

**CONFIGURATION PARAMETERS – MODULE (PAGE 1)**

101	Contrast	0 (%)	110	DTC String Enable	On (1), Off (0)
102	Fast Loading Enabled	On (1), Off (0)	111	Pin Number	0000
103	All Warnings Latched	On (1), Off (0)	112	Stop Button Coldown	On (1), Off (0)
104	Lamp Test At Startup	On (1), Off (0)	113	Use Module Oil Pressure	On (1), Off (0)
105	Power Save Mode Enable	On (1), Off (0)	114	Use Module Coolant Temp	On (1), Off (0)
106	Deep Sleep Mode Enable	On (1), Off (0)	115	Use Module Engine Hours	On (1), Off (0)
107	Protected Start Enable	On (1), Off (0)	116	Use Module RPM	On (1), Off (0)
108	Event Log Display Format	On (1), Off (0)	117	Use Module Charge Alt	On (1), Off (0)
109	Power Up Mode	0 (Power Up Mode)	118	Disable CAN Speed Control	On (1), Off (0)

**CONFIGURATION PARAMETERS – CAN APPLICATION (PAGE 2)**

201	CAN Alternative Engine Speed	On (1), Off (0)	203	CAN ECU Data Fail Action	0 (Action)
202	CAN ECU Data Fail Enable	On (1), Off (0)	204	CAN ECU Data Fail Delay	0 s

**CONFIGURATION PARAMETERS – INPUTS (PAGE 3)**

301	Low Oil Pressure Enable		302	Low Oil Pressure Trip	0.00 Bar
303	Oil Pressure Sender Open Circuit		304	High Engine Temperature Trip	0 °C
305	Temperature Sender Open Circuit		306	Low Fuel Shutdown Output 1 Enable	On (1), Off (0)
307	Low Fuel Shutdown Output 1 Level	0 %	308	Low Fuel Shutdown Output 1 Timer	0 s
309	Low Fuel Shutdown Output 2 Enable		310	Low Fuel Shutdown Output 2 Level	0 %
311	Low Fuel Shutdown Output 2 Timer	0 s	312	Low Fuel Shutdown Output 3 Enable	On (1), Off (0)
313	Low Fuel Shutdown Output 3 Level	0 %	314	Low Fuel Shutdown Output 3 Timer	0 s
315	Low Fuel Shutdown Output 4 Enable		316	Low Fuel Shutdown Output 4 Level	0 %
317	Low Fuel Shutdown Output 4 Timer	0 s	318	Digital Input A Source	0 (Input Source)
319	Digital Input A Polarity	0 (Polarity)	320	Digital Input A Action (If Source = User Config)	0 (Action)
321	Digital Input A Arming (If Source = User Config)	0 (Arming)	322	Digital Input A Activation Delay (If Source = User Config)	0 s
323	Digital Input B Source	0 (Input Source)	324	Digital Input B Polarity	0 (Polarity)
325	Digital Input B Action (If Source = User Config)	0 (Action)	326	Digital Input B Arming (If Source = User Config)	0 (Arming)
327	Digital Input B Activation Delay (If Source = User Config)	0 s	328	Digital Input C Source	0 (Input Source)
329	Digital Input C Polarity	0 (Polarity)	330	Digital Input C Action (If Source = User Config)	0 (Action)
331	Digital Input C Arming (If Source = User Config)	0 (Arming)	332	Digital Input C Activation Delay (If Source = User Config)	0 s
333	Digital Input D Source	0 (Input Source)	334	Digital Input D Polarity	0 (Polarity)
335	Digital Input D Action (If Source = User Config)	0 (Action)	336	Digital Input D Arming (If Source = User Config)	0 (Arming)
337	Digital Input D Activation Delay (If Source = User Config)	0 s	338	Analogue Input A Sensor Type	0 (Sensor Type)
339	Analogue Input A Sensor Selection (Pressure Sensor List)	0 (Pressure Sensor)	340	Analogue Input A (Set As Digital) Source	0 (Input Source)
341	Analogue Input A (Set As Digital) Polarity	0 (Polarity)	342	Analogue Input A (Set As Digital) Action (If Source = User Config)	0 (Action)
343	Analogue Input A (Set As Digital) Arming (If Source = User Config)	0 (Arming)	344	Analogue Input A (Set As Digital) Activation Delay (If Source = User Config)	0 s
345	Analogue Input B Sensor Type	0 (Sensor Type)	346	Analogue Input B Sensor Selection (Temperature Sensor List)	0 (Temp Sensor)
347	Analogue Input B (Set As Digital) Source	0 (Input Source)	348	Analogue Input B Polarity (Set As Digital)	0 (Polarity)
349	Analogue Input B (Set As Digital) Action (If Source = User Config)	0 (Action)	350	Analogue Input B (Set As Digital) Arming (If Source = User Config)	0 (Arming)
351	Analogue Input B (Set As Digital) Activation Delay (If Source = User Config)	0 s	352	Analogue Input C Sensor Type	0 (Sensor Type)
353	Analogue Input C Sensor Selection (Percentage Sensor List)	0 (Sensor List)	354	Analogue Input C (Set As Digital) Source	0 (Input Source)
355	Analogue Input C (Set As Digital) Polarity	0 (Polarity)	356	Analogue Input C (Set As Digital) Action (If Source = User Config)	0 (Action)
357	Analogue Input C (Set As Digital) Arming (If Source = User Config)	0 (Arming)	358	Analogue Input C (Set As Digital) Activation Delay (If Source = User Config)	0 s
359	Fuel Units	0 (Fuel Units)	360	Fuel Tank Size	0

Functionality in both DSEL400 &amp; DSE L401

Functionality only in DSEL401

**CONFIGURATION PARAMETERS – OUTPUTS (PAGE 4)**

401	Digital Output A Source	0 (Output Source)	407	Digital Output D Source	0 (Output Source)
402	Digital Output A Polarity	0 (Output Polarity)	408	Digital Output D Polarity	0 (Output Polarity)
403	Digital Output B Source	0 (Output Source)	409	Digital Output E Source	0 (Output Source)
404	Digital Output B Polarity	0 (Output Polarity)	410	Digital Output E Polarity	0 (Output Polarity)
405	Digital Output C Source	0 (Output Source)	411	Digital Output F Source	0 (Output Source)
406	Digital Output C Polarity	0 (Output Polarity)	412	Digital Output F Polarity	0 (Output Polarity)

**CONFIGURATION PARAMETERS – TIMERS (PAGE 5)**

501	Start Delay	510	Cooling Time	519	Light Shutdown Timer 2
502	Preheat Timer	511	ETS Solenoid Hold	520	Light Shutdown Timer 3
503	Crank Time	512	Failed To Stop Delay	521	Light Shutdown Timer 4
504	Crank Rest Time	513	Generator Transient Delay	522	Power Save Mode Delay
505	Smoke Limiting	514	Light Start-Up Timer 1	523	Deep Sleep Mode Delay
506	Smoke Limiting Off	515	Light Start-Up Timer 2	524	Page Timer
507	Safety On Delay	516	Light Start-Up Timer 3	525	Cooldown Idle Time
508	Warm Up Time	517	Light Start-Up Timer 4		
509	Return Delay	518	Light Shutdown Timer 1		

**CONFIGURATION PARAMETERS – GENERATOR (PAGE 6)**

601	Alternator Fitted	On (1), Off (0)	621	Over Frequency Warning Trip	0.0 Hz
602	Alternator Poles	0	622	Over Frequency Shutdown Enable	On (1), Off (0)
603	Under Voltage Shutdown Enable	On (1), Off (0)	623	Over Frequency Shutdown Trip	0.0 Hz
604	Under Voltage Shutdown Trip	0 V	624	AC System	0 (Ac System)
605	Under Voltage Warning Enable	On (1), Off (0)	625	CT Primary	0 A
606	Under Voltage Warning Trip	0 V	626	Full Load Rating	0 A
607	RESERVED		627	Immediate Over Current Enable	On (1), Off (0)
608	Loading Voltage	0 V	628	Delayed Over Current Alarm Enable	On (1), Off (0)
609	Over Voltage Warning Enable	On (1), Off (0)	629	Delayed Over Current Alarm Action	0 (Action)
610	Over Voltage Warning Return	0 V	630	Over Current Delay Time	0 s
611	Over Voltage Warning Trip	0 V	631	Over Current Trip	0 %
612	Over Voltage Shutdown Trip	0 V	632	Low Current Alarm Enable	On (1), Off (0)
613	Under Frequency Shutdown Enable	On (1), Off (0)	633	Low Current Alarm Action	0 (Action)
614	Under Frequency Shutdown Trip	0.0 Hz	634	Low Current Alarm Percentage	0%
615	Under Frequency Warning Enable	On (1), Off (0)	635	Low Current Alarm Delay	0 s
616	Under Frequency Warning Trip	0.0 Hz	636	Lamp 1 Current Rating	0.0 A
617	Loading Frequency	0.0 Hz	637	Lamp 2 Current Rating	0.0 A
618	Nominal Frequency	0.0 Hz	638	Lamp 3 Current Rating	0.0 A
619	Over Frequency Warning Enable	On (1), Off (0)	639	Lamp 4 Current Rating	0.0 A
620	Over Frequency Warning Return	0.0 Hz			

**CONFIGURATION PARAMETERS – ENGINE (PAGE 7)**

701	Start Attempts	0	718	High Battery Voltage Return	0.0 V
702	Gas Choke Timer (Gas Engine Only)	0 s	719	High Battery Voltage Trip	0.0 V
703	Gas On Delay (Gas Engine Only)	0 s	720	High Battery Voltage Delay	0 s
704	Gas Ignition Off Delay (Gas Engine Only)	0 s	721	Charge Alt Shutdown Enable	On (1), Off (0)
705	Crank Disconnect On Oil Pressure Enable	On (1), Off (0)	722	Charge Alt Shutdown Trip	0.0 V
706	Check Oil Pressure Prior To Starting	On (1), Off (0)	723	Charge Alt Shutdown Delay	0 s
707	Crank Disconnect On Oil	0.0 Bar	724	Charge Alt Warning Enable	On (1), Off (0)
708	Crank Disconnect On Frequency	0.0 Hz	725	Charge Alt Warning Trip	0.0 V
709	Crank Disconnect On Engine Speed	0 RPM	726	Charge Alt Warning Delay	0 s
710	Under Speed Enable	On (1), Off (0)	727	Low Battery Engine Start Arming	On (1), Off (0)
711	Under Speed Trip	0 RPM	728	Low Battery Engine Start Threshold	0.0 V
712	Over Speed Trip	0 RPM	729	Low Battery Engine Start Delay	0 s
713	Low Battery Voltage Enable	On (1), Off (0)	730	Low Battery Engine Start Run Time	0 s
714	Low Battery Voltage Trip	0.0 V	731	Low Fuel Level Warning Enable	On (1), Off (0)
715	Low Battery Voltage Return	0.0 V	732	Low Fuel Level Warning Action	0 (Action)
716	Low Battery Voltage Delay	0 s	733	Low Fuel Level Trip	0 %
717	High Battery Voltage Enable	On (1), Off (0)	734	Low Fuel Level Delay	0 s

Functionality in both DSEL400 &amp; DSE L401

Functionality only in DSEL401

**CONFIGURATION PARAMETERS – ALTERNATE CONFIGURATION (PAGE 8)**

801	Default Configuration				Main (1), Alternative (0)
802	Alternate Configuration – Enable Configuration				On (1), Off (0)
803	Alternate Configuration – CAN Alternative Engine Speed				On (1), Off (0)
804	Alternate Configuration – Under Voltage Shutdown Enable				On (1), Off (0)
805	Alternate Configuration – Under Voltage Shutdown Trip				0 V
806	Alternate Configuration – Under Voltage Warning Enable				On (1), Off (0)
807	Alternate Configuration – Under Voltage Warning Trip				0 V
808	RESERVED				
809	Alternate Configuration – Loading Voltage				0 V
810	Alternate Configuration – Over Voltage Warning Enabled				On (1), Off (0)
811	Alternate Configuration – Over Voltage Warning Trip				0 V
812	Alternate Configuration – Over Voltage Warning Return				0 V
813	Alternate Configuration – Over Voltage Shutdown Trip				0 V
814	Alternate Configuration – Under Frequency Shutdown Enable				On (1), Off (0)
815	Alternate Configuration – Under Frequency Shutdown Trip				0.0 Hz
816	Alternate Configuration – Under Frequency Warning Enable				On (1), Off (0)
817	Alternate Configuration – Under Frequency Warning Trip				0.0 Hz
818	Alternate Configuration – Loading Frequency				0.0 Hz
819	Alternate Configuration – Nominal Frequency				0.0 Hz
820	Alternate Configuration – Over Frequency Warning Enabled				On (1), Off (0)
821	Alternate Configuration – Over Frequency Warning Trip				0.0 Hz
822	Alternate Configuration – Over Frequency Warning Return				0.0 Hz
823	Alternate Configuration – Over Frequency Shutdown Enabled				On (1), Off (0)
824	Alternate Configuration – Over Frequency Shutdown Trip				0.0 Hz
825	Alternate Configuration – CT Primary				0 A
826	Alternate Configuration – Full Load Rating				0 A
827	Alternate Configuration – Immediate Over Current Enabled				On (1), Off (0)
828	Alternate Configuration – Delayed Over Current Alarm Enabled				On (1), Off (0)
829	Alternate Configuration – Delayed Over Current Alarm Action				0 (Action)
830	Alternate Configuration – Over Current Delay Timer				0 s
831	Alternate Configuration – Over Current Trip				0 %
832	Alternate Configuration – AC System				0 (Ac System)
833	Alternate Configuration – Under Speed Shutdown Enabled				On (1), Off (0)
834	Alternate Configuration – Under Speed Shutdown Trip				0 RPM
835	Alternate Configuration – Over Speed Shutdown Trip				0 RPM
836	Low Current Alarm Enable				On (1), Off (0)
837	Low Current Alarm Action				0 (Action)
838	Low Current Alarm Threshold				0%
839	Low Current Alarm Delay				0 s
840	Lamp 1 Current Rating				0 Amps
841	Lamp 2 Current Rating				0 Amps
842	Lamp 3 Current Rating				0 Amps
843	Lamp 4 Current Rating				0 Amps

**CONFIGURATION PARAMETERS – SCHEDULER (PAGE 9)**

901	Enable Scheduler	On (1), Off (0)	919	Scheduler (4) Duration	0:00:00
902	Schedule Run On or Off Load	On (1), Off (0)	920	Scheduler (5) Start Time	0:00:00
903	Schedule Period	Weekly (0), Monthly (1)	921	Scheduler (5) Start Day	0 (1=Monday)
904	Scheduler (1) Start Time	0:00:00	922	Scheduler (5) Start Week	1,2,3,4
905	Scheduler (1) Start Day	0 (1=Monday)	923	Scheduler (5) Duration	0:00:00
906	Scheduler (1) Start Week	1,2,3,4	924	Scheduler (6) Start Time	0:00:00
907	Scheduler (1) Duration	0:00:00	925	Scheduler (6) Start Day	0 (1=Monday)
908	Scheduler (2) Start Time	0:00:00	926	Scheduler (6) Start Week	1,2,3,4
909	Scheduler (2) Start Day	0 (1=Monday)	927	Scheduler (6) Duration	0:00:00
910	Scheduler (2) Start Week	1,2,3,4	928	Scheduler (7) Start Time	0:00:00
911	Scheduler (2) Duration	0:00:00	929	Scheduler (7) Start Day	0 (1=Monday)
912	Scheduler (3) Start Time	0:00:00	930	Scheduler (7) Start Week	1,2,3,4
913	Scheduler (3) Start Day	0 (1=Monday)	931	Scheduler (7) Duration	0:00:00
914	Scheduler (3) Start Week				

**INPUT SOURCES**

0 User Configured	10 Inhibit Light Output 3	20 Photocell Start
1 Alarm Mute	11 Inhibit Light Output 4	21 Remote Start Off Load
2 Lamp Test	12 Lamp Test	22 Remote Start On load
3 Alternative Configuration	13 Light Output Activation 1	23 Simulate Stop Button
4 Auto Start Inhibit	14 Light Output Activation 2	24 Simulate Auto Button
5 Coolant Temperature Switch	15 Light Output Activation 3	25 Simulate Start Button
6 Emergency Stop	16 Light Output Activation 4	26 Safety Limiting
7 External Panel Lock	17 Low Fuel Level Switch	27 Maintenance Reset Oil
8 Inhibit Light Output 1	18 Oil Pressure Switch	28 Maintenance Reset Air
9 Inhibit Light Output 2	19 Override Fuel Shutdown	29 Maintenance Reset Fuel

**OUTPUT SOURCES**

0 Not Used	23 Analogue Input A (Digital)	46 Light Output 3
1 Air Filter Maintenance	24 Analogue Input B (Digital)	47 Light Output 4
2 Air Flap Relay	25 Analogue Input C (Digital)	48 Low Fuel Level
3 Audible Alarm	26 Emergency Stop	49 Low Oil Pressure (Shutdown)
4 System In Auto Mode	27 Energo To Stop	50 System In Manual Mode
5 Battery Over Volts Warning	28 Fail To Start	51 Oil Filter Maintenance
6 Battery Under Volts Warning	29 Fail To Stop	52 Oil Pressure Open Circuit
7 CAN ECU Data Fail	30 Fuel Filter Maintenance	53 Generator Over Frequency Shutdown
8 CAN ECU Error	31 Fuel Relay	54 Over Speed Shutdown
9 CAN ECU Fail	32 Fuel Sender Trip 1	55 Preheat During Preheat Timer
10 CAN ECU Power	33 Fuel Sender Trip 2	56 Preheat Until End of Crank
11 CAN ECU Stop	34 Fuel Sender Trip 3	57 Preheat Until End of Safety Timer
12 Charge Alternator Shutdown	35 Fuel Sender Trip 4	58 Preheat Until End of Warming
13 Charge Alternator Warning	36 Gas Choke On	59 Smoke Limiting
14 Common Alarm	37 Gas Ignition	60 Start Relay
15 Common Electrical Trip	38 Generator Available	61 System In Stop Mode
16 Common Shutdown	39 Generator Over Voltage Shutdown	62 Temperature Sender Open Circuit
17 Common Warning	40 Generator Under Voltage Shutdown	63 Generator Under frequency Shutdown
18 Cooling Down	41 Generator Over Current	64 Under Speed Shutdown
19 Digital Input A	42 Generator Delayed Over Current	65 Generator Over Frequency Overshoot
20 Digital Input B	43 High Coolant Temperature (Shutdown)	66 Over Speed Overshoot
21 Digital Input C	44 Light Output 1	67 Low Current Alarm
22 Digital Input D	45 Light Output 2	68 Display Heater On (Heater Variant Only)

**ALARM ACTION****FLEXIBLE SENSOR ALARM ACTION****ACTION**

Index	Action	Index	Action	Index	Mode
0	Electrical Trip	0	None	0	Stop
1	Shutdown	1	Shutdown	1	Manual
2	Warning	2	Electrical Trip	2	Auto

**SENSOR TYPE****AC SYSTEM**

Index	Type	Index	Type	Index	Arming
0	None	0	2 Phase 3 Wire (L1-L2)	0	Always
1	Digital Input	1	2 Phase 3 Wire (L1-L3)	1	From Safety On
2	Percentage Sensor	2	3 Phase 3 Wire	2	From Starting
3	Pressure Sensor	3	3 Phase 4 Wire	3	Never
4	Temperature Sensor	4	3 Phase 4 Wire (Delta)		
		5	Single Phase 2 Wire		

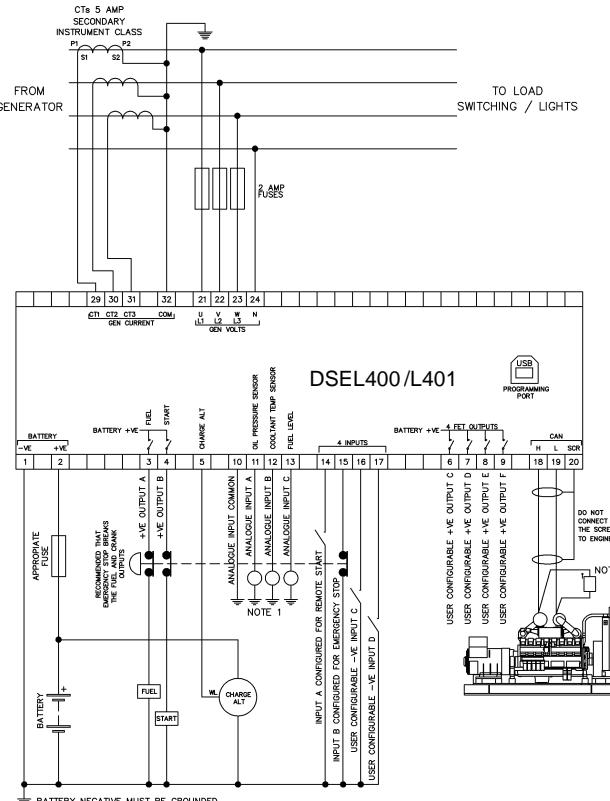
**DIGITAL INPUT POLARITY****OUTPUT POLARITY****FUEL UNITS**

Index	Polarity	Index	Polarity	Index	Units
0	Close to Activate	0	Energise	0	Litres
1	Open to Activate	1	De-Energise	1	Imperial Gallons
				2	US Gallons

**PRESSURE SENSOR LIST****TEMPERATURE SENOR LIST**

Index	Type	Index	Type	Index	Type
0	Not used	0	Not Used	0	Not Used
1	Dig Closed for Alarm	1	Dig Closed for Alarm	1	Dig Closed for Alarm
2	Dig Open for Alarm	2	Dig Open for Alarm	2	Dig Open for Alarm
3	VDO 5 Bar	3	VDO 120 °C	3	VDO Ohm (10-180)
4	VDO 10 Bar	4	Datcon High	4	VDO Tube (90-0)
5	Datcon 5 Bar	5	Datcon Low	5	US Ohm (240-33)
6	Datcon 10 Bar	6	Murphy	6	GM Ohm (0-90)
7	Datcon 7 Bar	7	Cummins	7	GM Ohm (0-30)
8	Murphy 7 Bar	8	PT100	8	Ford (73-10)
9	CMB812	9	Veglia	9	User Defined
10	Veglia	10	Beru		
11	User Defined	11	User Defined		

Functionality in both DSEL400 & DSE L401  
Functionality only in DSEL401

**TYPICAL WIRING DIAGRAM****DEEP SEA ELECTRONICS PLC**  
**DSEL400 & DSEL401 Installation Instructions****EDITING A PARAMETER**

- Press the (-) and (+) buttons together to enter the editor mode.
- Press the or navigation buttons to cycle through the front panel editor to select the required page in the configuration tables.
- Press the (+) to select the next parameter or (-) to select the previous parameter within the current page.
- When viewing the parameter to be edited, press the button, the value begins to flash.
- Press the (+) or (-) buttons to adjust the value to the required setting.
- Press the button to save the current value, the value ceases flashing.
- Press and hold the button to save and exit the editor, the configuration icon is removed from the display.

**NOTE:** Pressing and holding the (+) or (-) buttons will give auto-repeat functionality. Values can be changed quickly by holding the buttons for a prolonged period of time.

**DIMENSIONS**

140mm x 113mm x 43mm  
(5.5" x 4.4" x 1.7")

**PANEL CUTOUT**

118mm x 92mm  
(4.6" x 3.6")

**TERMINALS**

Tightening Torque: 0.5 Nm (4.5 lb-in)  
Conductor Size: 0.5mm² to 2.5mm²  
(AWG 24 to AWG 10)

**NOTE:** Terminals 29, 30, 31 & 32 not fitted to the DSEL400

**NOTE:** A larger version of the typical wiring diagram is included in the products operator manual. Refer to DSE Publication:  
**057-187 DSEL400 & DSEL401 Operators Manual**

**REQUIREMENTS FOR UL CERTIFICATION**

SPECIFICATION	DESCRIPTION
Screw Terminal Tightening Torque	4.5 lb-in (0.5 Nm)
Conductors	<ul style="list-style-type: none"> <li>Terminals suitable for connection of conductor size 12 AWG – 26 AWG (0.5mm² to 2.0mm²).</li> <li>Conductor protection must be provided in accordance with NFPA 70, Article 240.</li> <li>Low voltage circuits (35 volts or less) must be supplied from the engine starting battery or an isolated secondary circuit.</li> <li>The communication, sensor, and/or battery derived circuit conductors shall be separated and secured to maintain at least 1/4" (6mm) separation from the generator and mains connected circuit conductors unless all conductors are rated 600 Volts or greater.</li> </ul>
Current Inputs	Must be connected through UL Listed or Recognized isolating current transformers with the secondary rating of 5A max.
Communication Circuits	Must be connected to communication circuits of UL Listed equipment
Output Pilot Duty	0.5 A
Mounting	<ul style="list-style-type: none"> <li>Suitable for use in type 1 Enclosure Type rating with surrounding air temperature -22°F to +158°F (-30°C to +70°C)</li> <li>Suitable for pollution degree 3 environments when voltage sensing inputs do not exceed 300V. When used to monitor voltages over 300V device to be installed in an unventilated or filtered ventilation enclosure to maintain a pollution degree 2 environment.</li> </ul>
Operating Temperature	-22°F to +158°F (-30°C to +70°C)
Storage Temperature	-40°F to +176°F (-40°C to +80°C)