



301IRFS / S301D2 with VA301EM

301IRFS / S301D2 with VA301EM Calibration Procedure

1. Warm-Up Period

Turn the unit on for a minimum of fifteen (15) minutes.

Check Calibration Information for specific warm-up time.

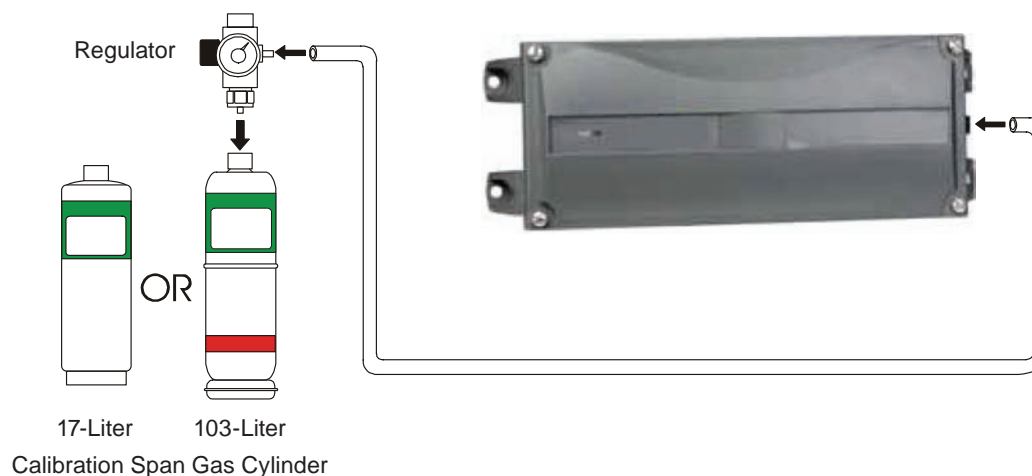
2. Connecting the Hardware

Plug the calibration adaptor onto the gas sensor inlet.

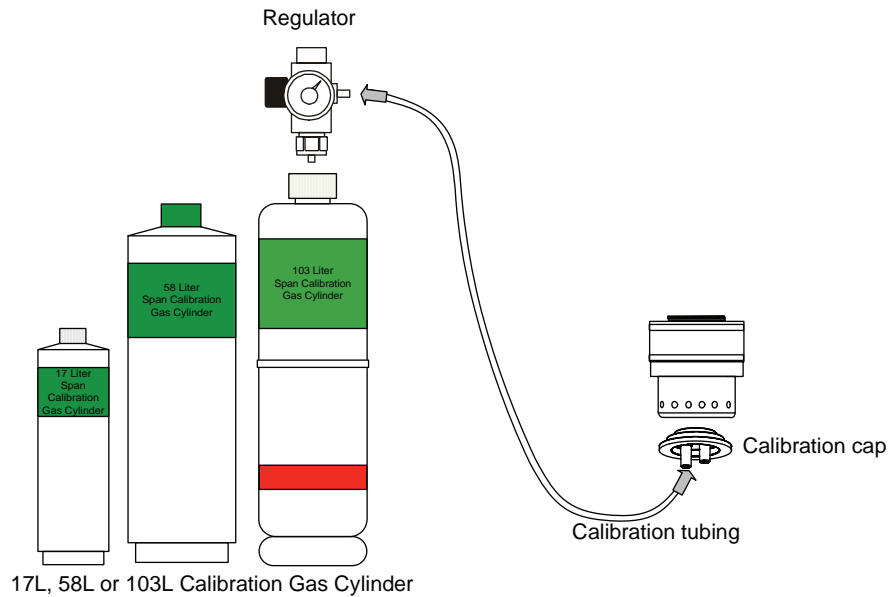
Screw the regulator to the calibration Span gas cylinder for the Span adjustment or Zero gas cylinder for the Zero adjustment and set the appropriate flow rate.

VA301EM CALIBRATION INFORMATION					
Gas	Scale	Warm-up	Factor	Flow Rate	Notes
Combustible	0 - 102% LEL	15 min	Table II	500 ml/min	1% Volume CH ₄ = 20% LEL CH ₄ .
CL ₂	0 - 15.3 ppm	15 min	N/A	500 ml/min	
CO	0 - 255 ppm	N/A	N/A	500 ml/min	
ETO	0 - 20.4 ppm	15 min	N/A	500 ml/min	
H ₂ S	0 - 51.0 ppm	15 min	N/A	500 ml/min	
HCL	0 - 25.5 ppm	15 min	N/A	500 ml/min	
H ₂ CN	0 - 51.0 ppm	15 min	N/A	500 ml/min	
HF	0 - 10.2 ppm	15 min	0.2	500 ml/min	Nitrogen dioxide is a surrogate gas for HF
NO	0 - 102 ppm	15 min	N/A	500 ml/min	
NO ₂	0 - 10.2 ppm	15 min	N/A	500 ml/min	
O ₂	0 - 25.5%	N/A	N/A	500 ml/min	
SO ₂	0 -10.2 ppm	15 min	N/A	500 ml/min	
SIH ₄	0 -10.2 ppm	15 min	N/A	500 ml/min	
F ₂	0 – 2.6 ppm	15 min	1.3	500 ml/min	CL ₂ is a surrogate gas for F ₂
Refrigerant Rxxx	0 – 1000 ppm	15 min	N/A	100 ml/min	Replace the xxx by the required refrigerant

Connect the regulator outlet to the calibration adaptor.



301IRFS Calibration Installation



S301D2 Calibration Installation

3. Adjusting the Zero (if required)

When the unit indicates 0 %/ppm in an area with no presence of the target gas, proceed to step 4.

To adjust the zero, inject zero gas at the specified flow rate.

The zero calibration gas is now flowing into the unit.

Let the gas flow for a minimum of 2.5 minutes.

After 2.5 minutes, the reading should be stabilized.

Press Enter to get into the menu.

Use the Up or Down button until the password VA is reached.

Press Enter to acknowledge.

Use the Up or Down arrow until the Set Zero field is reached.

Press Enter to acknowledge.

Use the Up or Down arrow to select the sensor to be calibrated.

Press Enter to acknowledge.

Press Enter again to activate GoCalib.

Wait message appears, the transmitter will go into zero calibration.

The calibration procedure is finished when the Menu Set Zero message appears.

Use the Up or Down arrow until the Quit field is reached.

Press Enter to exit.

4. Adjusting the Span

Turn on the regulator.

The calibration span gas is now flowing into the unit.

Let the gas flow for a minimum of 2.5 minutes.

After 2.5 minutes, the reading should be stabilized.

Press Enter to get into the menu.

Use the Up or Down button until the password VA is reached.

Press Enter to acknowledge.

Use the Up or Down arrow until the Set Span field is reached.

Press Enter to acknowledge.

Use the Up or Down arrow to select the sensor to be calibrated.

Press Enter to acknowledge.

Use the Up or Down button to set the span gas value multiplied by the conversion factor, if needed (See table below).

Press Enter to acknowledge.

Press Enter again to activate GoCalib.

Wait message appears, the transmitter will go into span calibration.

The calibration procedure is finished when the Menu Set Span message appears.

Use the Up or Down arrow until the Quit field is reached.

Press Enter to exit.

VA301EM CONVERSION FACTOR FOR COMBUSTIBLES (PELLISTOR)

Gas	Factor	Gas	Factor	Gas	Factor
1,2-Propylene Oxide	2.593	Ethyl Alcohol C ₂ H ₆ O	1.691	Methylhexane	2.376
1,3-Butadiene C ₄ H ₆	2.546	Ethyl Bromide	0.942	Methylpentane	2.705
1,4 Dioxane	2.513	Ethyl Chloride	1.748	M-Xylene	2.693
1,4-Hexadiene	1.504	Ethyl Formate	2.374	N-Butane	2.04
1-Butene C ₄ H ₈	2.146	Ethyl Mercaptan	1.75	N-butyl Alcohol C ₄ H ₁₀ O	3.042
1-Pentene	2.207	Ethyl Methyl Ether	2.305	N-Butyric Acid	2.433
1-Hexene	2.535	Ethylamine	1.394	N-Decane	3.413
Acetaldehyde	2.034	Ethyl Benzene	2.884	Neo-Pentane	2.388
Acetic Acid	3.413	Ethylene	1.537	N-Heptane	2.689
Acetic Anhydride	2.056	Ethylene Alcohol C ₂ H ₆ O ₂	1.7	N-Hexane	2.349
Acetone	2.208	Ethylene Dichloride	1.502	Nitromethane	2.146
Acetonitrile	2.328	Ethyl Pentane	2.354	N-Octane	2.854
Acetylene	1.665	Hydrazine	1.949	N-Pentane	2.21
Acrylonitrile	2.202	Hydrogen	1.233	N-Propyl Acetate	2.44
Aniline	2.985	I-Propyl Acetate	2.442	N-Propyl Alcohol	1.967
Benzene	2.512	Iso-Butane	1.832	N-Propyl Chloride	1.808
Carbonyl Sulphide	1.023	Iso-Butyl Alcohol	2.541	N-Propylamine	2.071
Chlorobenzene	2.976	Isobutylene	1.95	O-Xylene	2.998
Cis-Butene-2	2.051	Iso-Pentane	2.3	Propyne	2.304
Cis-Hexene (2&3)	2.525	Iso-Propyl Alcohol C ₃ H ₈ O	2.582	Propane C ₃ H ₈	1.883
Cyanogen	1.058	Methane	1	Propene C ₃ H ₆	1.837
Cyclohexane	2.492	Methyl Acetate	2.156	P-Xylene	2.772
Cyclopentane	1.966	Methyl Alcohol	1.46	sStyrene Monomer	2.665
Cyclopropane	1.518	Methyl Bromide	1.055	Tert-Butyl Alcohol	1.778
Deutarium	1.067	Methyl Chloride	1.297	Tetrahydrofuran	1.824
Diethyl Ether	2.285	Methyl Ethyl Ketone	2.631	Toluene C ₇ H ₈	2.47
Diiso-propyl Ether	2.342	Methyl Formate	1.857	Trans-Butene-2	1.882
Dimethyl Butane	2.683	Methylhydrazine	2.358	Trans-Hexene (2&3)	2.543
Dimethyl Ether	1.714	Methyl Mercaptan	1.602	Triethylamine	2.524
Dimethylhydrazine	1.424	Methyl Propionate	2.091	Trimethylamine	1.945
Dimethyl Sulphide	2.323	Methyl Propyl Ketone	2.694	Trimethylbutane	2.296
Dimethyl Pentane	2.317	Methylamine	1.25	Vinyl Acetate	1.904
Ethane	1.392	Methylcyclohexane	2.559	Vinyl Chloride	1.825
Ethyl Acetate	2.563	Methylene Chloride	1.026		