easYgen-1400 / easYgen-1600 / easYgen-1700 | easYgen-1800

easYgen-1400 easYgen-1600 easYgen-1800

easYgen-1800 Unique Features

- ✓ Large LCD display for enhanced user experience
- ✓ Built-in Ethernet for remote control, browser based visualization, and service tool connectivity
- ✓ SD card slot for life long data log

Automatic Mains Failure Control

Do you package gensets, build switchgears or integrate systems? With several decades of experience in genset control technology, Woodward's easYgen family offers a one-stop-shop solution for all of your genset control needs. easYgen family genset controls cover the full range of generator system applications, ranging from simple functions, such as start/stop of a genset to complex ones, like synchronizing and power management of large fleet of gensets.

DESCRIPTION

The Woodward easYgen-1000 series is designed for a single-generator set used in critical stand-by or prime power applications with automatic changeover capability. The controllers include purpose-built algorithms and logic to start, stop, control, and protect the genset, open/close circuit breakers and mains supply monitoring with automatic changeover. Equipped with state-of-the-art communication interfaces, Woodward's easYgen-1000 Series of AMF genset controllers provides exceptional versatility and value for OEM genset packagers.

The easYgen-1000 Series is available in four versions:

- **easYgen-1800,** advanced AMF controller comes with a large liquid crystal display (LCD), I/O expansion capability, Ethernet and SD card connectivity
- **easYgen-1700,** based on easYgen-1800 platform, easYgen-1700 offers all the capabilities except Ethernet and SD card connectivity and a 240x128 pixels Monochrome LCD in same size.
- **easYgen-1600,** compact AMF controller offers a state of the art LCD, adequate on-board I/Os and common industrial connectivity
- **easYgen-1400,** small AMF controller contains a big liquid crystal display (LCD), configurable I/Os and electronic engine support.

ToolKit-SC is a single service tool for configuring easYgen-100 and –1000 series controllers. The module's password-protected integral front panel lets you adjust various parameters on-site.

FEATURES

- Three-phase true RMS power sensing
- Operation modes: AUTO, STOP, and MANUAL modes accessible through front panel, discrete inputs or via interfaces
- Remote control via multiple interfaces and discrete inputs
- Direct support of several ECUs, such as Bosch, Cummins, John Deere, MTU, Perkins, Scania, Volvo, Woodward
- Dedicated relay outputs for cranking and fuel solenoid
- Event and data logging capabilities with real time clock
- Maintenance scheduler with multipurpose flexible timers
- Operating hours, start, maintenance counters and monitoring
- Three switchable parameter sets of AC system winding, Rated Voltage, Rated Frequency, Rated Current, Rated Power, Rated Speed
- Can be configured from computer via USB or from front panel with password protection
- Manual breaker operation with tactile buttons on front panel
- Custom boot-up logo with adjustable screen display time
- Multilingual customizable user interface

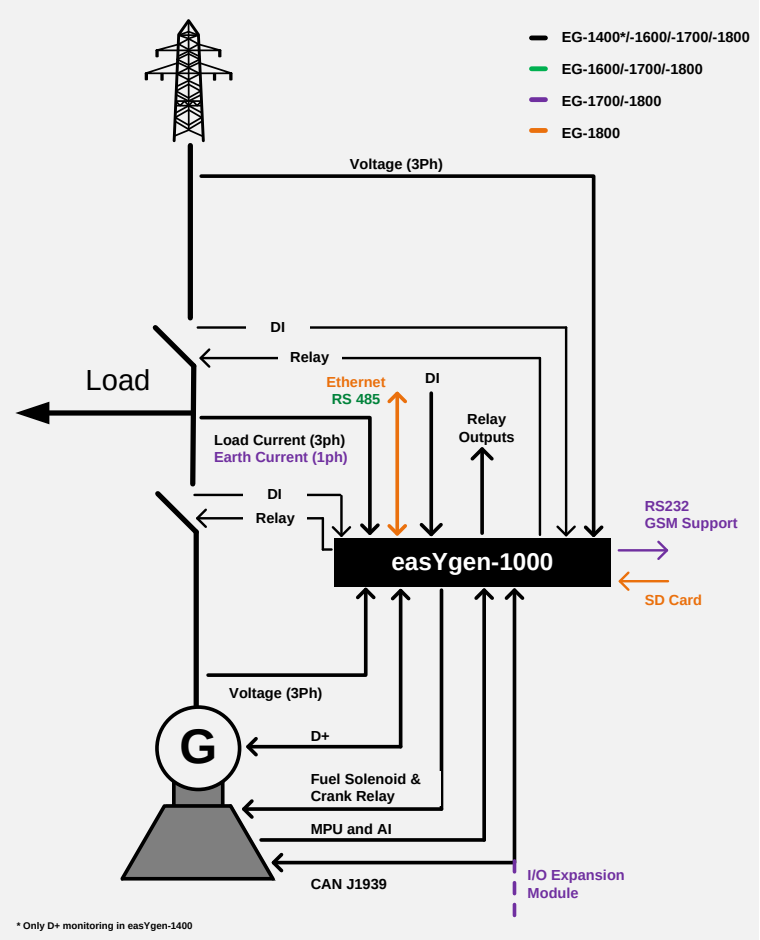
- **Standard break-before-make application in**
  - **Stand-by operation**
  - **AMF (Automatic Mains Failure) operation**
  - **ATS (Automatic Transfer Switch) operation**
  - **Rental power operation**
  - **Peak shaving operation**
- **Easy to set up and commission**
- **Best in class large liquid crystal display**
- **Comprehensive engine, generator and utility protection**
- **Engine ECU interface to electronic engines**
- **Programmable I/Os**
- **Six communication ports: Ethernet TCP/IP, CAN J1939, RS-485, RS232, USB, SD card slot**
- **Dedicated relays for engine and breaker interface**
- **Switchable parameter sets for mobile genset applications**
- **Event log and event-triggered data log**

SPECIFICATIONS

Power Supply	
Operating Voltage (Reverse polarity protected)	8.0 V_{DC} to 35.0 V_{DC}, Continuous Power Supply.
Maximum supply voltage	Short Time 80 V (5-10 s); Long T. 50 V
Minimum supply voltage	6.5 V
Maximum operating current (easYgen-1800)	(All relays closed, LCD bright) 450 mA (12 V); 220 mA (24 V)
Maximum standby current (easYgen-1800)	(All relays closed, LCD dimmed) 420 mA (12 V); 200 mA (24 V)
Power Consumption	<4 W (standby ≤ 2 W)
Alternator Input Range 3-Phase 4-Wire 3-Phase 3-Wire Single-Phase 2-Wire 2-Phase 3-Wire	50 Hz/60 Hz AC30V - AC300V (ph-ph) (according UL6200) AC15V - AC360V (ph-N) AC30V - AC620V (ph-ph) AC15V - AC360V (ph-N) AC15V - AC360V (ph-N)
AC-Measurement Voltage Accuracy (400/480 V % rated)	Phase-phase: 100…624 V : 1%; 50…100 V : 1.5 % Phase-phase: 100 .. 300 V : 1%; 50 .. 100 V : 1.5 % (according to UL6200) Phase-neutral: 100…360 V : 1%; 50…100 V : 1.5 %
Minimum frequency	Generator: 10 Hz; Mains: 27 Hz
Maximum frequency	Generator: 99.5 Hz; Mains: 99.5 Hz
Frequency resolution	0.1 Hz (10…99 Hz)
Frequency accuracy	±0.1 Hz

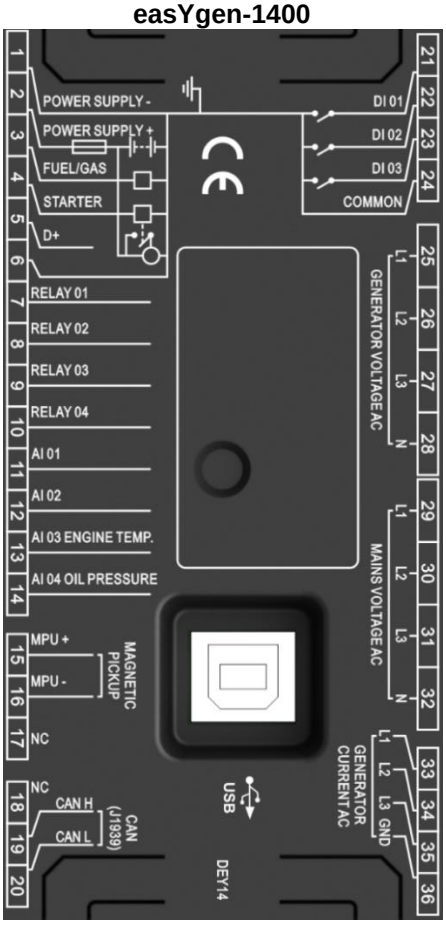
Nominal CT secondary rating	5 A
Overload Measurement	Max.: 10 A
Current Accuracy	1 %
Excitation current D+ (easYgen-1600, 1700 and 1800)	110 mA (12 V); 230 mA (24 V)
Start Relay and Fuel Relay Outputs	Rated 10Adc, 24Vdc running stand-alone. Rated 5Adc, 24Vdc when running in parallel with the FUEL/GAS relay. (easYgen-1600/1700/1800 only) Rated 5Adc, 24Vdc when running in parallel with the FUEL/GAS relay. (easYgen-1400) 2Adc at 24Vdc (acc. to UL 6200)
Housing	
Case Dimensions	easYgen-1700/1800: 237 x 172 x 45 mm easYgen-1600: 209 x 166 x 45 mm easYgen-1400: 135 x 110 x 44 mm
Panel Cutout	easYgen-1700/1800: 214 x 160 mm easYgen-1600: 186 x 141 mm easYgen-1400: 114 x 88 mm
Operating Conditions	Temperature: (-25 to +70) °C; Humidity: max. 93%, noncondensing
Storage Condition	Temperature: (-25 to +70) °C Humidity: max. 93%, noncondensing
Protection Level	IP65 in the front, mounted with kit IP20 on rear side
Net Weight	easYgen-1400: 0.3 kg easYgen-1600: 0.56 kg easYgen-1700/-1800: 0.85 kg

APPLICATION

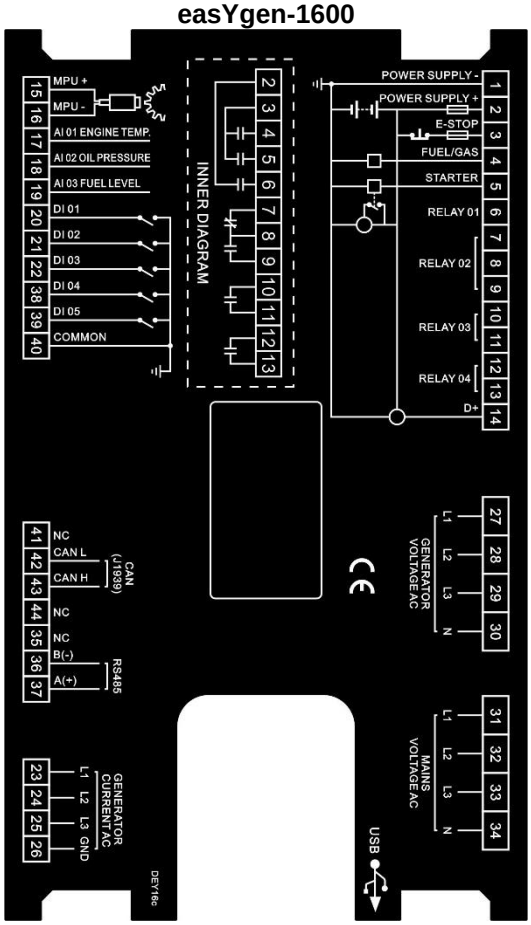


TERMINAL DIAGRAM

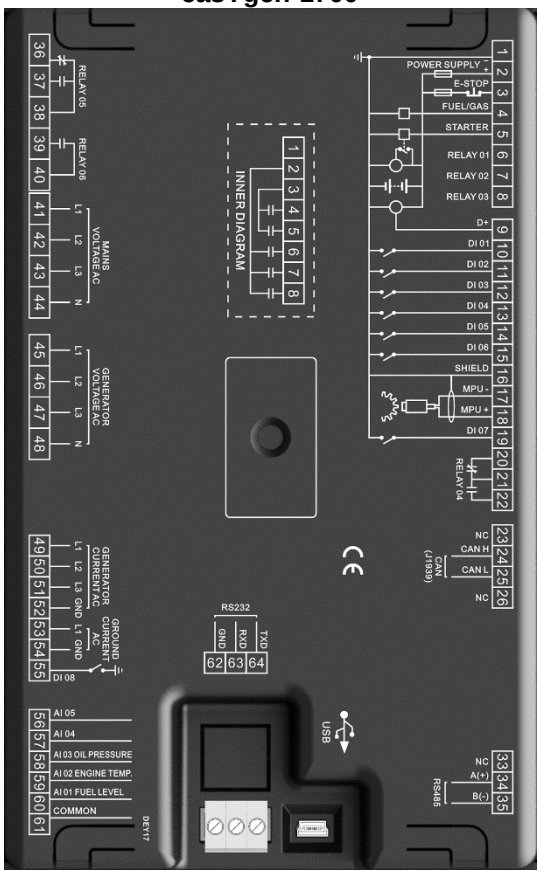
easYgen-1400



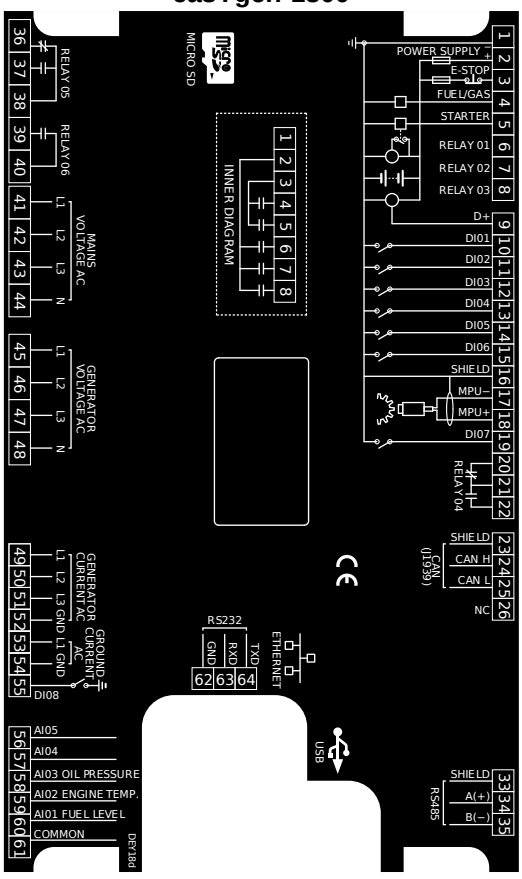
easYgen-1600



easYgen-1700



easYgen-1800



Released

FEATURES OVERVIEW

EASYGEN 1000		easYgen-1000 Series			
	Model	easYgen-1400	easYgen-1600	easYgen-1700	easYgen-1800
Measuring					
Generator voltage (3-phase/4-wire)		✓			
Load current (3x true r.m.s.)					
Mains voltage (3-phase/4-wire)					
Earth current (1x true r.m.s.)		—	—	✓	✓
Control					
Mains supply monitoring and automatic changeover		✓			
GCB and MCB control					
Start/stop sequence for diesel and gas engines		Diesel	Diesel	Diesel/Gas	Diesel/Gas
Isolated single unit operation		✓			
AMF (Automatic Mains Failure operation)					
Stand-by operation					
Open transition (break-before-make)					
ATS (Automatic Transfer Switching)					
Protection					
Generator	Voltage / # of level	✓ / 1		✓ / 2	
	Frequency / # of level				
	Voltage asymmetry	—		✓	
	Rotation field	—		✓	
	Current	✓	✓	✓	✓
	Overload	✓	✓	✓	✓
	Reverse Power	—	—	✓	✓
	Earth fault (measured)	—	—	✓	✓
Mains	Voltage	✓	✓	✓	✓
	Frequency	—	—	✓	✓
	Voltage asymmetry	—	—	✓	✓
	Rotation field	—	—	✓	✓
Engine	Over speed / # of level	✓ / 1		✓ / 2	
	Under speed / # of level				
	Speed signal	✓	✓	✓	✓
	Crank disconnect	✓	✓	✓	✓
Battery voltage		✓	✓	✓	✓
HMI, Counters, and Event Log					
Integral display with tactile buttons		Monochrome LCD (132 x 64)	Monochrome LCD (132 x 64)	Monochrome LCD (240 x 128)	TFT LCD (480 x 272)
Customizable power-up text and image		✓	✓	✓	✓
Front panel configuration with PIN protection		✓	✓	✓	✓
Flush mounting		✓	✓	✓	✓
Operating hours/start/maintenance counters		✓	✓	✓	✓
Event recorder with real time clock		50	50	99	99 internal; extended data log using SD card
kWh, kvarh		✓/-	✓/-	✓/✓	✓/✓
Switchable parameter sets		—	—	✓	✓
I/Os and Interfaces					
Discrete inputs		3 (+2 switchable as AI/DI)	1x E-Stop, 5x configurable	1x E-Stop, 8x configurable	1x E-Stop, 8x configurable
Relay outputs		6	6	8	8
Analog inputs		4x resistive (2 switchable as AI/DI)	3x resistive	4x resistive, 1x resistive/current/volt	5x resistive
Speed input (MPU)		1	1	1	1
Aux. excitation (D+)		1	1	1	1
Ethernet (TCP/IP)		—	—	—	1
CAN (J1939)		1	1	1	1
External DI/DO via CAN bus		-/-	-/-	16 / 16	16 / 16
USB service port		1	1	1	1
RS485		—	1	1	1
RS232		—	—	1	1
Micro SD card support		—	—	—	1
Listings/Approvals					
CE Marked		✓			
UL / cUL Listing		✓	✓	✓	✓
Part Numbers					
Control with connectors and fastening kit		**8440-2251**	**8440-2253**	**8440-2256**	**8440-2255**
Spare connector kit		**10-009-352**	**10-004-674**	**10-004-675**	**10-004-675**

RELATED PRODUCTS

- Configuration tool **ToolKit-SC** (Product Specification # 37695): P/N 9927-2684
- I/O Expansion Board **IKD1** (Product Specification # 37171): P/N 8440-2116
- Small Engine Control Module **SECM-70** (Product Specification # 36363)

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