



TECHNICAL MANUAL

3110-MPU

Generator Control Module

<https://gensetpart.com/generator-controller/>

COMPATIBLE REPLACEMENT PART

POPULACE has manufactured generator electronic parts in Xiamen, China since 2006. 1000+ SKUs in stock, 1-5 day dispatch, every unit burn-in tested before shipment.

Document contents

- Specification and technical characteristics
- Terminal assignment and wiring diagram
- Installation, adjustment and settings
- Troubleshooting table

This document is supplied by POPULACE Electronic Co., Ltd. as an installation and operating guide for a POPULACE compatible replacement part. It is not an original equipment manufacturer (OEM) document. Any brand names or part numbers mentioned are for cross-reference and identification purposes only and do not indicate affiliation with, or endorsement by, the respective manufacturers.

Why source this part from POPULACE

- Factory in Xiamen, China - operating since 2006 (20 years)
- Over 1000 SKUs held in stock; dispatch within 1-5 days
- Every unit burn-in tested at 65 C before shipment
- CE and ISO 9001 production system; full batch traceability
- Free technical support for wiring, settings and fault diagnosis

Get a quote / technical support

Web: <https://gensetpart.com>
Email: grace@genpart.cn
Phone / WhatsApp: +86-138-5038-3550

No.702 Xiniya Building, No.90 Anling Second Road, XIAMEN, FUJIAN, China

Configuration Parameters – Module (Page 1)

101	Contrast	000 %	
102	RESERVED		
103	RESERVED		
104	Lamp Test at Startup	On (1), Off (0)	
105	Power Save Mode Enable	On (1), Off (0)	
106	Protected Start Enabled	On (1), Off (0)	
107	Power Up in Auto Mode	On (1), Off (0)	
108	Oil Pressure Display	PSI (1), Bar (0)	CAN
109	Display Volts in Ph-Ph	On (1), Off (0)	
110	Temperature Display	°F (1), °C (0)	CAN

Configuration Parameters – Application (Page 2)

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

Configuration Parameters – Digital Inputs (Page 3)

301	Low Oil Pressure Enable	On (1), Off (0)	CAN
302	Low Oil Pressure Trip	0.00 Bar / PSI	CAN
303	High Engine Temperature Trip	0 °C / °F	CAN
304	Digital Input A Source	0 (Input Source)	
305	Digital Input A Polarity	0 (Polarity)	
306	Digital Input A Action (If Source = User Config)	0 (Action)	
307	Digital Input A Arming (If Source = User Config)	0 (Arming)	
308	RESERVED		
309	Digital Input B Source	0 (Input Source)	
310	Digital Input B Polarity	0 (Polarity)	
311	Digital Input B Action (If Source = User Config)	0 (Action)	
312	Digital Input B Arming (If Source = User Config)	0 (Arming)	
313	RESERVED		
314	Digital Input C Source	0 (Input Source)	
315	Digital Input C Polarity	0 (Polarity)	
316	Digital Input C Action (If Source = User Config)	0 (Action)	
317	Digital Input C Arming (If Source = User Config)	0 (Arming)	
318	RESERVED		
319	Digital Input D Source	0 (Input Source)	
320	Digital Input D Polarity	0 (Polarity)	
321	Digital Input D Action (If Source = User Config)	0 (Action)	
322	Digital Input D Arming (If Source = User Config)	0 (Arming)	
323	RESERVED		
324	Digital Input E Source	0 (Input Source)	
325	Digital Input E Polarity	0 (Polarity)	
326	Digital Input E Action (If Source = User Config)	0 (Action)	
327	Digital Input E Arming (If Source = User Config)	0 (Arming)	
328	RESERVED		
329	Digital Input F Source	0 (Input Source)	
330	Digital Input F Polarity	0 (Polarity)	
331	Digital Input F Action (If Source = User Config)	0 (Action)	
332	Digital Input F Arming (If Source = User Config)	0 (Arming)	

Configuration Parameters – Outputs (Page 4)

401	Digital Output A Source	0 (Output Source)	CAN
402	Digital Output A Polarity	0 (Output Polarity)	CAN
403	Digital Output B Source	0 (Output Source)	CAN
404	Digital Output B Polarity	0 (Output Polarity)	CAN
405	Digital Output C Source	0 (Output Source)	
406	Digital Output C Polarity	0 (Output Polarity)	
407	Digital Output D Source	0 (Output Source)	
408	Digital Output D Polarity	0 (Output Polarity)	

Configuration Parameters – Timers (Page 5)

501	Remote Start Delay		
502	Preheat Timer		
503	RESERVED		
504	RESERVED		
505	Smoke Limiting		
506	Smoke Limiting Off		
507	RESERVED		
508	Warm Up Time		
509	Return Delay		
510	Cooling Time		
511	ETS Solenoid Hold		
512	RESERVED		
513	RESERVED		
514	RESERVED		
515	Breaker Trip Pulse		
516	Breaker Close Pulse		

Configuration Parameters – Generator (Page 6)

601	Alternator Fitted	On (1), Off (0)	
602	Alternator Poles	0	
603	RESERVED		
604	RESERVED		
605	Under Voltage Shutdown Enabled	On (1), Off (0)	
606	Under Voltage Trip Shutdown	0 V	
607	Loading Voltage	0 V	
608	Over Voltage Shutdown Trip	0 V	
609	Under Frequency Shutdown Enabled	On (1), Off (0)	
610	Under Frequency Shutdown Trip	0.0 Hz	
611	Loading Frequency	0.0 Hz	
612	Nominal Frequency	0.0 Hz	
613	Over Frequency Shutdown Enabled	On (1), Off (0)	
614	Over Frequency Shutdown Trip	0.0 Hz	
615	AC System	0-4	

Configuration Parameters – Engine (Page 7)

701	Magnetic Pickup Fitted	On (1), Off (0)	MPUHz
702	Plywheel Teeth	000	MPUHz
703	Start Attempts	0	
704	RESERVED		
705	RESERVED		MPUHz
706	Gas Choke Timer (Gas Engine Only)	0.00	MPUHz
707	Gas On Delay (Gas Engine Only)	0.00	MPUHz
708	Gas Ignition Off Delay (Gas Engine Only)	0.00	
709	Crank Disconnect on Oil Enable	On (1), Off (0)	
710	Check Oil Pressure Prior to Starting	On (1), Off (0)	
711	Crank Disconnect on Oil Threshold	0.00 Bar	CAN
712	Crank Disconnect on Frequency	0.0 Hz	
713	Crank Disconnect on Engine Speed	000 rpm	
714	Under Speed Enable	On (1), Off (0)	
715	Under Speed Trip	0000 rpm	
716	Over Speed Trip	0000 rpm	
717	RESERVED		
718	RESERVED		
719	RESERVED		
720	RESERVED		
721	RESERVED		
722	RESERVED		
723	RESERVED		
724	RESERVED		
725	Charge Air Failure Enable	On (1), Off (0)	
726	Charge Air Failure Trip	0.0 V	

Configuration Parameters – Alternate Configuration (Page 8)

801	Enable Configuration	On (1), Off (0)	
802	Alternative Engine Speed	On (1), Off (0)	
803	Under Voltage Shutdown Enabled	On (1), Off (0)	
804	Under Voltage Trip	On (1), Off (0)	
805	Under Voltage Trip Level	0 V	
806	Loading Voltage	0 V	
807	Over Voltage Trip Level	0 V	
808	Under Frequency Enabled	On (1), Off (0)	
809	Under Frequency Trip Level	0.0 Hz	
810	Loading Frequency	0.0 Hz	
811	Nominal Frequency	0.0 Hz	
812	Over Frequency Enabled	On (1), Off (0)	
813	Over Frequency Trip Level	0.0 Hz	
814	Alternative Under Speed Enable	On (1), Off (0)	
815	Alternative Under Speed Trip	0000 rpm	
816	Alternative Over Speed Trip	0000 rpm	

Digital Input Polarity		Output Polarity		Alarm Action	
Index	Polarity	Index	Polarity	Index	Action
0	Close to Activate	0	Energise	0	Electrical Trip
1	Open to Activate	1	De-Energise	1	Shutdown
				2	Warning

CAN Data Fail Action		CAN Data Fail Arming		Digital Input Alarm Arming	
Index	Type	Index	Arming	Index	Arming
0	None	0	From Safety On	0	Always
1	Shutdown	1	From Starting	1	From Safety On
2	Latched Warning			2	From Starting
				3	Never

REQUIREMENTS FOR UL CERTIFICATION

Specification	Description
Screw Terminal Tightening Torque	• 4.5 lb-in (0.5 Nm)
Conductors	• Terminals suitable for connection of conductor size 13 AWG (0.5 mm² to 2.5 mm²). • Conductor protection must be provided in accordance with NFPA 70, Article 240 • Low voltage circuits (35 V or less) must be supplied from the engine starting battery or an isolated secondary circuit. • The communication, sensor, and/or battery derived circuit conductors shall be separated and secured to maintain at least 1/4" (6 mm) separation from the generator and mains connected circuit conductors unless all conductors are rated 600 V or greater.
Current Inputs	• Must be connected through UL Listed or Recognized isolating current transformers with the secondary rating of 5 A max.
Communication Circuits	• Must be connected to communication circuits of UL Listed equipment
DC Output Pilot Duty	• 0.5 A
Mounting	• Suitable for use in type 1 Enclosure Type rating with surrounding air temperature -22 °F to +158 °F (-30 °C to +70 °C) • Suitable for pollution degree 3 environments when voltage sensing inputs do not exceed 300 V. When used to monitor voltages over 300 V device to be installed in an unventilated or filtered ventilation enclosure to maintain a pollution degree 2 environment.
Operating Temperature	• -22 °F to +158 °F (-30 °C to +70 °C)
Storage Temperature	• -40 °F to +176 °F (-40 °C to +80 °C)

AC System

Index	Type	Instrumentation
0	Single Phase 2 Wire	L-N
1	2 Phase 3 Wire (L1-L2 or L1-L3)	L-N x 2
2	3 Phase 4 Wire	L-N x 3
3	3 Phase 3 Wire	L-N
4	3 Phase 4 Wire (Delta)	L-N x 2

Output Sources

1	Not Used	
2	RESERVED	
3	RESERVED	
4	RESERVED	
5	RESERVED	
6	RESERVED	
7	CAN ECU Data Fail	CAN
8	CAN ECU Error	CAN
9	CAN ECU Fail	CAN
10	CAN ECU Power	CAN
11	CAN ECU Stop	CAN
12	RESERVED	
13	Close Gen Output	
14	Close Gen Output Pulse	
15	Common Alarm	
16	Common Shutdown	
17	Common Warning	
18	RESERVED	
19	RESERVED	
20	RESERVED	
21	RESERVED	
22	RESERVED	
23	RESERVED	
24	RESERVED	
25	RESERVED	
26	Energise to Stop	
27	RESERVED	
28	RESERVED	
29	Fuel Relay	
30	Gas Choke On	MPUHz
31	Gas Ignition	MPUHz
32	RESERVED	
33	RESERVED	
34	RESERVED	
35	RESERVED	
36	RESERVED	
37	RESERVED	
38	RESERVED	
39	RESERVED	
40	Open Gen Output	
41	Open Gen Output Pulse	
42	Plant Battery Over Voltage Warning	
43	Plant Battery Under Voltage Warning	
44	Preheat During Preheat Timer	
45	Preheat Until End of Crank	
46	Preheat Until End of Safety Timer	
47	Preheat Until End of Warning Timer	
48	Smoke Limiting	
49	Start Relay	

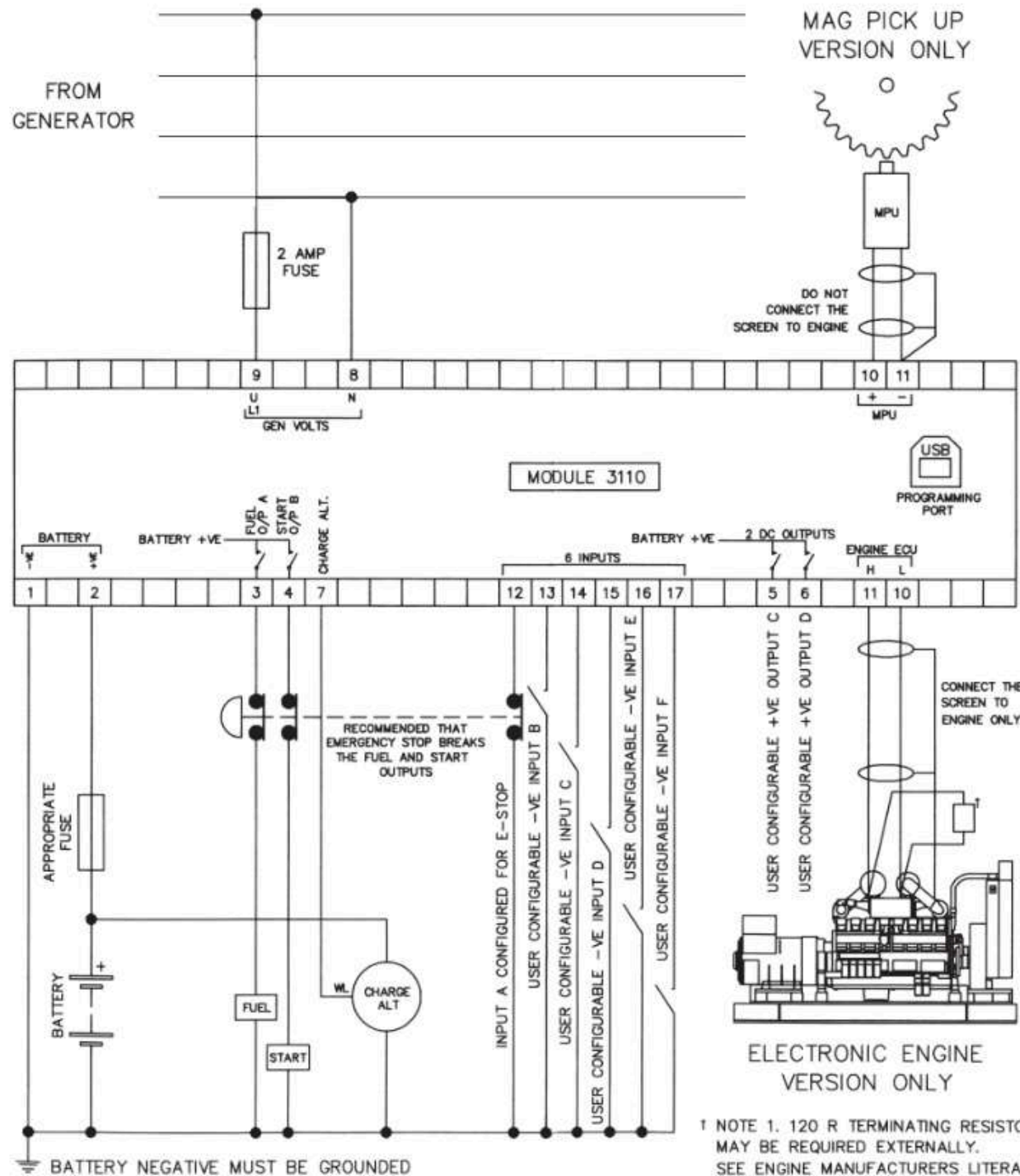
Input Source

0	User Configured	
1	RESERVED	
2	RESERVED	
3	Alternative Configuration	
4	Coolant Temperature Switch	
5	Emergency Stop	
6	External Panel Lock	
7	RESERVED	
8	RESERVED	
9	Low Fuel Level Switch	
10	Oil Pressure Switch	
11	Remote Start Off Load	
12	Remote Start On Load	
13	Smoke Limiting	

MPUHz 3110 – xxx – 01 (MPUHz) option only

CAN 3110 – xxx – 02 (CAN) option only

TYPICAL WIRING DIAGRAM



† NOTE 1. 120 R TERMINATING RESISTOR MAY BE REQUIRED EXTERNALLY. SEE ENGINE MANUFACTURERS LITERATURE

GC3110 Installation Instructions

EDITING A PARAMETER

- Press the *Stop/Reset Mode* and *Navigation* buttons together to enter the editor mode.
- Press the *Stop/Reset Mode* button to select the required page.
- Press the *Manual/Start Mode* (+) button to cycle to the next parameter, or the *Auto Mode* (-) buttons to cycle to the previous parameter, within the current page.
- When viewing the parameter to be edited, press the *Navigation* button and the value begins to flash.
- Press the *Manual/Start Mode* (+) or *Auto Mode* (-) buttons to adjust the value to the required setting.
- Press the *Navigation* button the save the current value, the value ceases flashing.
- Press and hold the *Navigation* button to exit the editor, the configuration icon is removed from the display.

NOTE: Pressing and holding the *Manual/Start Mode* (+) or *Auto Mode* (-) buttons will give auto-repeat functionality.

DIMENSIONS

99 mm x 79 mm x 43 mm
(3.9" x 3.4" x 1.6")

PANEL CUTOUT

80 mm x 68 mm
(3.2" x 2.7")

TERMINALS

Tightening Torque: 0.5 Nm (4.5 lb-in)
Conductor Size: 0.5 mm² to 2.5 mm²
(AWG 20 to AWG 13)