

The DECS-250 is a complete digital excitation control system. Total control in a compact package provides precise voltage, var and Power Factor regulation, and exceptional system response, plus generator protection. An optional power system stabilizer helps meet stringent grid code compliance requirements. The DECS-250 offers extreme flexibility and total functionality in a cost effective, easy-to-use package.

## FEATURES

- Precise excitation control for synchronous generator or synchronous motor applications.
- True RMS sensing, single-phase or three-phase voltage and current
- Full generator metering capabilities
- Automatic Voltage Regulation / Field Current Regulation / Field Voltage Regulation, Power Factor and var modes of operation
- Integrated Generator Protection (27/59, 810/U, 32R, 40Q), EDM, 59F, 51F, Loss of PMG, Field Short Circuit, and 25 Sync Check
- Load sharing over Ethernet
- Auto tuning feature with two PID stability groups
- Optional integrated power system stabilizer (PSS)
- Configurable Protection
- Overexcitation Limiting (with temperature compensation)
- Underexcitation Limiting
- Stator Current Limiting (with temperature compensation)
- Var Limiting
- Underfrequency Limiting or V/Hz Limiting
- Exciter Diode Monitoring
- Trending, Oscillography, and Sequence of Events Recording
- Sixteen Programmable Contact Inputs
- Twelve Programmable Contact Outputs
- I/O Expansion Module compatibility
  - AEM-2020 Analog Expansion Module
  - CEM-2020 Contact Expansion Module

## BENEFITS

- Reduce your setup time with Basler's intuitive BESTCOMSPlus® software that simplifies complex setup with simple drag-and-drop programmable logic, visual real-time strip chart capabilities, and cutting edge auto PID selection capabilities.
- The revolutionary auto tuning function automatically establishes optimum PID and gain settings, taking the guesswork out of system setup, reducing commissioning time and cost while maximizing overall system performance.
- Powerful 15-amp pulse-width-modulated (PWM) power stage provides a high initial response for exceptional system response to load transients. Flexible PWM power stage makes it easily adaptable to any system - shunt, auxiliary winding, permanent magnet, or DC fed.

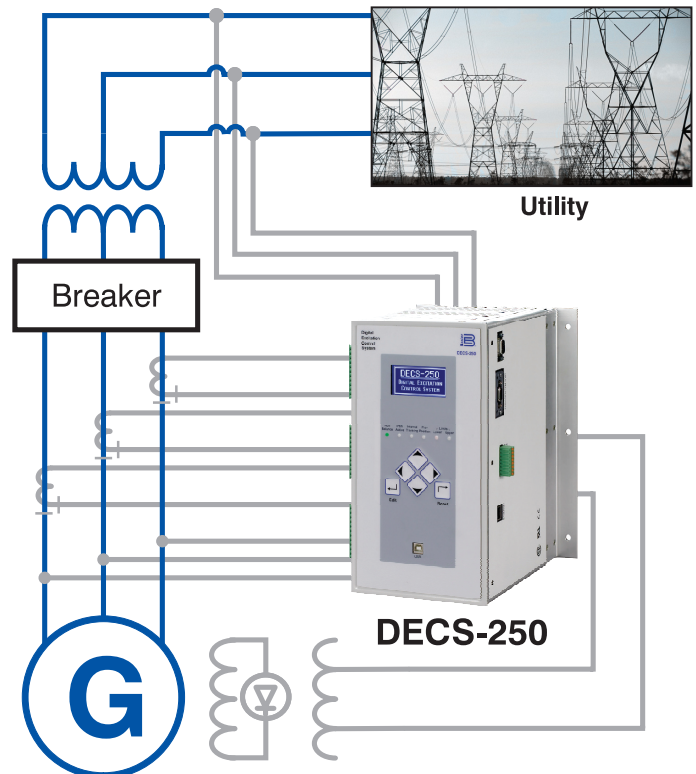


Figure 1 - DECS-250 Connection Diagram for a Typical Application

Visit [WWW.BASLER.COM](http://WWW.BASLER.COM)  
FOR ADDITIONAL INFORMATION.

## Power Supply

Nominal:	Style LXXXXXX:	16 to 60 Vdc
	Style CXXXXXX:	90 to 150 Vdc, 82 to 132 Vac
Burden:		50 VA or 30 W

## AC Operating Power and DC Output Power

32 Vdc:	
Nominal Input Voltage:	60 Vac
Full Load Continuous Voltage:	32 Vdc
Minimum Field Resistance:	2.13 $\Omega$

63 Vdc:	
Nominal Input Voltage:	120 Vac
Full Load Continuous Voltage:	63 Vdc
Minimum Field Resistance:	4.2 $\Omega$

125 Vdc:	
Nominal Input Voltage:	240 Vac
Full Load Continuous Voltage:	125 Vdc
Minimum Field Resistance:	8.33 $\Omega$

All Styles:	
Power Input Configuration:	1-phase and 3-phase
Full Load Continuous Current:	15 Adc
10-Second Forcing:	30 Adc
Power Input Frequency:	50 to 500 Hz

## Generator Current Sensing

Configuration:	1-phase or 3-phase with separate input for cross current compensation
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## SPECIFICATIONS

Current Ranges:	1 Aac or 5 Aac nominal
Frequency:	50/60 Hz Nominal
Burden:	1 Aac sensing: < 5 VA 5 Aac sensing: < 10 VA

## Generator and Bus Voltage Sensing

Configuration:	1-phase or 3-phase
Voltage Ranges:	100/120 Vac $\pm$ 10% 200/240 Vac $\pm$ 10% 400/480 Vac $\pm$ 10% 600 Vac $\pm$ 10%
Frequency:	50/60 Hz Nominal
Burden:	< 1 VA per phase

## Inputs and Outputs

Contact Inputs:	16 programmable inputs (dry contacts)
Auxiliary Input:	Connection available in 4 to 20 mA or $\pm$ 10 Vdc input
Output Contacts:	11 programmable form A contacts and one form C for watchdog function
Rating:	Make, break, and carry 7 A resistive @ 24/48/125 Vdc (120/240 Vac).

## Agency/Certifications

- CSA certified, UL recognized, CE EMC and LVD compliant,
- EAC certified, Bureau Veritas (BV), Det Norske Veritas-
- Germanischer Lloyd (DNV•GL), and American Bureau of
- Shipping (ABS) recognized

## Communication

USB:	USB type B
RS-232:	RS-232, 9 pin, sub D for optional external autotracking
RS-485:	Modbus™ RTU protocol
CAN bus:	One port for ECU communications
Ethernet:	One port for expansion modules
	100baseT (standard), 100baseFX (optional), Modbus TCP protocol for unit-to-unit communication.
Expansion Port:	Optional Profibus protocol

## Environmental

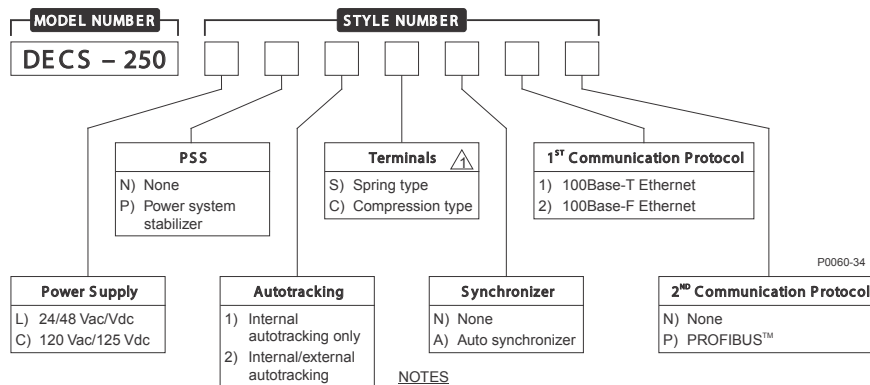
Operating Temp:	-40°C to 70°C (-40°F to 158°F)
Storage Temp:	-40°C to 85°C (-40°F to 185°F)
Salt Fog:	Per MIL-STD 810E method 509.3
Shock:	15 G in three perpendicular planes
Vibration:	5 G from 18 to 2,000 Hz in three perpendicular planes

## Physical

Weight:	14.6 lb (6.62 kg)
Dimensions (WxHxD):	6.26 x 12.00 x 8.62 inches (159.0 x 304.8 x 219.0 mm)

For complete specifications, download the instruction manual at [www.basler.com](http://www.basler.com).

## STYLE CHART



### NOTES

- ⚠ Compression type terminals are available for the current sensing (CT) inputs, operating power input, and power output

Visit the DECS-250 mobile site!

Use a smartphone and scan the QR code to gain quick access to a web-based app featuring the field support information for this product.

[m.basler.com/qrs/DECS-250/](http://m.basler.com/qrs/DECS-250/)



## RELATED PRODUCTS

- [BE1-11g Generator Protection System](#)
  - Combines with the DECS-250 to offer a complete generator control and protection system.
- [DGC-2020 Digital Genset Controller](#)
  - Provides genset and transfer switch control, metering, protection, and programmable logic in a simple, easy to use, reliable, rugged, and cost effective package.

## ACCESSORIES

- [MVC Manual Voltage Controllers](#)
  - Provides backup manual source for excitation in the event of AVR failure.
- [IDP-801 Interactive Display Panel](#)
  - A 7.5" (190.5 mm) Human Machine Interface to view generator system parameters locally or remotely.
- [CEM-2020 Contact Expansion Module](#)
  - Provides additional contact I/O for large or complex logic schemes.
- [AEM-2020 Analog Expansion Module](#)
  - Provides additional metering and control with external peripherals through analog I/O.



12570 Route 143, Highland, Illinois 62249-1074 USA  
Tel +1 618.654.2341 Fax +1 618.654.2351  
email: info@basler.com www.basler.com

No. 59 Heshun Road Loufeng District (N),  
Suzhou Industrial Park, 215122, Suzhou, P.R.China  
Tel +86.512.8227.2888 Fax +86.512.8227.2887  
e-mail: chinainfo@basler.com

111 North Bridge Road #15-06 Peninsula Plaza  
Singapore 179098  
Tel +65 68.44.6445 Fax +65 68.44.8902  
e-mail: singaporeinfo@basler.com