

Crowcon Technical Note

Document Reference: Gas-Pro 006 Gas Pro PID correction factors – Issue 2

Date: 01/05/2018

Document applies to: Gas-Pro PID

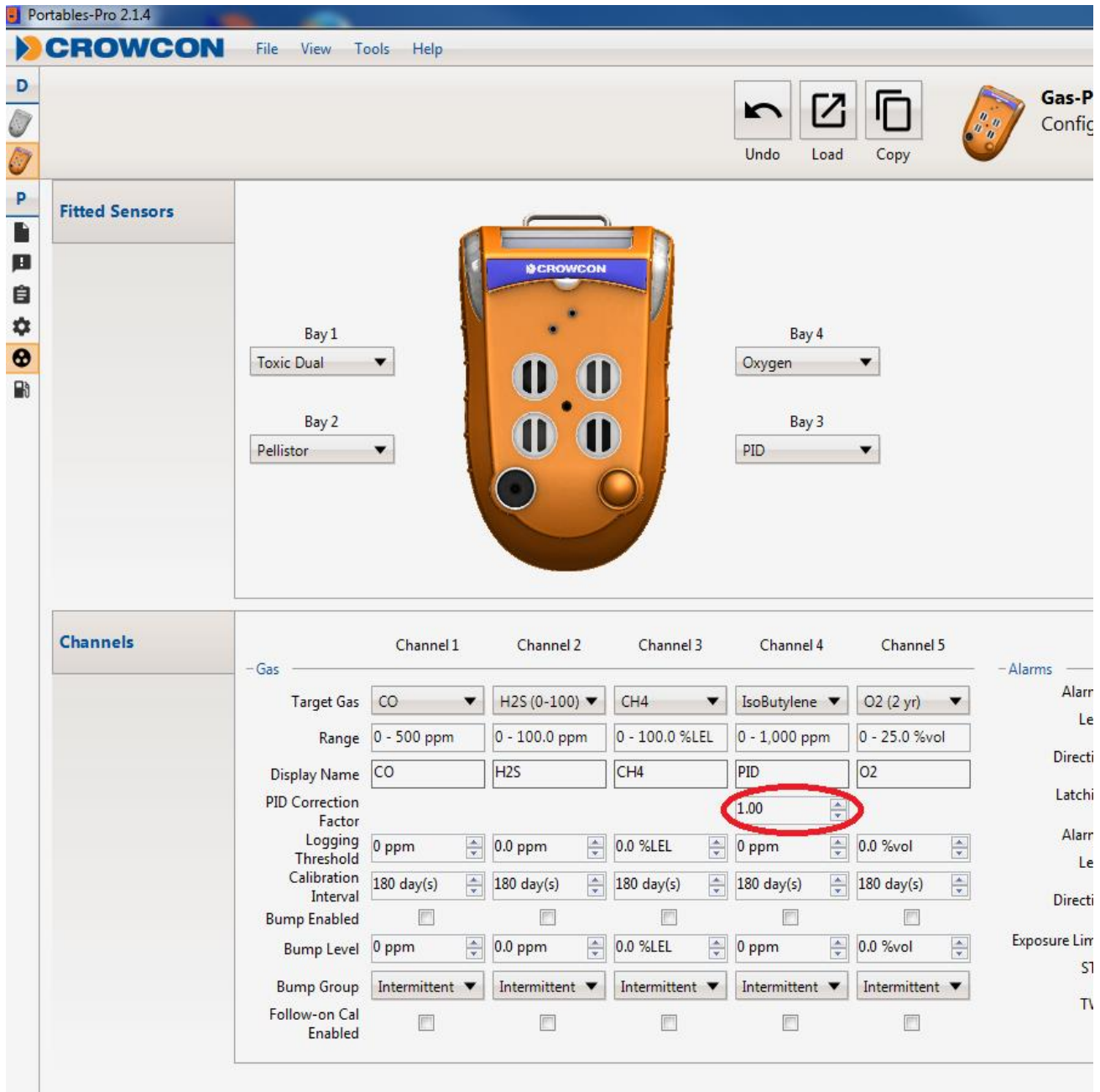
The Gas-Pro PID device is factory calibrated with 100ppm isobutylene, so the range on a new unit will correspond directly to a 0-1000ppm isobutylene. The response can be scaled to 0-1000ppm of other target VOCs by applying a correction factor to the readings; the PID correction factor setting can be adjusted using the Portables Pro 2 software. The default correction factor is **1.00**, please refer to the table below for correction factors for other target VOCs.

The Portables Pro 2 software should also be used to set the alarm levels in accordance with the risk assessment for the application, taking into account the exposure limits for the target chemical.

For detection of VOCs which are not listed, please contact Crowcon Technical Support for advice on:

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Portables Pro 2 screenshot, showing PID correction Factor setting.

Please refer to the Portables Pro 2 user manual for more information.

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VOC	Formula	Ionisation Potential eV	Crowcon Correction Factor (10.6ev Lamp only)
Acetaldehyde	C2H4O	10.23	5.5
Acetone	C3H6O	9.69	1.17
Acrolein	C3H4O	10.22	3.2
Allyl alcohol	C3H6O	9.63	2.3
Allyl chloride	C3H5Cl	10.05	4.5
Ammonia	H3N	10.18	8.5
Amyl acetate, n-	C7H14O2	9.9	1.8
Amyl alcohol	C5H12O	10	2.6
Aniline	C6H7N	7.7	0.5
Anisole	C7H8O	8.21	0.59
Asphalt, petroleum fumes		9	1
Benzaldehyde	C7H6O	9.49	0.7
Benzene	C6H6	9.24	0.5
Benzene thiol	C6H5SH	8.32	0.7
Benzonitrile	C7H5N	9.62	0.7
Benzyl alcohol	C7H8O	8.26	1
Benzyl chloride	C7H7Cl	9.14	0.7
Benzyl formate	C8H8O2	9.32	0.8
Biphenyl	C12H10	8.23	0.4
Bromobenzene	C6H5Br	8.98	0.32
Bromoethane	C2H5Br	10.29	1.6
Bromoethyl methyl ether, -2	C3H7OBr	10	2.5
Bromoform	CHBr3	10.48	2.8
Bromopropane, -1	C3H7Br	10.18	1.5
Butadiene, 1, 3-	C4H6	9.07	0.8
Butadiene diepoxide, 1,3 -	C4H6O2	10	4
Butanol, -1	C4H10O	10.04	3.9
Butene, -1	C4H8	9.58	1.5
Butoxyethanol, -2	C6H14O2	8.6	1.1
Butyl acetate,	C6H12O2	9.91	2.5
Butyl acrylate,	C7H12O2	~9.6	1.5

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VOC	Formula	Ionisation Potential eV	Crowcon Correction Factor (10.6ev Lamp only)
Butyl mercaptan	C4H10S	9.15	0.5
Butylamine, n-	C4H11N	8.71	1
Camphene	C10H16	8.1	0.5
Carbon disulfide	CS2	10.08	1.4
Carbon tetrabromide	CBr4	10.31	3
Chloro-1,3-butadiene, -2	C4H5Cl	8.79	3.2
Chlorobenzene	C6H5Cl	9.07	0.45
Chloroethyl methyl ether -2	C3H7ClO	9	2.6
Chlorotoluene, o-	C7H7Cl	8.83	0.5
Chlorotoluene, p-	C7H7Cl	8.69	0.4
Cresol, m-	C7H8O	8.36	2.2
Cresol, o-	C7H8O	8.14	1.1
Cresol, p-	C7H8O	8.31	1.1
Crotonaldehyde	C4H6O	9.73	1
Cyclohexane	C6H12	9.98	1.3
Cyclohexanol	C6H12O	10	1.6
Cyclohexanone	C6H10O	9.16	1
Cyclohexene	C6H10	8.95	0.9
Cyclohexylamine	C6H13N	8.37	0.98
Cyclopentane	C5H10	10.52	10
Decane, n-	C10H22	9.65	1.2
Diacetone alcohol	C6H12O2	9	0.9
Dibromochloromethane	CHBr2Cl	10.59	10
Dibromoethane 1,2-	C2H4Br2	9.45	2
Dichloro-1-propene, 2,3-	C3H4Cl2	10.5	1.4
Dichlorobenzene o-	C6H4Cl2	9.06	0.5
Dichloroethene, 1,1-	C2H2Cl2	10	1
Dichloroethene, cis-1,2-	C2H2Cl2	9.66	0.8
Dichloroethene, trans-1,2-	C2H2Cl2	9.65	0.4
Dicyclopentadiene	C10H12	7.74	0.9
Diesel Fuel		8	0.8
Diethyl ether	C4H10O	9.53	1.1

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VOC	Formula	Ionisation Potential eV	Crowcon Correction Factor (10.6ev Lamp only)
Diethyl sulphide	C4H10S	8.43	0.6
Diethylamine	C4H11N	8.01	1.4
Diethylaminopropylamine, -3	C7H18N2	9	5
Diisobutylene	C8H16	8.91	0.7
Diisopropyl ether	C6H14O	9.2	0.92
Diisopropylamine	C6H15N	7.73	0.7
Diketene	C4H4O2	9.6	2.2
Dimethoxymethane	C3H8O2	9.7	2.8
Dimethyl disulphide	C2H6S2	8.46	0.2
Dimethyl ether	C2H6O	10.03	1.3
Dimethylamine	C2H7N	8.24	1.5
Dimethylaniline, NN-	C8H11N	7.12	0.6
Dimethylethylamine, NN	C4H11N	7.74	1.6
Dimethylformamide	C3H7NO	9.13	1.3
Dimethylhydrazine, 1,1-	C2H8N2	8.05	1
Dioxane 1,4-	C4H8O2	9.13	1.45
Diphenyl ether	C12H10O	8.09	1.5
Divinylbenzene	C10H10	8.2	0.4
Epichlorohydrin	C3H5ClO	10.2	5
Epoxypropyl isopropyl ether 2, 3-	C6H12O2	10	1.2
Ethanolamine	C2H7NO	10.47	3
Ethoxyethyl acetate, -2	C6H12O3	10	3
Ethyl acetate	C4H8O2	10.01	4.5
Ethyl acrylate	C5H8O2	10.3	2.3
Ethyl benzene	C8H10	8.76	0.56
Ethyl butyrate	C6H12O2	9.9	1.4
Ethyl hexyl acrylate, -2	C11H20O2	9	1
Furfural	C5H4O2	9.21	0.8
Furfuryl alcohol	C5H6O2	9.9	2
Gasoline		9.9	0.9
Glutaraldehyde	C5H8O2	9.6	0.9
Heptan-2-one	C7H14O	9.33	0.85

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VOC	Formula	Ionisation Potential eV	Crowcon Correction Factor (10.6ev Lamp only)
Heptan-3-one	C7H14O	9.02	0.73
Heptane n-	C7H16	9.92	2.2
Hexan-2-one	C6H12O	9.34	0.8
Hexane n-	C6H14	10.13	3
Hexene, -1	C6H12	9.44	0.9
Hydrazine	H4N2	8.93	3
Hydrogen sulfide	H2S	10.46	4
Hydroquinone	C6H6O2	7.94	0.8
Iminodiethanol 2,2'-	C4H11NO2	9	1.6
Indene	C9H8	8.81	0.5
Iodine	I2	9.31	1.5
Iodoform	CHI3	9.25	1.5
Iodomethane	CH3I	9.54	0.4
Isobutane	C4H10	10.57	8
Isobutanol	C4H10O	10.12	3
Isobutyl acetate	C6H12O2	9.9	2
Isobutyl acrylate	C7H12O2	9.5	1.2
Isobutylene	C4H8	9.24	1
Isobutyraldehyde	C4H8O	9	1.2
Isooctane	C8H18	9.86	1.1
Isopentane	C5H12	10.32	6
Isoprene	C5H8	8.85	0.8
Isopropanol	C3H8O	10.17	4
Isopropyl acetate	C5H10O2	9.99	2.2
Isopropyl chloroformate	C4H7O2Cl	10.2	1.6
Jet Fuel	JP-4	~9	0.8
Jet Fuel	JP-5	~9	0.7
Jet Fuel	JP-8	~9	0.7
Kerosene		~8	0.8
Ketene	C2H2O	9.62	3
Methacrylic acid	C4H6O2	10.15	2.3
Methoxyethanol, -2	C3H8O2	9.6	2.7

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VOC	Formula	Ionisation Potential eV	Crowcon Correction Factor (10.6ev Lamp only)
Methoxyethoxyethanol, -2	C5H12O3	10	1.4
Methoxymethylethoxy-2-propanol	C7H16O3	9.3	1.3
Methoxypropan-2-ol, 1-	C4H10O2	9.6	1.6
Methoxypropyl acetate	C6H12O3	9	1.6
Methyl acetate	C3H6O2	10.27	7
Methyl acrylate	C4H6O2	10.25	3.6
Methyl bromide	CH3Br	10.54	1.9
Methyl ethyl ketone	C4H8O	9.51	0.96
Methyl isobutyl ketone	C6H12O	9.3	0.9
Methyl isothiocyanate	C2H3NS	9.25	0.6
Methyl mercaptan	CH4S	9.44	0.7
Methyl methacrylate	C5H8O2	9.7	1.31
Methyl propyl ketone	C5H10O	9.39	0.79
Methyl sulphide	C2H6S	8.69	0.8
Methyl tert-butyl ether	C5H12O	9.24	1
Methyl-2-propen-1-ol, -2	C4H8O	9.24	1.3
Methyl-2-pyrrolidinone, N-	C5H9NO	9.17	0.9
Methyl-5-hepten-2-one, -6	C8H14O	9.4	0.63
Methylamine	CH5N	8.97	1.5
Methylbutan-1-ol, -3	C5H12O	9.8	2.3
Methylcyclohexane	C7H14	9.85	1.1
Methylcyclohexanol, -4	C7H14O	9.8	2.4
Methylcyclohexanone -2	C7H12O	9.2	1
Methylheptan-3-one, -5	C8H16O	9.1	0.77
Methylhexan-2-one, -5	C7H14O	9.28	0.7
Methylhydrazine	CH6N2	8	1.3
Methylpent-3-en-2-one, -4	C6H10O	9.1	0.6
Methylpentan-2-ol, -4	C6H14O	9.8	1.4
Methylpentane-2,4-diol, -2	C6H14O2	9	4
Methylstyrene	C9H10	8.2	0.5
Mineral spirits		9	0.8
Naphthalene	C10H8	8.14	0.4

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VOC	Formula	Ionisation Potential eV	Crowcon Correction Factor (10.6ev Lamp only)
Nitric oxide	NO	9.27	8
Nitroaniline -4	C6H6N2O2	8.85	0.8
Nitrobenzene	C6H5NO2	9.92	1.7
Nitrogen trichloride	NCI3	10.22	1
Nonane, n-	C9H20	9.72	1.4
Octane, n-	C8H18	9.8	1.6
Octene, -1	C8H16	9.43	0.7
Pentan-2-one	C5H10O	9.38	0.99
Pentan-3-one	C5H10O	9.31	0.77
Pentandione, 2,4-	C5H8O2	8.85	1.2
Pentane, n-	C5H12	10.35	7
Phenol	C6H6O	8.51	1.2
Phenyl-2,3-epoxypropyl ether	C9H10O2	8.6	0.8
Phenylenediamine, p-	C6H8N2	6.89	0.6
Picoline, -3	C6H7N	9.04	0.7
Pinene, alpha	C10H16	8.07	0.34
Pinene, beta	C10H16	8.1	0.5
Piperylene	C5H8	8.6	0.9
Propene	C3H6	9.73	1.4
Propionaldehyde	C3H6O	9.95	1.7
Propionic acid	C3H6O2	10.24	8
Propyl acetate, n-	C5H10O2	10.04	3
Propylene oxide	C3H6O	10.22	6
Propyleneimine	C3H7N	9	1.4
Pyridine	C5H5N	9.25	0.7
Pyridylamine -2	C5H6N2	9	0.8
Styrene	C8H8	8.4	0.45
Terpinolene	C10H16	8.1	0.6
Tert-butanol	C4H10O	9.8	1.6
Tetrabromoethane, 1,1,2,2-	C2H2Br4	10	2
Toluene	C7H8	8.82	0.56
Toluene-2,4-diisocyanate	C9H6N2O2	8.82	1.6

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Trichloroethylene	C2HCl3	9.45	0.6
VOC	Formula	Ionisation Potential eV	Crowcon Correction Factor (10.6ev Lamp only)
Trimethylbenzene mixtures	C9H12	8.41	0.4
Turpentine	C10H16	8	0.6
Undecane, n-	C11H24	9.56	1.1
Vinyl acetate	C4H6O2	9.19	1.5
Vinyl bromide	C2H3Br	9.8	1.5
Vinyl chloride	C2H3Cl	9.99	2.1
Vinyl-2-pyrrolidinone, -1	C6H9NO	9	4.5
Xylene mixed isomers	C8H10	8.56	0.54
Xylene, m-	C8H10	8.56	0.5
Xylene, o-	C8H10	8.56	0.5
Xylene, p-	C8H10	8.44	0.55
Xylidine, all	C7H11N	7.5	0.7

Correction Factors from Alphasense Ltd Application Note AAN-305-06 May 2017