4 Gas Type Defaults

The Display Board Software contains defaults for the Display Range, Alarm Set Points, Relay Styles, Buzzer Style and Analog Output Setup. When selecting the *Gas Type* in *Factory Settings* these defaults are selected. For special requests these defaults may need to be changed by accessing the appropriate menu items.

These settings can be viewed in [Menu]->[*View Setting*].

The alarm settings are changed in [Menu]->[*Alarm Setup]*.

The relay style settings are changed in the [Menu]->[*Relay Style]*.

The buzzer style settings are changed in [Menu]->[*Buzzer Style*].

The analog output 4-20mA and VDC output are changed in [Menu]->[*A-Out Setup*].

NOTE: Do the gas type selection first, before changing any of the above settings.

4.1 Toxic Gases Alarm1 Default Settings

Code	Gas	Symbol	Span	Alarm 1 Settings			
				Input	On Concentration	Off Concentration	Output Trigger
1	Carbon Monoxide	CO	0 – 250ppm	Instant	25ppm	20ppm	R1
1	Carbon Monoxide	CO	0 – 1000ppm	Instant	25ppm	20ppm	R1
2	Hydrogen Sulfide	H2S	0 – 25ppm	Instant	5ppm	3ppm	R1
2	Hydrogen Sulfide	H2S	0 – 100ppm	Instant	5ppm	3ppm	R1
3	Sulphur Dioxide	SO2	0 – 6ppm	Instant	3ppm	2ppm	R1
5	Nitrogen Dioxide	NO2	0 – 10ppm	Instant	1.0ppm	0.8ppm	R1
6	Hydrogen	H2	0 – 1000ppm	Instant	300ppm	250ppm	R1
6	Hydrogen	H2	0 – 2000ppm	Instant	500ppm	400ppm	R1
7	Hydrogen Cyanide	HCN	0 – 50ppm	Instant	5ppm	3ppm	R1
9	Ammonia	NH3	0 – 100ppm	Instant	25ppm	20ppm	R1
9	Ammonia	NH3	0 – 1000ppm	Instant	25ppm	20ppm	R1
11	Ozone	O3	0 – 1ppm	Instant	0.3ppm	0.2ppm	R1
13	Chlorine	Cl2	0 – 5ppm	Instant	1.0ppm	0.8ppm	R1
14	Chlorine Dioxide	ClO2	0 – 2ppm	Instant	0.5ppm	0.3ppm	R1
96	Arsine	AsH3	0 – 1ppm	Instant	0.5ppm	0.4ppm	R1
97	Phosphine	PH3	0 – 5ppm	Instant	1.0ppm	0.8ppm	R1
97	Phosphine	PH3	0 – 1ppm	Instant	0.5ppm	0.4ppm	R1
98	Silane	SiH4	0 – 50ppm	Instant	20ppm	18ppm	R1
99	Germane	GeH4	0 – 2ppm	Instant	0.6ppm	0.5ppm	R1
100	Diborane	B2H6	0 – 2ppm	Instant	0.5ppm	0.4ppm	R1
4	Nitric Oxide	NO	0 – 100ppm	Instant	25ppm	20ppm	R1
8	Hydrogen Chloride	HCl	0 – 30ppm	Instant	5ppm	3ppm	R1
12	Ethylene Oxide	ETO	0 – 20ppm	Instant	1ppm	0.8ppm	R1
101	Hydrogen Bromide	HBr	0 – 30ppm	Instant	3ppm	2ppm	R1

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.2 Toxic Gases Alarm2 Default Settings

Code	Gas	Symbol	Span	Alarm 2 Settings			
				Input	On Concentration	Off Concentration	Output Trigger
1	Carbon Monoxide	CO	0 – 250ppm	Instant	50ppm	40ppm	R1, R2
1	Carbon Monoxide	CO	0 – 1000ppm	Instant	50ppm	40ppm	R1, R2
2	Hydrogen Sulfide	H2S	0 – 25ppm	Instant	10ppm	8ppm	R1, R2
2	Hydrogen Sulfide	H2S	0 – 100ppm	Instant	10ppm	8ppm	R1, R2
3	Sulphur Dioxide	SO2	0 – 6ppm	Instant	5.0ppm	4.5ppm	R1, R2
5	Nitrogen Dioxide	NO2	0 – 10ppm	Instant	3.0ppm	2.0ppm	R1, R2
6	Hydrogen	H2	0 – 1000ppm	Instant	500ppm	450ppm	R1, R2
6	Hydrogen	H2	0 – 2000ppm	Instant	750ppm	600ppm	R1, R2
7	Hydrogen Cyanide	HCN	0 – 50ppm	Instant	10ppm	8ppm	R1, R2
9	Ammonia	NH3	0 – 100ppm	Instant	35ppm	30ppm	R1, R2
9	Ammonia	NH3	0 – 1000ppm	Instant	35ppm	30ppm	R1, R2
11	Ozone	O3	0 – 1ppm	Instant	0.5ppm	0.4ppm	R1, R2
13	Chlorine	Cl2	0 – 5ppm	Instant	2.0ppm	1.5ppm	R1, R2
14	Chlorine Dioxide	ClO2	0 – 2ppm	Instant	1.0ppm	0.8ppm	R1, R2
96	Arsine	AsH3	0 – 1ppm	Instant	0.75ppm	0.65ppm	R1, R2
97	Phosphine	PH3	0 – 5ppm	Instant	2.0ppm	1.8ppm	R1, R2
97	Phosphine	PH3	0 – 1ppm	Instant	0.75ppm	0.60ppm	R1, R2
98	Silane	SiH4	0 – 50ppm	Instant	35ppm	30ppm	R1, R2
99	Germane	GeH4	0 – 2ppm	Instant	1.0ppm	0.8ppm	R1, R2
100	Diborane	B2H6	0 – 2ppm	Instant	1.0ppm	0.8ppm	R1, R2
4	Nitric Oxide	NO	0 – 100ppm	Instant	35ppm	33ppm	R1, R2
8	Hydrogen Chloride	HCl	0 – 30ppm	Instant	20ppm	18ppm	R1, R2
12	Ethylene Oxide	ETO	0 – 20ppm	Instant	10ppm	8ppm	R1, R2
101	Hydrogen Bromide	HBr	0 – 30ppm	Instant	10ppm	8ppm	R1, R2

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.3 Toxic Gases Alarm3 Default Settings

Code	Gas	Symbol	Span	Alarm 3 Settings			
				Input	On Concentration	Off Concentration	Output Trigger
1	Carbon Monoxide	CO	0 – 250ppm	Instant	100ppm	95ppm	R1, R2, R3, B1
1	Carbon Monoxide	CO	0 – 1000ppm	Instant	100ppm	95ppm	R1, R2, R3, B1
2	Hydrogen Sulfide	H2S	0 – 25ppm	Instant	15ppm	13ppm	R1, R2, R3, B1
2	Hydrogen Sulfide	H2S	0 – 100ppm	Instant	15ppm	13ppm	R1, R2, R3, B1
3	Sulphur Dioxide	SO2	0 – 6ppm	Instant	6.0ppm	5.5ppm	R1, R2, R3, B1
5	Nitrogen Dioxide	NO2	0 – 10ppm	Instant	5.0ppm	4.5ppm	R1, R2, R3, B1
6	Hydrogen	H2	0 – 1000ppm	Instant	750ppm	700ppm	R1, R2, R3, B1
6	Hydrogen	H2	0 – 2000ppm	Instant	1000ppm	950ppm	R1, R2, R3, B1
7	Hydrogen Cyanide	HCN	0 – 50ppm	Instant	20ppm	15ppm	R1, R2, R3, B1
9	Ammonia	NH3	0 – 100ppm	Instant	50ppm	45ppm	R1, R2, R3, B1
9	Ammonia	NH3	0 – 1000ppm	Instant	300ppm	250ppm	R1, R2, R3, B1
11	Ozone	O3	0 – 1ppm	Instant	1.0ppm	0.9ppm	R1, R2, R3, B1
13	Chlorine	Cl2	0 – 5ppm	Instant	4.0ppm	3.5ppm	R1, R2, R3, B1
14	Chlorine Dioxide	ClO2	0 – 2ppm	Instant	1.5ppm	1.2ppm	R1, R2, R3, B1
96	Arsine	AsH3	0 – 1ppm	Instant	1.0ppm	0.8ppm	R1, R2, R3, B1
97	Phosphine	PH3	0 – 5ppm	Instant	3.0ppm	2.8ppm	R1, R2, R3, B1
97	Phosphine	PH3	0 – 1ppm	Instant	1.0ppm	0.8ppm	R1, R2, R3, B1
98	Silane	SiH4	0 – 50ppm	Instant	45ppm	40ppm	R1, R2, R3, B1
99	Germane	GeH4	0 – 2ppm	Instant	1.5ppm	1.2ppm	R1, R2, R3, B1
100	Diborane	B2H6	0 – 2ppm	Instant	1.5ppm	1.2ppm	R1, R2, R3, B1
4	Nitric Oxide	NO	0 – 100ppm	Instant	50ppm	45ppm	R1, R2, R3, B1
8	Hydrogen Chloride	HCl	0 – 30ppm	Instant	25ppm	23ppm	R1, R2, R3, B1
12	Ethylene Oxide	ETO	0 – 20ppm	Instant	15ppm	13ppm	R1, R2, R3, B1
101	Hydrogen Bromide	HBr	0 – 30ppm	Instant	25ppm	23ppm	R1, R2, R3, B1

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.4 Toxic Gases Alarm4 Default Settings

Code	Gas	Symbol	Span	Alarm 4 Settings			
				Input	On Concentration	Off Concentration	Output Trigger
1	Carbon Monoxide	CO	0 – 250ppm	FAULT	---	---	R3, B3
1	Carbon Monoxide	CO	0 – 1000ppm	FAULT	---	---	R3, B3
2	Hydrogen Sulfide	H2S	0 – 25ppm	FAULT	---	---	R3, B3
2	Hydrogen Sulfide	H2S	0 – 100ppm	FAULT	---	---	R3, B3
3	Sulphur Dioxide	SO2	0 – 6ppm	FAULT	---	---	R3, B3
5	Nitrogen Dioxide	NO2	0 – 10ppm	FAULT	---	---	R3, B3
6	Hydrogen	H2	0 – 1000ppm	FAULT	---	---	R3, B3
6	Hydrogen	H2	0 – 2000ppm	FAULT	---	---	R3, B3
7	Hydrogen Cyanide	HCN	0 – 50ppm	FAULT	---	---	R3, B3
9	Ammonia	NH3	0 – 100ppm	FAULT	---	---	R3, B3
9	Ammonia	NH3	0 – 1000ppm	FAULT	---	---	R3, B3
11	Ozone	O3	0 – 1ppm	FAULT	---	---	R3, B3
13	Chlorine	Cl2	0 – 5ppm	FAULT	---	---	R3, B3
14	Chlorine Dioxide	ClO2	0 – 2ppm	FAULT	---	---	R3, B3
96	Arsine	AsH3	0 – 1ppm	FAULT	---	---	R3, B3
97	Phosphine	PH3	0 – 5ppm	FAULT	---	---	R3, B3
97	Phosphine	PH3	0 – 1ppm	FAULT	---	---	R3, B3
98	Silane	SiH4	0 – 50ppm	FAULT	---	---	R3, B3
99	Germane	GeH4	0 – 2ppm	FAULT	---	---	R3, B3
100	Diborane	B2H6	0 – 2ppm	FAULT	---	---	R3, B3
4	Nitric Oxide	NO	0 – 100ppm	FAULT	---	---	R3, B3
8	Hydrogen Chloride	HCl	0 – 30ppm	FAULT	---	---	R3, B3
12	Ethylene Oxide	ETO	0 – 20ppm	FAULT	---	---	R3, B3
101	Hydrogen Bromide	HBr	0 – 30ppm	FAULT	---	---	R3, B3

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.5 O2 Alarm Default Settings

Code	Gas	Symbol	Span	Alarm 1 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
0	Oxygen	O2	0 – 25%VOL	Instant	23%VOL	22%VOL	R1, B1
				Alarm 2 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	18.5%VOL	19%VOL	R1, R2, R3, B2
				Alarm 3 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	19%VOL	19.5%VOL	R1, R2, B2
				Alarm 4 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				FAULT	---	---	R3, B3

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.6 Combustible Gas Alarm Default Settings

Code	Gas	Symbol	Span	Alarm 1 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	20%LEL	15%LEL	R1
				Alarm 2 Settings			
16	Methane	CH4		**Input**	**On Concentration**	**Off Concentration**	**Output Trigger**
17	Propane	C3H8		Instant	40%LEL	35%LEL	R1, R2
18	Hydrogen	H2		**Alarm 3 Settings**			
19	Combustible	LEL		**Input**	**On Concentration**	**Off Concentration**	**Output Trigger**
20	Ethylene	C2H4		Instant	50%LEL	45%LEL	R1, R2, R3, B1
21	Iso-Butane	C4H10	0 – 100%LEL	**Alarm 4 Settings**			
22	Iso-Pentane	C5H12		**Input**	**On Concentration**	**Off Concentration**	**Output Trigger**
23	Methanol	CH3OH		FAULT	---	---	R3, B1
24	Benzene	C6H6					
25	Acetone	CH3CO					
26	Butanol, n-Butane	BUTAN					

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.7 5000PPM CO2 Alarm Default Settings

Code	Gas	Symbol	Span	Alarm 1 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
15	Carbon Dioxide	CO2	0 – 5000PPM	Instant	2500PPM	2000PPM	R1
				Alarm 2 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	3500PPM	3000PPM	R1, R2
				Alarm 3 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				TWA	2500PPM	2000PPM	R1, R2, R3, B1
				Alarm 4 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				FAULT	---	---	R3, B3

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.8 5%VOL CO2 Alarm Default Settings

Code	Gas	Symbol	Span	Alarm 1 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
15	Carbon Dioxide	CO2	0 – 5%VOL	Instant	2.5%VOL	2.0%VOL	R1
				Alarm 2 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	3.5%VOL	3.0%VOL	R1, R2
				Alarm 3 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				TWA	2.5%VOL	2.0%VOL	R1, R2, R3, B1
				Alarm 4 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				FAULT	---	---	R3, B3

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.9 20%VOL CO2 Alarm Default Settings

Code	Gas	Symbol	Span	Alarm 1 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
15	Carbon Dioxide	CO2	0 – 20%VOL	Instant	10%VOL	8.0%VOL	R1
				Alarm 2 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	15%VOL	12%VOL	R1, R2
				Alarm 3 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				TWA	15%VOL	12%VOL	R1, R2, R3, B1
				Alarm 4 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				FAULT	---	---	R3, B3

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.10 100%VOL CO2 Alarm Default Settings

Code	Gas	Symbol	Span	Alarm 1 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
15	Carbon Dioxide	CO2	0 – 100%VOL	Instant	20%VOL	15%VOL	R1
				Alarm 2 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	40%VOL	35%VOL	R1, R2
				Alarm 3 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	50%VOL	45%VOL	R1, R2, R3, B1
				Alarm 4 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				FAULT	---	---	R3, B3

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.11 100%LEL IR-CH4 Alarm Default Settings

Code	Gas	Symbol	Span	Alarm 1 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
16	Methane	CH4	0 – 100%LEL	Instant	20%LEL	15%LEL	R1
				Alarm 2 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	40%LEL	35%LEL	R1, R2
				Alarm 3 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	50%LEL	47%LEL	R1, R2, R3, B1
				Alarm 4 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				FAULT	---	---	R3, B3

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.12 100%VOL IR-CH4 Alarm Default Settings

Code	Gas	Symbol	Span	Alarm1 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
16	Methane	CH4	0 – 100%VOL	Instant	25%VOL	20%VOL	R1,
				Alarm2 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				Instant	35%VOL	30%VOL	R1, R2
				Alarm3 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				STEL	25%VOL	20%VOL	R1, R2, R3, B1
				Alarm4 Settings			
				Input	**On Concentration**	**Off Concentration**	**Output Trigger**
				FAULT	---	---	R3, B3

Note: Alarm 5, 6, 7, 8 are disabled as factory defaults. **R**: Relay. **B**: Buzzer.

4.13 Relay Style Default Settings

Relay1 Settings					
Flag	**Style1**	**Style2**	**Style3**	**On Delay**	**Off Delay**
√ Enabled	***√ Normally De-Energized***	***√ Non-Latching***	***√ Relay Mode***	***5 Seconds***	***5 Seconds***
Disabled	**Normally Energized**	**Latching**	**Buzzer Mode**		

Relay2 Settings					
Flag	**Style1**	**Style2**	**Style3**	**On Delay**	**Off Delay**
√ Enabled	***√ Normally De-Energized***	***√ Non-Latching***	***√ Relay Mode***	***5 Seconds***	***5 Seconds***
Disabled	**Normally Energized**	**Latching**	**Buzzer Mode**		

Relay3 Settings					
Flag	**Style1**	**Style2**	**Style3**	**On Delay**	**Off Delay**
√ Enabled	***√ Normally De-Energized***	***√ Non-Latching***	***√ Relay Mode***	***5 Seconds***	***5 Seconds***
Disabled	**Normally Energized**	**Latching**	**Buzzer Mode**		

4.14 Buzzer Style Default Settings

Buzzer1 Settings			
Flag	**Style1**	**On Delay**	**Off Delay**
√ Enabled **Disabled**	***√ Chirp Once*** **Chirp Twice** **Duty 50% ON** **Constant ON**	***5 Seconds***	***5 Seconds***

Buzzer2 Settings			
Flag	**Style1**	**On Delay**	**Off Delay**
√ Enabled **Disabled**	**Chirp Once** **Chirp Twice** ***√ Duty 50% ON*** **Constant ON**	***5 Seconds***	***5 Seconds***

Buzzer3 Settings			
Flag	**Style1**	**On Delay**	**Off Delay**
√ Enabled **Disabled**	**Chirp Once** ***√ Chirp Twice*** **Duty 50% ON** **Constant ON**	***5 Seconds***	***5 Seconds***

4.15 A-Out Default Settings

Analog Output			
Input	**Concentration at 4mA**	**Concentration at 20mA**	**VDC Output**
√ Instantaneous **STEL (15 Minutes)** **TWA (8 Hours)** **Daily PEAK (24 Hours)**	***See table in next page***	***See table in next page***	***1 – 5VDC*** **2 - 10VDC**

STEL: (Short Term Exposure Limit) The maximum concentration of a chemical to which workers may be exposed continuously for up to 15 minutes without danger to health or work efficiency and safety.

TWA: (Time Weighted Average) The average exposure to a contaminant or condition to which workers may be exposed without adverse effect over a period such as in an 8-hour day or 40-hour week.

When VDC output is set to "1 – 5VDC"

- Q5 outputs 1VDC when the current 4mA is output.
- Q5 outputs 5VDC when the current 20mA is output.

When VDC output is set to "2 – 10VDC"

- VDC outputs 2V when the analog current output outputs 4mA.
- VDC outputs 10V when the analog current output outputs 20mA.

So there is no specific/separate gas concentration for the VDC output. It follows the 4-20mA output.