Data Processing Sheet

Instrument:	HydroC CO_2	Date of calibration:	31.05.2018 (post)
Serial number:	CO2-0212-001	Date of delivery:	-
Customer:	ISMAR	PO:	RMA10331-01

KONGSBERG

Note! *For more information about the HydroC calibration, please check your individual sensor Calibration Sheet.*

Note! *For data processing, apply the application note Data Processing for CONTROS HydroC CO_2.*

Sensor Specific Values

T_0	273.15 K
p_0	1013.25 mbar
F	62256
T_{sensor}	39.0°C
$f(T_{\text{sensor}})$	9849.52 (only for T_{sensor} as given above)
$S'_{\text{2beam,Z}}$	14099.18 (found during calibration)
Polynomial degree	3 (with forced zero crossing)
Regression error:	< ± 1.7 ppm (estimate error found during calibration)

Calibration coefficients

k_1	5.353990e-02
k_2	1.639035e-06
k_3	2.372609e-10

Data Processing Sheet

Instrument: HydroC CO_2
Serial number: CO2-0212-001
Customer: ISMAR

Date of calibration: 31.05.2018 (post)
Date of delivery: -
PO: RMA10331-01

KONGSBERG

Calibration Data

S_{raw}	S_{ref}	T_{gas}	p_{NDIR}	S_{proc}	$x_{CO_2,reference}$*
[]	[]	[°C]	[mbar]	[]	[ppm]
18525.40	15107.77	23.91	1000.07	8926.23	857.01
19621.66	15091.07	23.99	1010.23	5707.90	442.28
20439.91	15078.15	24.01	1014.39	3299.27	219.69
19120.04	15099.46	24.03	1017.90	7184.13	601.24

Equations

Equation for $x_{CO_2,wet}$

$$x_{CO_2,wet} = \left(k_3 S_{proc}^3 + k_2 S_{proc}^2 + k_1 S_{proc}\right) \frac{p_0 T_{gas}}{T_0 p_{NDIR}}$$

Equation for p_{CO_2}

$$p_{CO_2} = x_{CO_2,wet} \frac{p_{in}}{1013.25}$$

Calibration Curve

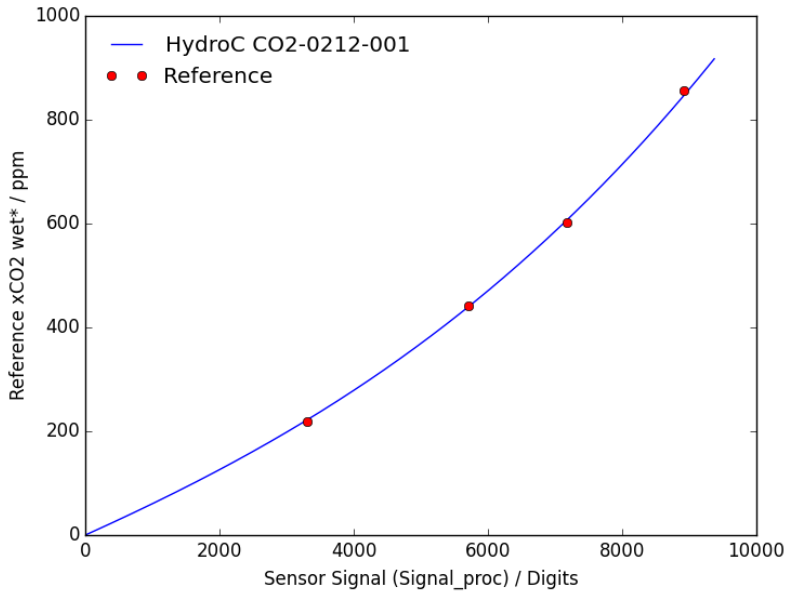

Figure 1: Calibration curve of the processed sensor signal (S_{proc}) against the x_{CO_2} of the KM Contros CO_2 reference system.

*Converted from the x_{CO_2} value in the reference system to the conditions in the gas stream of the sensor.