

DGC-2020HD Gen-Set Controller



The DGC-2020HD Digital Gen-Set Controller is a rugged, reliable, all-in-one gen-set control and load share system. It is designed to be a complete and adaptive controller that is well suited for mains fail, paralleled units, and systems with multiple buses. The DGC-2020HD has all of the necessary features for complete gen-set control, protection, and metering with an extensive, but easy-to-use programmable logic system.



Standard Features

- ▶ Three-phase generator metering
- ▶ Up to two buses with three-phase voltage metering
- ▶ Three dedicated generator CTs with up to four auxiliary CTs
- ▶ Engine metering and gen-set control
- ▶ Standard generator protection includes 27, 59, 81O/U, 32, and 40Q
- ▶ Enhanced generator protection includes 46, 47, 51, 78, and 81ROCOF in addition to the standard generator protection elements
- ▶ Enhanced Plus Differential option includes neutral (87N) and generator phase (87G) differentials with the enhanced sensing option
- ▶ Resistive sender inputs for oil pressure and coolant temperature (analog senders are optional)
- ▶ Dual CAN bus ports: One for SAE J1939 engine ECUs and one for expansion modules
- ▶ Dual Ethernet ports (fiber Ethernet is optional)
- ▶ Load sharing of kW and kvars over Ethernet
- ▶ Soft loading/unloading with zero-power transfer capability
- ▶ Two analog inputs standard and up to four with analog sender option
- ▶ Governor and AVR bias outputs with the ability to be programmed as standard analog outputs
- ▶ Sixteen programmable contact inputs, 12 programmable contact outputs, three pre-programmed outputs (Prestart, Start, Run)
- ▶ Three programmable LEDs for customized annunciation
- ▶ Color touch screen LCD
- ▶ Connects to up to four AEM-2020 Analog Expansion Modules and four CEM-2020 Contact Expansion Modules
- ▶ Peak Shave and Import/Export power control modes maximize system efficiency during peak hours
- ▶ Load anticipation function improves speed recovery during large load application and rejection
- ▶ Various system breaker configurations provide the DGC-2020HD with the flexibility to control systems in a wide range of applications
- ▶ Automatic load shedding functionality ensures that a system will remain up, even if it's at a reduced capacity

Specifications

Power Supply

Nominal:	12 or 24 Vdc
Range:	6 to 32 Vdc
Power Consumption:	
Sleep Mode:	12.7 W
Normal Operation:	18.1 W
Maximum Operation:	25 W
Battery Ride Through:	Starting at 10 Vdc, withstands cranking ride through down to 0 Vdc for 50 ms

Current Sensing

	5 Aac Units	1 Aac Units
Continuous Rating:	0.1 to 7.5 Aac	0.02 to 1.5 Aac
One-Second Rating:	50 Aac	10 Aac
Burden:	1 VA	
Metering Range:	0 to 5,000 Aac	
Metering Accuracy:	±1% of rated	

Voltage Sensing

Range:	12 to 576 Vac, L-L
Frequency:	50/60 Hz
Frequency Range:	10 to 90 Hz
One-Second Rating:	720 Vac
Burden:	1 VA
Metering Range:	0 to 576 Vac
Metering Accuracy:	±1% of rated

Engine Speed Sensing

Magnetic Pickup:	
Voltage Range:	6 to 70 Vpp
Frequency Range:	32 to 10,000 Hz
Generator Voltage Range:	12 to 576 Vac

Resistive Senders

Fuel Level:	0 to 250 Ω
Coolant Temp Sensing:	10 to 2,750 Ω
Oil Pressure Sensing:	0 to 250 Ω

Inputs and Outputs

Analog Input Ratings:	4 to 20 mA, ±10 Vdc
AVR Bias Output:	4 to 20 mA, ±10 Vdc
Governor Bias Output:	4to20mA, ±10 Vdc, or PWM
Load Share Line:	0 to 10 Vdc
Contact Output Ratings:	
Start, Run, Prestart Relays:	30 Adc at 28 Vdc, 3 A pilot duty
Programmable (12):	2 Adc at 28 Vdc, 1.2 A pilot duty

Frequency

Metering Range:	10 to 90 Hz
Metering Accuracy:	±0.25%

Environmental

Operating Temp*:	-40°C to 70°C (-40°F to 158°F)
Storage Temp:	-40°C to 85°C (-40°F to 185°F)
Humidity:	IEC 68-2-78
Salt Spray:	IEC 60068
Ingress Protection:	IEC IP56 for the front panel
Shock:	15 G in three perpendicular planes Tested eight hours in three perpendicular planes, 3 to 25 Hz at 1.6 mm (.063") peak amplitude 25 to 2,000 Hz at 5 G
Vibration:	

* The default screen maintains operation over the entire operating temperature range. The color touch screen maintains operation from -20°C to 70°C (-4°F to 158°F).

Agency/Certifications

UL approved (evaluated to UL6200), ground fault protection circuit compliant with UL1053,
CSA approved, NFPA compliant,
CE compliant (LVD and EMC),
EAC certified, American Bureau of Shipping (ABS) recognized