1.082061e-03
C = -8.749025e-09
D = 9.639211e-14

3. Calibration results

Reference temperature [°C]	A/D value	Instrument temperature [°C]	Residual error [°C]	Acceptance [°C]	OK/NG
2.658	9197	2.659	0.001	±0.050	OK
9.862	17167	9.858	-0.004	±0.050	OK
16.647	25232	16.653	0.006	±0.050	OK
23.662	33781	23.658	-0.004	±0.050	OK
30.398	41850	30.399	0.001	±0.050	OK

4. Verification

Criteria of judgement : Residual error of the instrument temperature at arbitrary point is within the acceptance value.

Reference temperature [°C]	Instrument temperature [°C]	Residual error [°C]	Acceptance [°C]	Judgement
19.715	19.717	0.002	±0.050	Passed

Examined M. Kano

Approved A. Fukuoka

IEE Advantech Co. Ltd

Conductivity Calibration Certificate

Model	:	ACT-HR
Serial No.	:	1578
Date	:	December 01, 2015
Location	:	Production Section
Method	:	Calibration equation is determined from linear regression of samples of the reference conductivity against A/D values. Samples are taken at approximately 20, 30, 40, and 50 mS/cm.

1. Equation Instrument conductivity[mS/cm] = A+B × N N: A/D value

2. Coefficients A = -6.521035e-01 B = 1.000304e-03

3. Calibration results

Reference conductivity [mS/cm]	A/D value	Instrument conductivity [mS/cm]	Residual error [mS/cm]	Acceptance [mS/cm]	OK/NG
19.444	20091	19.445	0.001	±0.050	OK
30.494	31137	30.494	0.000	±0.050	OK
40.022	40661	40.020	-0.002	±0.050	OK
51.556	52193	51.557	0.001	±0.050	OK

4. Verification

Criteria of judgement : Residual error of the instrument conductivity at arbitrary point is within the acceptance value.

Reference conductivity [mS/cm]	Instrument conductivity [mS/cm]	Residual error [mS/cm]	Acceptance [mS/cm]	Judgement
45.804	45.800	-0.004	±0.050	Passed

Examined M. Kano

Approved A. Fukuoka