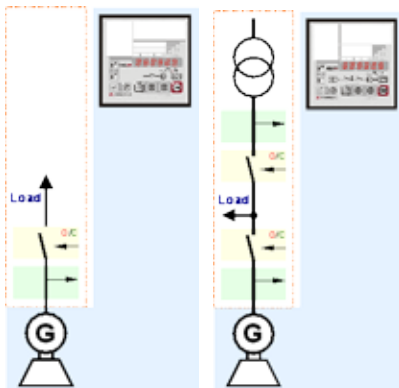


APPLICATIONS

The **easY™gen-320x** offers automatic engine starting, stopping, metering, and generator protection (the **easY™gen-350x** adds AMF and transfer switching). The **easY™gen-300** series is designed for single unit isolated operation applications.

The multi purpose 6 digit 7 segment LED offers the ability to display measured values and alarm messages. The CAN bus operation adds the ability to display J1939 messages from an engine ECU.



320x & 350x
breaker applications

The isolated J1939 CAN bus permits long distance networks for selected ECU manufacturers. Our sales department can provide information regarding the selected ECU manufacturers.

Genset Control for Auto Start and Transfer Switch Operation (Model "320/350")

DESCRIPTION

I/O's

- 3 phase generator and mains true rms voltage, measuring inputs: rated 480 Vac (max. 600 Vac)
- Maximum 2 configurable discrete inputs
- Maximum 2 programmable relays
- D+ input (charge alternator input/output)

Protection (ANSI #)

Generator / Engine: Battery voltage, overspeed (12), over-/undervoltage (59/27), over-/underfrequency (810/U), charge alternator failure

Features

- Start/stop sequence for Diesel engines
- Pre-glow control
- Operating hours, service hours, and start counters
- Configurable trip levels/delays/alarm classes
- 6digit 7segment LED for
 - display of measuring values (V, f, speed)
 - display of counters (see above)
 - display of alarms
 - display of ECU messages
- PC and/or front panel configurable (selection of parameters for front panel configuration)
- Password protected front panel configuration
- 15 entry event logger
- Customized display using paper-strips

Differentiation

- Model "320x": GCB (generator circuit breaker) operation only
- Model "350x": GCB and MCB (mains circuit breaker) operation
- Generator voltage measurement
 - 3phase-4wire, 3phase-3wire, 1phase-3wire, and 1phase-2wire
- Mains voltage measurement
 - Model "350X": 3phase-4wire, 3phase-3wire, 1phase-3wire, and 1phase-2wire
- Visualization of J1939 messages
- MPU input (magnetic/switching)

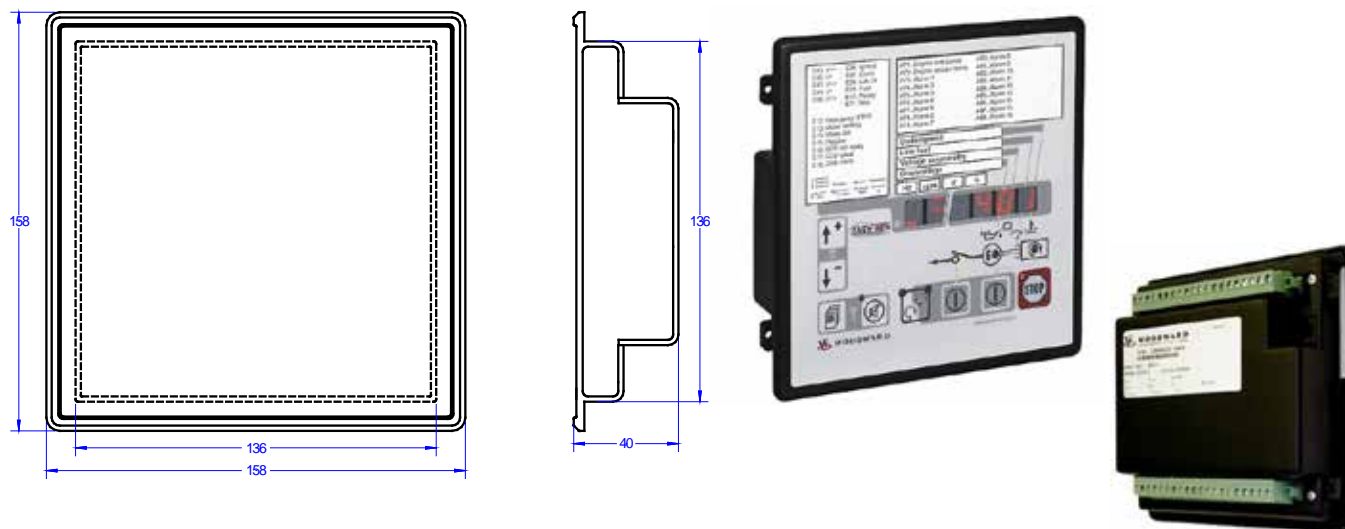
- AMF/loss of mains auto start/stop
- Complete engine and generator protection in one unit
- True RMS sensing of voltage
- Counters for operating hours, service hours, and starts
- Freely configurable discrete inputs
- Freely programmable relay outputs
- PC and/or front panel configurable
- Password protected front panel configuration
- Event logger
- Customized display using paper-strips
- 6.5 to 32.0 Vdc power supply
- Front panel-mounting
- Display of J1939 data
- Visualization of J1939 DM1 / DM2 SPN-FMI error messages
- D+ charge alternator input/output
- CE marked
- Shock and vibration test approved
- UL/cUL listed

SPECIFICATIONS

Power supply	12/24 Vdc (6.5 to 32.0 Vdc)	
Intrinsic consumption	max. 10 W	
Degree of pollution	2	
Ambient temperature (operation)	-20 to 70 °C / -4 to 158 °F	
Ambient temperature (storage)	-20 to 85 °C / -4 to 185 °F	
Ambient humidity	95 %, non-condensing	
Voltage	(Λ/D)	
480 Vac	Rated (V_{rated})	277/480 Vac
	Maximum value (V_{max})	346/600 Vac
	Rated voltage phase-ground	300 Vac
	Rated surge voltage	4.0 kV
Linear measuring range	1.3 x V_{rated}	
Measuring frequency	40 (mains) or 15 (generator) to 85 Hz	
Accuracy	Class 1	
Input resistance	2.0 MW	
Max. power consumption per path	< 0.15 W	
Speed input	capacitive isolated	
Input impedance	min. approx. 17 kW	
Input voltage	875 mV eff.	
D+ input/output		
Max. exciter current	12 Vdc (terminal 4)	0.11 A
	24 Vdc (terminal 3)	0.11 A

Discrete inputs	isolated	
Input range	12/24 Vdc (6.5 to 32.0 Vdc)	
Input resistance	approx. 6.7 kW	
Relay outputs	isolated	
Contact material	AgCdO	
Load (GP)	2.00 Aac@250 Vac	
	2.00 Adc@24 Vdc / 0.36 Adc@125 Vdc / 0.18 Adc@250 Vdc	
Pilot duty (PD)		
	1.00 Adc@24 Vdc / 0.22 Adc@125 Vdc / 0.10 Adc@250 Vdc	
Housing	Flush-mount	
Dimensions	Type Woodward 158×158×40 mm	
Front cutout	138[+1.0]×138[+1.0] mm	
Connection	screw/plug terminals 2.5 mm ²	
Tightening torque	0.5 Nm	
Housing	insulating surface	
Protection system	with correct installation	
	Front	IP54 pending
Weight	approx. 450 g	
Disturbance test (CE)	tested according to applicable EN guidelines	
Sinusoidal Vibration	4G, 5 to 100 Hz	
Endurance Vibration	4G, 30 Hz, 1.5 h	
Random Vibration	1.04Grms, 10 to 500 Hz, 2 h	
Shock	40G peak, 11 ms	
Listings	UL/cUL	

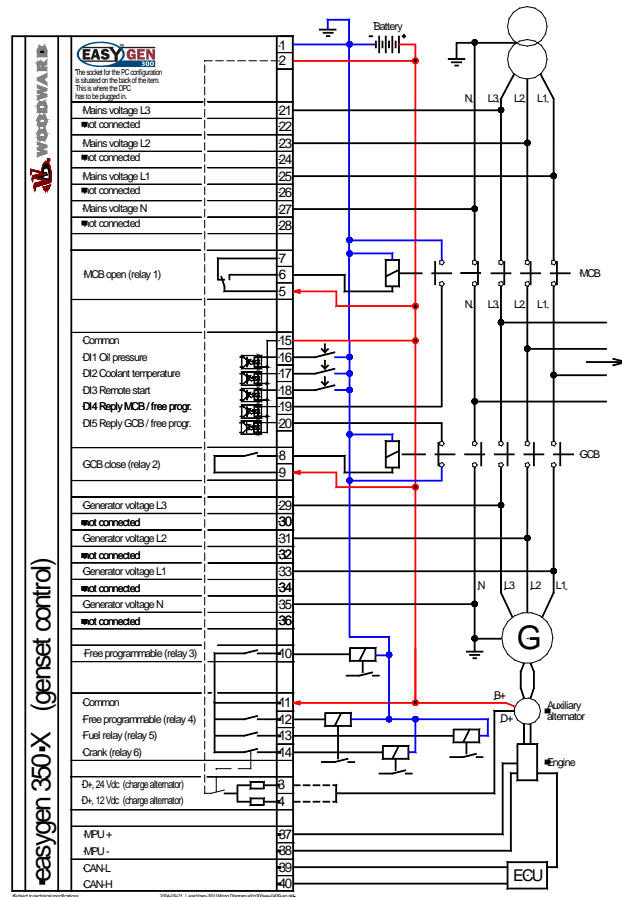
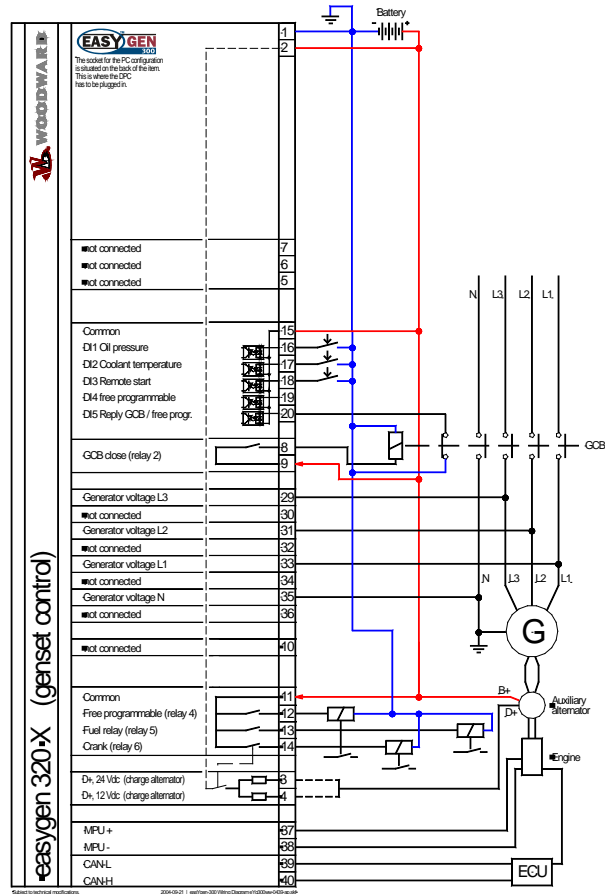
DIMENSIONS



PART NUMBERS

Model	Part Number (P/N)	Description
Model "320/X"	P/N 8440-1800	EASYGEN-320-50B/X
Model "350/X"	P/N 8440-1801	EASYGEN-350-50B/X

WIRING DIAGRAMS



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For more information contact:



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FEATURES OVERVIEW

		easY™gen-300	
		320X	350X
Measuring			
Generator voltage	rated 277/480 Vac	configurable#1	configurable#1
- true rms	max. 346/600 Vac		
Mains voltage	rated 277/480 Vac	configurable#1	configurable#1
- true rms	max. 346/600 Vac		
Control			
Push-buttons to operate the unit		ü	ü
Isolated single-unit operation		ü	ü
AMF (auto mains failure operation)			ü
Stand-by operation		ü	ü
Open transition (break-before-make)			ü
ATS (automatic transfer switching)			ü
Accessories			
6digit 7segment LED (display of values and alarms)		ü	ü
Global multi-lingual use with customized paper-strip		ü	ü
Start/stop logic for Diesel engines		ü	ü
Operating hours/service hours/start counter		ü	ü
15 entry event logger		ü	ü
Configuration via front panel (password protected)		ü	ü
Configuration via PC #2		ü	ü
Protection			
Engine: over-/underspeed		ü	ü
Generator: voltage/frequency		ü	ü
J1939 DM1 red / amber lamp		ü	ü
I/Os			
MPU input (magnetic/switching; Pickup)		ü	ü
D+ (charge alternator input/output)		ü	ü
Discrete alarm inputs (fixed)	2		2
Discrete remote start input (fixed)	1		1
Discrete alarm inputs (configurable) #3	2		2
Relay outputs (fixed)	3		4
Relay outputs (configurable)	1		2
CAN bus communication #4	ü		ü
Listings/Approvals			
CE marked		ü	ü
UL/cUL listed		ü	ü
Shock and vibration test approvals		ü	ü
Part Numbers P/N			
		8440-1800	8440-1801

#1 Configurable: 1p-2w, 1p-3w, 3p-3w, 3p-4w

#2 Configuration software 'Toolkit' available free at Woodward.com, USB connection requires Woodward DPC cable P/N 5417-1251 (or 'LeoPC'; RS232 connection with DPC cable P/N 5417-557)

#3 Only available if breaker replies are not used

#4 fixed CAN J1939 (selected ECU manufacturers; request information)

Example for customizable paper strips:

X = Only available in X-Versions	350 = Only available in EasyGen 350/350X	0/1 = Off/On	Alarm Messages:
01 Horn reset time [s]	52 Gen. under freq. [%]	72 Display level	10A Generator overfrequency
10 Rated frequency [Hz]	53 Gen. under freq. [s]	80 Mains settling time [s] (350)	11A Generator underfrequency
11 Gen. rated volt [V]	54 Gen. over volt [%]	81 Mains over volt. [%] (350)	12A Generator overvoltage
12 Mains rated volt [V](350)	55 Gen. over volt [s]	82 Mains under volt [%] (350)	13A Generator undervoltage
20 Fuel relay [0/1]	56 Gen. under volt [%]	83 Mains volt. hysteresis [%] (350)	14A Mains rotation field 350
21 Preglow time [s]	57 Gen. under volt [s]	84 Mains over frequency [%] (350)	20A Engine overspeed (X)
30 Pickup [0/1] (X)	58 Eng. ovrsprd. monit. [0/1] (X)	85 Mains under frequency [%] (350)	21A Engine underspeed (X)
31 Nom. speed [rpm](X)	59 Eng. over speed [rpm](X)	86 Mains freq. hysteresis [%] (350)	30A Start failure
32 No. pickup teeth (X)	60 Batt. under volt [V]	90 J1939 Device type (X)	31A Unintended stop
40 Cool down time [s]	61 Charge fail monit. [0/1]	91 J1939 Request send address (X)	40A Maintenance hours
50 Gen. over freq. [%]	62 Charge fail level [V]	92 J1939 Receive device No. (X)	50A Battery undervoltage
51 Gen. over freq. [s]	71 Reset maint hours [0/1]	93 J1939 Monitoring [0/1] (X)	51A Charge failure
			60A Discrete input 1
			61A Discrete input 2
			62A Discrete input 4
			63A Discrete input 5
			64A J1939 Error (X)