

PROTIME<sup>R</sup>



AMF - FUTURO

AMF - 1/UC

## Special Features

- Compact with total wireless interiors
- Only of its kind with LCD and MMIC type of front fascia makes it easy to use even for an unskilled person
- INDICATIONS for D.G Set start and stop and all faults (LLOP, HWT, O/S, O/L, LOW, battery, SFS, LFL, HZ Fault, Fail to Stop, C.B Fail etc) and Auto Load Change over REMOTE monitoring & control facility available (optional)
- Connecting of external Indicating lamps & pushbuttons is possible with very simple wiring
- RS 232 / 485 Compatibility (optional)
- ANNUNCIATION with flasher & buzzer both, including ACCEPT, RESET, & TEST facility.
- Facility for connection of external HOOTER
- Design facilitates easy and quick installation.
- Virtually MAINTENANCE FREE.
- Existing non-AMF panels can be easily converted in to AMF panels using AMF-futuro.
- First time with Semi Auto Mode of Operation
- Password protected settings.
- Programmable fault inputs

## INTRODUCTION

**AMF -1/UC** has been designed for the Control of emergency & Stand by Power System . It use an advanced single chip micro Computer for an easy and trouble free GEN-SET Control in Case of mains Power failures. If mains fails(under Voltage/Over Voltage or Loss of mains) AMF initiates an automatic GEN-SET Start cycle. The engine start relay (meant for operating cranking motor ) is activated. & GEN-SET Started automatically , load will be transferred by switching the generator Contractors. When the mains is restored(when mains return)the load will be automatically transferred back to mains and the GEN-SET Will stop after a cooling down time called as Idle run time The relay has a user friendly MMI in the form of a keypad & a digital display ( LCD ) . In all cycles generator is fully Protected against mal function. At by abnormal GEN-SET Conditions alarms occurs and conditions are Computed and displayed LED and LCD and if necessary the GEN-SET is get stopped.

## OPERATION

AMF futuro works on terminal voltage of battery i.e.12V or24V.It can be made to work in four modes Viz. Auto , Semi Auto Test , & manual . It senses all the three phases of mains supply individually & gives starting pulse to D.G. Set starter (Start solenoid ) along with FUEL SOLENOID, when any one phase goes below the set limit (settable on rear, 300V-400V). -

Thus D.G. Starts automatically when it develops its rated voltage (Settable between 300V 400V) the D.G. Contactor(or any switching device provided)is switched on after preset time delay. So, the power is supplied to load from D.G. Set. During this period If any fault on the Engine side or Over load occurs, the supply to load will trip and D.G. Will be stopped automatically and fault indicated by a flashing LED & buzzer. Fault is acknowledged by pressing ACCEPT push button.When fault is acknowledged the LED becomes steady & buzzer stops. After the fault is rectified the D.G. Set can be started once again.

When mains supply resumes, the load is changed-over to mains, but the Engine stops only after IDLE TIME set(settable on rear).In MANUAL mode the whole operation is achieved by manual push buttons. In TEST mode of operation, the load changeover is automatic and Engine start & stop operations are manual.

### Technical Specification

1	Supply Voltage		7 – 35V DC	4	Parameters (Setting)	Mains	Voltage – 300 400 V P. Up Time – 0.3 to 30 sec Trip Time – 0.3 to 30 sec		
2	Annunciation	Fault	Hwt	5	Contacts	Input	Crank	On Time – 0.1 to 15sec Off Time – 0.1 to 15sec	
			O/S				D.G.	Voltage-300 to 400V Time Delay - 0.3 to 30sec Idle Time – 0.3 to 3 Min	
			O/L				Flasher	Time – 0.1 to 10 sec	
			Batt Low				Output	LOP NC – NO	
			Set Fail To Start					HWT C – NO	
			Low Fuel level					O/S C – NO	
			Spare 1					O/L C – NO	
			Spare 2					LFL C – NO	
			Others					Crank On	SP – 1 C – NO
			Fuel On					SP – 2 C – NO	
			D.G On					FSR 12/24V DC	
			Load On D.G					SSR 12/24V DC	
			(R-Y-B) Mains On					Mains Contactor - C – NO	
			Load On Mains					D.G Contactor - C – No	
Mains Fail	3- PH. With Natural								
Auto / Test/ Manual									
3	Panel Control	D.G	Start / Stop	6	Signal input	Maiins	D.G.	2- PH	
		Mains	Close / Trip			D.G.	Load	1- PH	
		Annunciation	Close / Trip			Battery		12V / 24V	
			Accept	7	Mounting	Panel Cutout	Depth	225mm (L) X 92mm (H)	
			Reset					210mm.	
			Test	8	Weight			2.4 Kg	
			Emergency Stop						

### Types of Operations in Various Modes

Mode		Auto	Manual	Test	Semi Auto
D.G. START	Operation	Automatic	Manual	Manual	Automatic
D.G. STOP		Automatic	Manual	Manual	Manual
D.G.CLOSE		Automatic	Manual	Automatic	Manual
D.G.TRIP		Automatic	Manual	Automatic	Manual
Mains Close		Automatic	Manual	Automatic	Manual
Mains Trip		Automatic	Manual	Automatic	Automatic
Fuel Solenoid		Automatic	ON	ON	ON

Note:- Design & specification may change to our continuous developmental efforts

**CONNECTION DETAILS:**

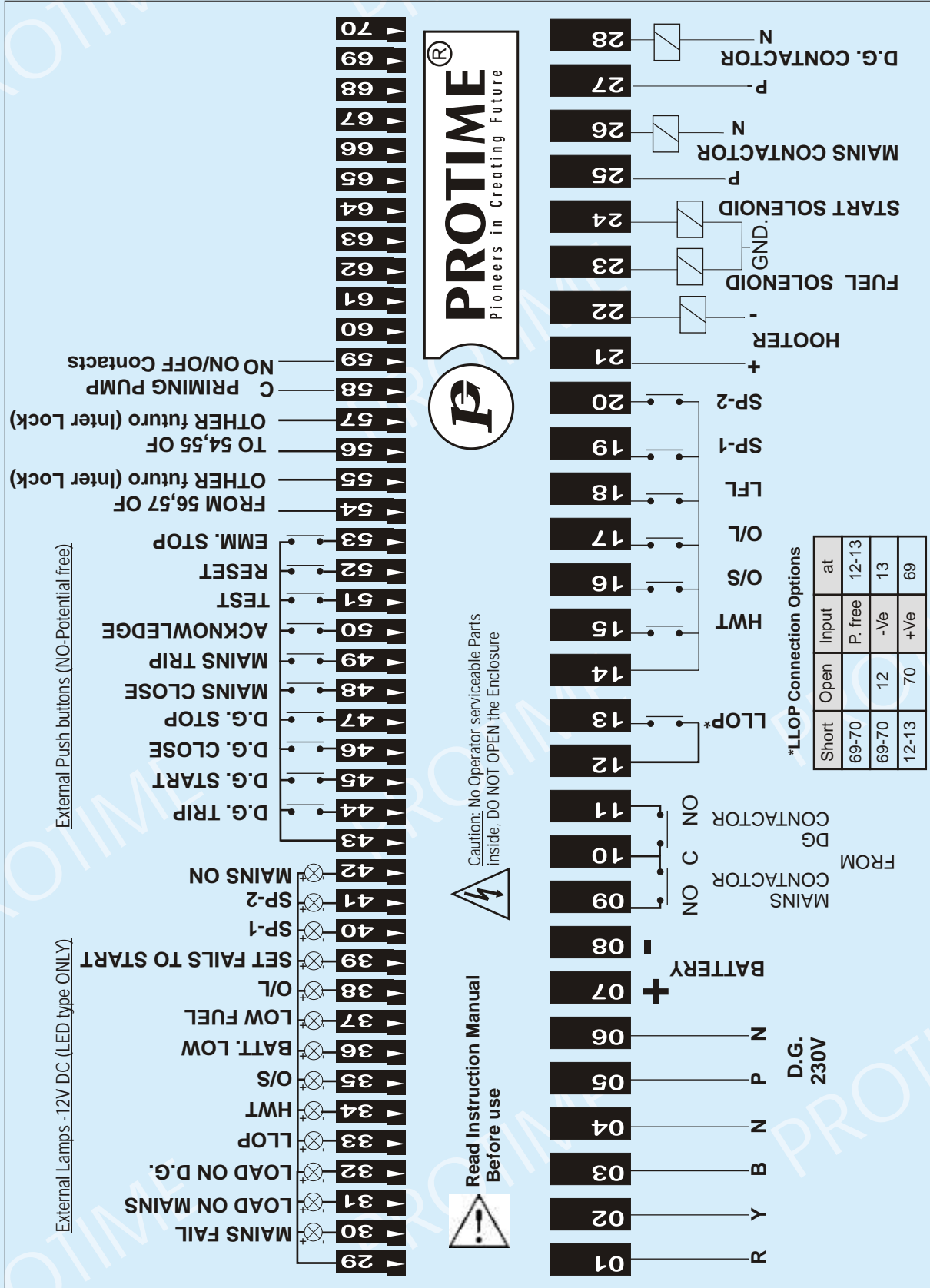
TERMINAL NOS	CONNECTIONS	DESCRIPTION
01	R	FOR MAINS SENSING
02	Y	
03	B	
04	N	
05	PH-1(130vAC	FOR D.G O/P SENSING
06	N	
07	+Ve	BATTERY12/24VDC POWER SUPPLY
08	-Ve	
09	NO	FROM MAINS CONTACTOR COMMON
10	C	
11	NO	FROM D.G CONTACTOR
12	C	LOW LUBE OIL PRESSURE SWITCH
13	NO	
14	C	HIGH WATER TEMP SWITCH
15	NO	
14	C	OVER SPEED SWITCH
16	NO	
14	C	OVER LOAD RELAY
17	NO	
14	C	LOW FUEL LEVEL SWITCH
18	NO	
14	C	SPARE-1
19	NO	
14	C	SPARE-2
20	NO	
21	C	CONTACTS FOR EXTERNAL HOOTER (10A)
22	NO	
23	+12/24VDC	TO FUEL SOLENOID
24	+12/24VDC	TO START SOLENOID
25	C	FOR MAINS CONTACTOR
26	NO	
27	C	FOR D.G CONTACTOR
28	NO	
29	+	MAINS FAIL LAMP 12V DC
30	-	
29	+	LOAD ON MAINS LAMP 12V DC
31	-	
29	+	LOAD ON D.G LAMP
32	-	

**CONNECTION DETAILS:**

TERMINAL NOS	CONNECTIONS	DESCRIPTION	
29	+	LLOP LAMP	External Lamp - 12V DC (LED type ONLY)
33	-		
29	+	WT LAMP	
34	-		
29	+	O/S LAMP	
35	-		
29	+	BATTERY LOW LAMP	
36	-		
29	+	LOW FUEL LAMP	
37	-		
29	+	OVER LOAD	
38	-		
29	+	FAIL TO START	
39	-		
29	+	Sp1	
40	-		
29	+	Sp2	
41	-		
29	+		
42	-	MAINS ON	
43	C	D.G. CLOSE	
44	NO		
43	C	D.G. START	
45	NO		
43	C	D.G. STOP	
46	NO		
43	C	D.G. TRIP	
47	NO		
43	C	MAINS CLOSE	
48	NO		
43	C	MAINS TRIP	
49	NO		
43	C	ACK	
50	NO		
43	C	TEST	
51	NO		
43	C	RESET	
52	NO		
43	C	EMERGENCY STOP	
53	NO		
54		FROM 56,57 OF	
55		OTHER FUTURO (Inter Lock)	
56		TO 54,55 OF	
57		OTHER FUTURO (Inter Lock)	
58		C PRIMING PUMP	
59		NO ON/ OF CONTACTS	



**CONNECTION DETAILS:**



Caution: No Operator serviceable Parts inside, DO NOT OPEN the Enclosure



Read Instruction Manual Before use



**\*LLOP Connection Options**

Short	Open	Input	at
69-70		P. free	12-13
69-70	12	-Ve	13
12-13	70	+Ve	69

External Push buttons (NO-Potential free)

External Lamps - 12V DC (LED type ONLY)