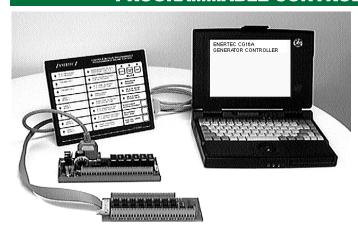


# **CG16A**

## PROGRAMMABLE CONTROLLER FOR GENERATING SET



## **BENEFITS**

- Superior reliability
- Optimal installation time
- Very easy to install
- Configuration flexibility
- Outstanding performance
- ◆ Programmable by RS-232 port
- Very rapid fault visualisation & identification

## **DESCRIPTION**

In our design of the CG16A controller, we have incorporated the important features critical for top performance and this was done by analyzing a large number of existing systems. We have also placed a special emphasis on both flexibility and ease of installation by allowing for a cable connection of the control module to the interface module.

An engine generator controller must ensure emergency supply and protection of the system. Reliability has therefore been a priority in our design and we have included many important features which include, digital optoelectronic inputs, a processor removable processor with a centralized architecture, a separated interface card, transistor outputs rated to 5.0 amperes and protection against low voltage on start-up.

While the product is complete, we also offer some options to suit your specific needs, for example, special analog inputs, the weekly exerciser and an alarm contact module.

## **FLEXIBILITY FEATURES**

- Programmable and removable microcontroller
- Possibility of 7 analog inputs (4 in option)
- Membrane keypad of 6 keys
- Nominal supply for the system is 12 or 24 Vdc.
- 6 of 7 analog inputs are programmable for digital use
- 6 system output relays with contacts of 10 A. @ 28 Vdc
- Programming by standard data terminal equipment
- Complete basic parameters list of the system
- Complete programming parameters for each analog and digital fault
- English or bilingual inscriptions of the silk-screen
- Inputs for remote operation of the system
- Output for engine preheat or for the engine air trap close
- Provision to connect an alarm contact module of 18 circuits for communication system
- Provision to install a terminal block for external faults
- Customer ability to identify each fault on a liquid proof panel
- Possibility of installing the interface module behind the control module (option)

#### **SECURITY FEATURES**

- A liquid proof panel
- Weak battery power detection and low or high battery voltage
- Auxiliary output for breaker tripping or close on valid voltage
- Protection fuse for regulator and for D.C. logical circuit with replacement indicators
- Spare fuse on site
- Weekly Exerciser with reserve (option)

#### **RESPONSIVENESS FEATURES**

- 6 System state indicators and 16 fault indicators (possibility of 24 fault indications)
- Fault ring back
- Output for alarm contact module
- Possibility of fault detection by inverse time analysis

#### **ECONOMIC FEATURES**

- Very complete basic system
- Fast module installation
- The interconnection cable between the control module and the interface module decreases the time of system connection
- Contacts of 6 output relays are directly connected to 12 AWG wire terminals for customer connection
- Terminal block of the control module allows for the connection of elements installed on the panel door
- Terminal block of the interface module (normally installed inside the cabinet) allows the direct connection of elements coming from the exterior and the interior of the cabinet
- Very competitively priced

#### **POSSIBLE FAULTS**

LAMP	DIGITAL FAULT		
1	Overcrank *		
1	Loss of signal *		
2	Low oil pressure		
3	High coolant temperature		
5	Low coolant temperature		
6	High alternator voltage		
7	Low battery voltage		
8	Emergency stop		
9	Low frequency		
10	High alternator temperature		
11	Low fuel level		
12	Spare		
13	Spare		
14	Spare		
15	Spare		
16	Spare		

LAMP	ANALOG FAULTS		
2	Low oil pressure (alarm)		
2	Low oil pressure (shutdown)		
3	High coolant temperature (alarm)		
3	High coolant temperature (shutdown)		
4	Overspeed		
5	Low coolant temperature		
6	Low alternator voltage		
6	High alternator voltage		
7	Very Low battery voltage		
7	Low battery voltage		
7	High battery voltage		
9	Low frequency		
9	High frequency		
10	(not used with standard applications)		
10	High alternator temperature (thermistor)		
11	Low limit of 4-20 mA Input		
11	High limit of 4-20 mA Input		

<sup>\*</sup> THIS FAULT CANNOT BE USE FOR ANY OTHER PURPOSES.

#### **SYSTEM PARAMETERS**

- Use of start/shutdown buttons in manual mode
- Use of shutdown button in automatic mode
- Input polarity of the start signal (N.O. or N.C.)
- Number of start-up attempts
- Frequency limit for detection of the running engine
- Output used for preheat or to activate the engine air trap
- Starting delay, cool down delay and by-pass delay
- Delay before detection of frequency signal loss
- Starter cranking and resting time
- Exercise time delay and real time adjustment (option)

#### PARAMETERS FOR EACH FAULT

- Active fault
- Input polarity
- Bypass delay activated
- Fault latch
- Blinking lamp (fast or slow)
- Audible alarm activated
- Engine stop
- System fault
- Auxiliary output relay activated (breaker trip)
- Transient time delay
- The limit (analog)
- Hysteresis of reset (analog)
- Limit of the summation for the inverse time function (analog)

#### **OUTPUT RELAYS**

The interface module comprises six output relays. These relays have two contacts rated at 10 amps @ 28 Vdc:

- Fuel supply (double contact)
- Starter supply (double contact)
- Supply for the engine preheat or the air trap closing
- System in fault (1 "C" form, an + output )
- System stop on fault (1 "C" form , an + output )
- Engine running (2 "C" forms )

### **SPECIFICATIONS**

Supply:	8-32 Vdc (24 Vdc nominal)	Digital outputs:	12 VDC (negative output);	
	7-30 Vdc (12 Vdc nominal)		Max current: 500 mA;	
Consumption:	100 mA (without powered relays)		Max total output: 3 A.	
Battery DC Voltage Input:	7-32 Vdc, impedance 18 KΩ	Operation temperature:	-20 to + 55°C.	
Frequency input:	0.05 – 50 V RMS	Controller size:	8" H x 10" L x 1.5"" P	
Digital inputs:	Opto isolated in short-circuit:	Interface size :	3.45" H x 8" L x 1.5" P	
	3 mA @ 12 Vdc	Facade material:	Lexan	
		Cover material:	Anodized aluminium	

