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# BASLER DECS-200 Excitation Systems

Compact Digital Pre-packaged AVR Mounting Plate solutions  
for Brushless Synchronous Machines



 **Basler Electric**

P.A.E. Les Pins  
67 319 Wasselonne  
France  
Tel : +33 (0)3 88 87 10 10  
Fax : +33 (0)3 88 87 08 08  
Mail : [beifrance@basler.com](mailto:beifrance@basler.com)

P.O. Box 269  
Highland Il. 62249  
United States  
Tel : +1 618 654 2341  
Fax : +1 618 654 2351  
[info@basler.com](mailto:info@basler.com)

N° 1300 Zhong Shan BEI Lu  
Dev. Zone, Suzhou, Jiangsu Province  
People Republic of China  
Tel : +86-512-6346-1730  
Fax : +86-512-6346-1760  
[beichina@basler.com](mailto:beichina@basler.com)

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## DECS 200 MP Solutions

**Ease, Convenience and Performance**

**Ease, Convenience and Performance** are key words for new installations and are essential when replacement of original aging excitation systems become necessary. **DECS 200 solutions** meet the requirement of full-featured excitation systems equipped with all the functionality necessary to provide reliable operation of a brushless synchronous machine. The DECS 200 AVR incorporates the latest microcontroller technology and is the heart of Basler Electric pre-packaged excitation systems. Basler engineered quality solutions may be delivered on fully assembled mounting plates, ready for installation in your new or existing cubicle.

### Standard MP Solutions

Available from Stock

### Type MP D-200 SINGLE :

Single DECS 200 AVR mounting plate solution

### Type MP D-200 REDUNDANT:

Dual DECS 200 AVR mounting plate solution  
(Offers Redundancy for critical Applications)

Besides standard off the shelf packages, Basler Electric specialise in tailoring its Excitation System designs to perfectly fit all your existing Synchronous Motor, Steam Turbine, Gas Turbine, Diesel and Hydro Generating systems. These Retrofit solutions include all the functionality of your old system and are assembled on mounting plates specifically sized to drop fit into your cubicle and to bolt onto your existing studs. This keeps your downtime to a minimum and the retrofit becomes a fast straightforward replacement. Operating the new systems is made easy as all systems are delivered complete with thorough Documentation and drawings clearly explaining the operation and functionality of the new system.

***Contact Basler to discuss your ideal excitation retrofit solution.***

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## DECS 200 Digital AVR Characteristics

The DECS-200 offers all the features together with flexibility and programmability expected from one of today's latest state-of-the-art microprocessor based products. The DECS 200 is a total excitation control system in one enclosure and contains all the functionality necessary to limit, control, and protect a motor or generator from operating outside of the machine's capability. This gives the DECS 200 the possibility to be installed in all conceivable applications on virtually any size of machine.



### DECS 200 STANDARD FEATURES

- . Microprocessor-based design
  - . Up to 125Vdc output at 15A dc
  - . 20 standard stability selections
  - . Paralleling compensation
  - . Soft start build-up
  - . Auto tracking between operating modes
  - . Minimum Excitation Limiter
  - . Stator Current Limiter
  - . Exciter Diode Monitoring (EDM)
  - . Oscillography
  - . Eight generator protection features
  - . Front panel backlit LCD display
  - . Side panel mounted RS-485 comm port
  - . True RMS sensing, single or three phase
  - . 0.25% Voltage Regulation Accuracy
  - . User customizable stability selection
  - . U/F compensation or V/Hz Ratio Limiter
  - . FCR Mode (Built in Manual Mode)
  - . Auto tracking between 2 DECS-200 units
  - . On and off-line Maximum Excitation Limiters
  - . Var and Power Factor Controllers
  - . Sequence of Events Recording
  - . Voltage Matching
  - . Programmable output contacts
  - . Front panel mounted RS-232 comm port
  - . Modbus. protocol for RS-485 up to 1km
- . Setup from front panel HMI or by PC with free BESTCOMS user friendly setting software.
- . Meets C37.90.1-1989 for Surge Withstand and Fast Transient
- . UL recognized, CSA certified, CE compliant
- . U.S. Patent Number 5,294,879

#### ADDITIONAL INFORMATION Request:

Instruction Manual  
Ref 9360100990

Product Bulletin  
Ref SZM

#### Shipping Weights and Dimensions:

	Net Weight	Shipping Weight	Shipping Dimensions
<b>MP D-200 Single:</b>	25kg	30Kg	830x580x420mm
<b>MP D-200 Redundant:</b>	39kg	60Kg	830x820x450mm



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## **Standard Mounting Plate** **Type: MP D-200 Single**

This solution offers an auto channel complete with an integrated manual channel

### **Product Features: MP D-200 Single**

- Digital Excitation Control System 125V 15A
- Compact and ready for assembly in your cubicle
- Suitable for 5A as well as 1A CT's
- Full DECS 200 protection features
- Under and Over voltage protection (27/59T)
- Inrush Current Limiter module
- Universal Boost Circuit
- Available from stock



## **Standard Mounting Plate** **Type: MP D-200 Redundant**



The Redundant DECS 200 pre-packaged solution is designed for use on small to medium sized synchronous machines (Motors and Generators), having either brush or brushless type rotating exciters. This solution offers the advantage of having two digital controllers that communicate via parallel ports to maintain the generator output voltage via the field of the exciter.

### **Product Features: MP D-200 Redundant**

- Dual Digital Excitation Control System 125V 15A
- Full Bumpless Transfer and Redundancy
- Compact and ready for assembly in your cubicle
- Suitable for 5A as well as 1A CT's
- Full DECS 200 protection features
- Under and Over voltage protection (27/59T)
- Inrush Current Limiter Module
- Universal Boost Circuit
- Available from stock

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## **Custom Built DECS MP D-200 Solutions**

Basler Electric Taylor Made Retrofit solutions include all the functionality of your old system including the flexibility and programmability expected from one of today's latest state-of-the-art microprocessor based excitation systems. These designs are assembled on mounting plates specifically sized to drop fit into your cubicle and to bolt onto your existing studs.

***Contact Basler to discuss your ideal excitation retrofit solution.***

### **Typical Retrofit Mount Plate Product Features:**

- Dual Digital Excitation Control System 125V 15A
- Compact and ready for assembly in your cubicle
- PLC Integrated for added features and integration
- Full control for Alarms and Faults
- Suitable for 5A as well as 1A CT's
- Full DECS 200 protection features
- Under and Over voltage protection (27/59T)
- Communication through Modbus



**Basler Electric specialise in tailoring its Excitation System designs to perfectly fit all your existing Synchronous Motor, Steam Turbine, Gas Turbine, Diesel and Hydro Generating systems. Contact Basler to discuss your solution today.**

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## Inrush Current Limiting Module

Applications where a PWM-type voltage regulator is powered by a PMG, Auxiliary Winding or a Station Bus, it is highly recommended to install an Inrush Current Reduction Module to minimize the amount of inrush current flow.

The **ICRM** (included on all MP-D200 standard mounting plates) prevents damage to a protected voltage regulator during power-up by limiting inrush current to a safe level. Without inrush protection, the inrush current is limited only by the level of the power source impedance. The lower the impedance, the greater the risk of damaging the regulator from excessive inrush current. Devices with a pulse-width modulated (PWM) power stage are especially vulnerable to high inrush current due to a large amount of capacitance inherent to the design. Voltage regulators powered in shunt as well as those that use SCR-type power stages do not usually require the protection of an ICRM.

## Black Start (Optional Circuit)

This optional circuit is ideal for both Marine as well as Land based applications that must include the possibility to start a generator when no power is available on site. The module has been specifically designed to be integrated on BASLER MP D-200 excitation mounting plates, however it is also available as a separate module measuring: 250x300x200mm (HxWxD).

### ADDITIONAL INFORMATION Request:

Instruction Manual  
Ref 9360100990

Product Bulletin  
Ref SZM

### Shipping Weights and Dimensions:

	<u>Net Weight</u>	<u>Shipping Weight</u>	<u>Shipping Dimensions</u>
<b>MP D-200 Single:</b>	25kg	30Kg	830x580x420mm
<b>MP D-200 Redundant:</b>	39kg	60Kg	830x820x450mm

## Basler Electric:- DECS200 - Partial Reference List

### OEM's

### Turnkey Contractors

### Industrial Applications

- ABB OY, Finland.
- Hitzinger, Austria.
- ASI Robicon, U.K.
- Meidensha, Japan.
- Matimpex, Germany.
- Rafteikening, Iceland.
- Tilsley and Lovatt, U.K.
- I Power Solutions, Australia.
- Powerdist PTY Ltd, Australia.
- Moteurs Leroy Somer, France.
- Maersk Oil and Gas, Denmark.
- Alstom Power Conversion, U.K.
- Siemens Gas Turbines, Sweden.
- Hyundai Heavy Industries, Korea.
- NACC Nippon Automation, Japan.
- Toyo Denki Power Systems, India.
- Imtech Vonk B.V., The Netherlands.
- Institute 704 for Marine Studies, China.
- ABB Automation Technologies, Sweden.
- Industrial and Marine Switchgear Ltd, U.K.
- Edison / Edipower / Enel Green Power, Italy

- Electrical Power Engineering, U.K.
- Maquinas Electricas Indar, Spain.
- Occidental Petroleum, Qatar.
- Alstom Hydro Power, Spain.
- Peebles Machines Ltd, U.K.
- MAN B&W Diesel Ltd, U.K.
- ABB Entrelec, France.
- Alstom Moteurs, France.
- Peter Brotherhood, U.K.
- SEMT Pielstick, France.
- Newage AVK, Germany.
- Tapal Energy, Pakistan.
- Wartsila NSD, Finland.
- Union Fenosa, Spain
- S.P.B.E.C., Russia.
- Petrotech, Belarus.
- Marelli Motori, Italy.
- F.G. Wilson, U.K.
- Cegelec Ltd, UK.
- Twyver Ltd, U.K.
- Iberdrola, Spain
- Andritz, Austria.
- Alconza, Spain.

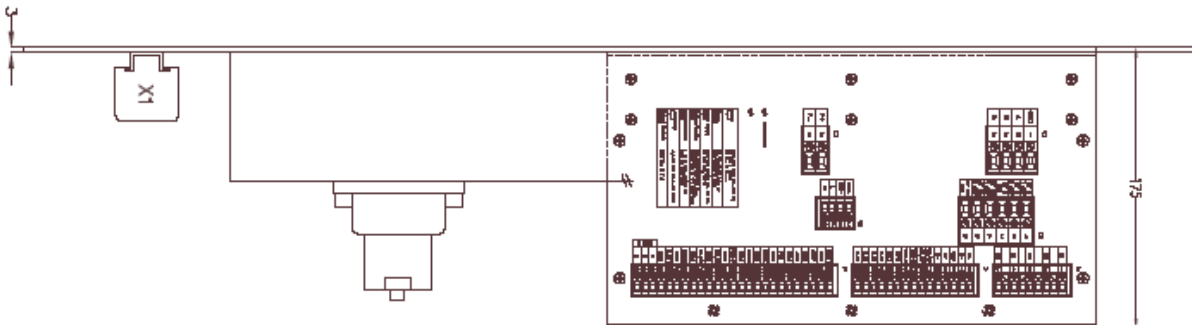
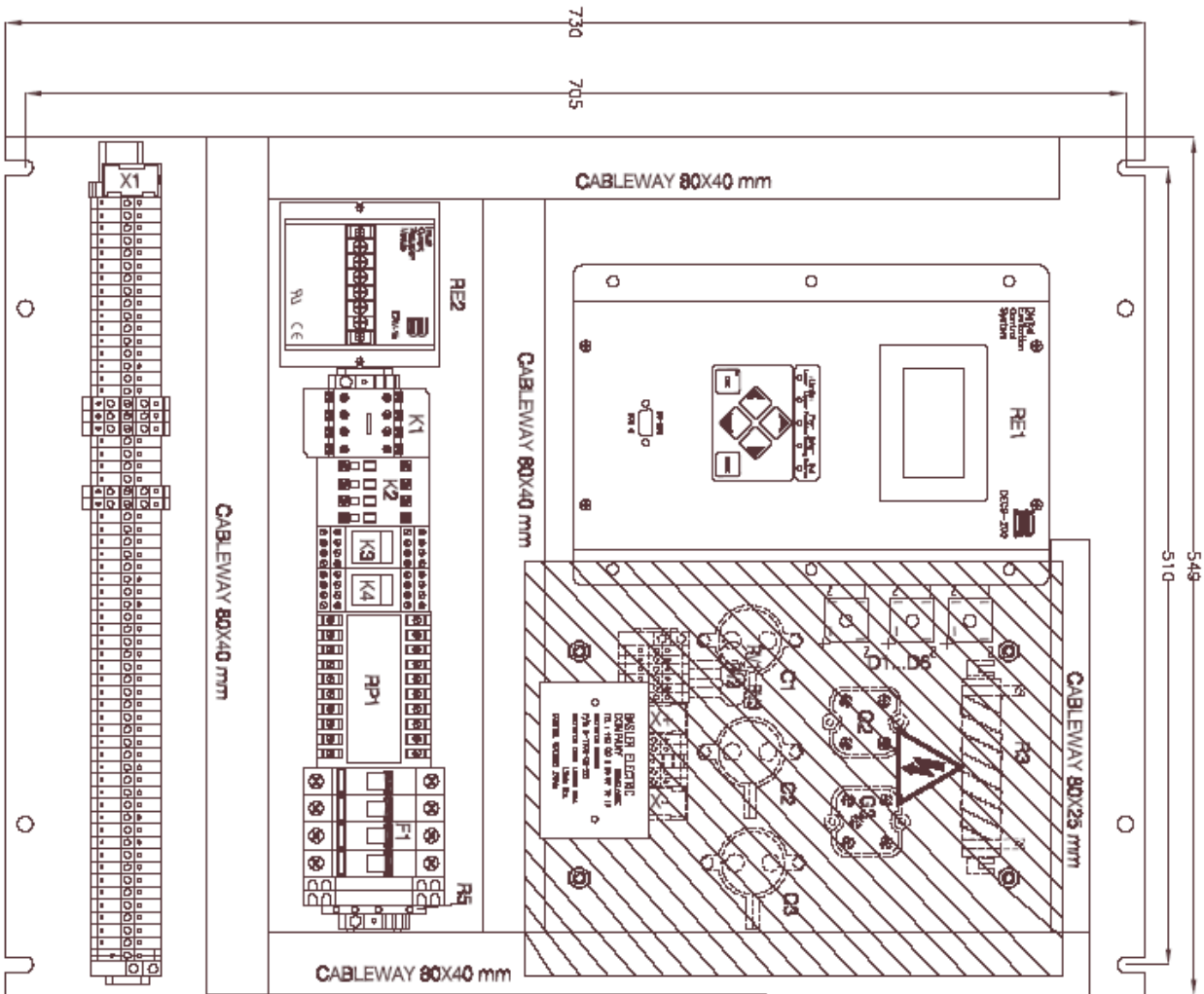
### System Integrators

### Marine Specialists

### Utilities.....

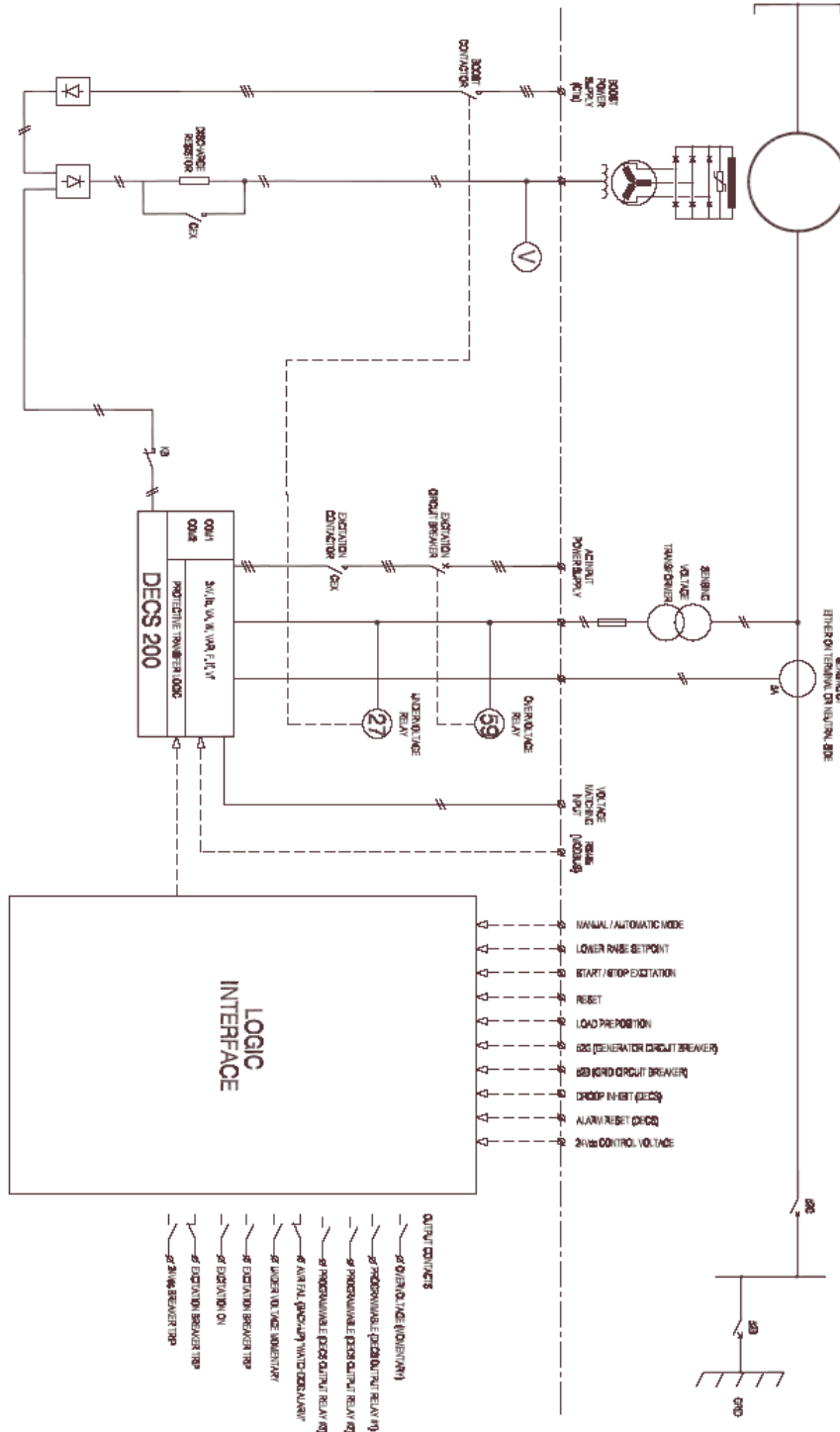


**Mechanical Drawing for Standard Mounting Plate Type: MP D-200 Single**

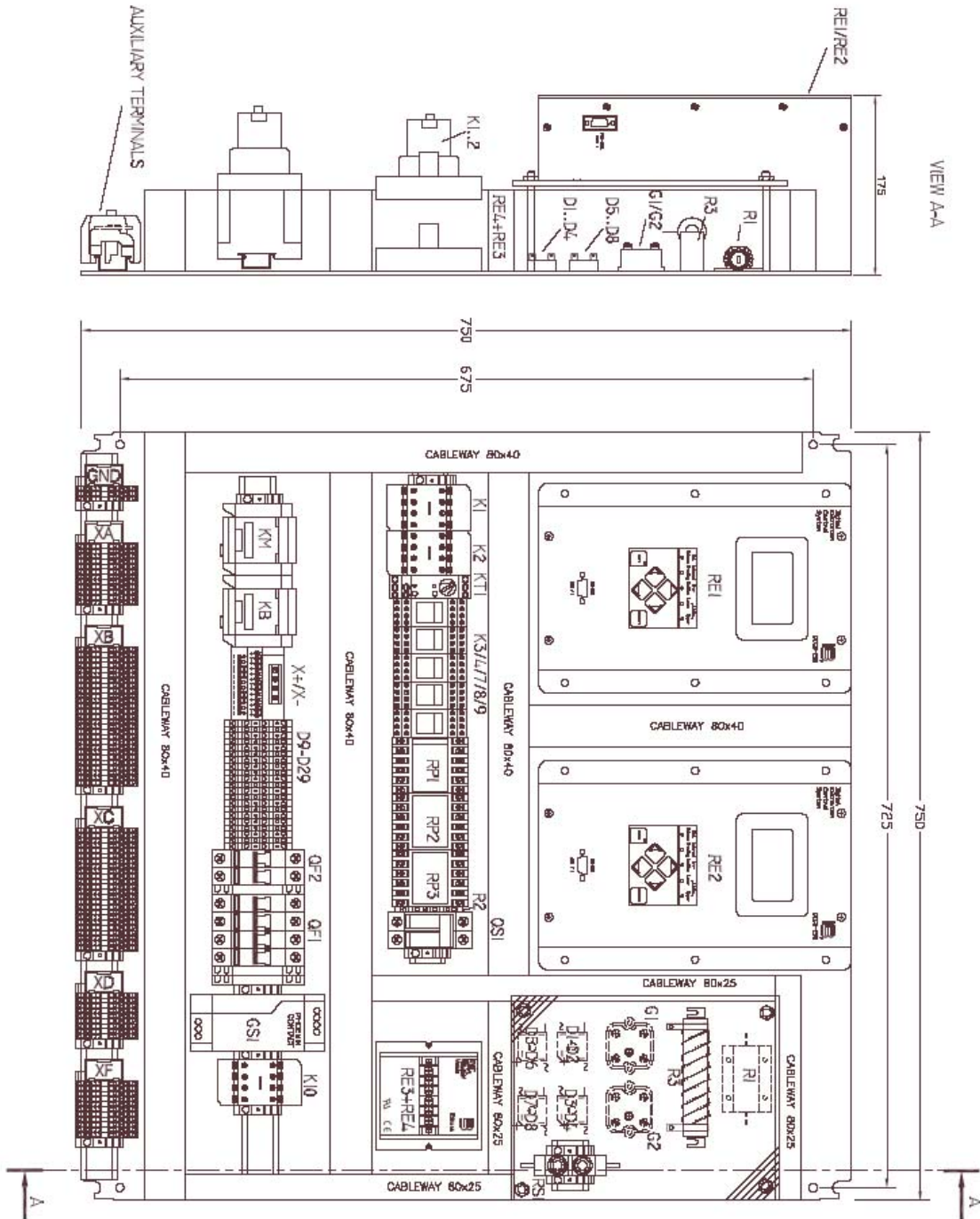




**Single Line Diagram for Standard Mounting Plate Type: MP D-200 Single**



**Mechanical Drawing for Standard Mounting Plate Type: MP D-200 Redundant**





**To place your order for a Basler Electric Excitation System and verify the interface between the mounting plates and your system, simply fill in the following data sheet and forward it to your nearest Basler Electric Representative.**

**Customer Name:** \_\_\_\_\_

**Project name :** \_\_\_\_\_

**1) Generator Output data :**

Power (in kVA) : \_\_\_\_\_ Voltage (in V) : \_\_\_\_\_  
 Frequency (in Hz) : \_\_\_\_\_ Power factor : \_\_\_\_\_

**2) Excitation Field Data :**

Current at no load: \_\_\_\_\_ Voltage at no load: \_\_\_\_\_  
 Current at full load: \_\_\_\_\_ Voltage at full load: \_\_\_\_\_

**3) Forcing condition :**

Typically 1.6 times the excitation voltage at full load : \_\_\_\_\_

**4a) For PMG types of Input Power :**

No Load Voltage (Max V) : \_\_\_\_\_ Voltage at ceiling (Min V) : \_\_\_\_\_  
 Maximum VA : \_\_\_\_\_ Rated VA nominal : \_\_\_\_\_  
 Frequency : \_\_\_\_\_ Single or 3 Phase : \_\_\_\_\_

**4b) For POWER TRANSFORMER (VOLTAGE) types of Input Power :**

Voltage on Prim side : \_\_\_\_\_ V on the Sec side : \_\_\_\_\_  
 Frequency : \_\_\_\_\_ Single or 3 Phase : \_\_\_\_\_

**4c) For EXTERNAL SOURCE types of Input Power :**

Voltage (AC or DC): \_\_\_\_\_ Rated Power : \_\_\_\_\_  
 Frequency : \_\_\_\_\_ Single or 3 Phase : \_\_\_\_\_

**5) CT & PT ratio for the sensing circuit :**

<b>PT RATIO</b>	<b>CT RATIO</b>
a) Primary voltage : _____	a) Prim Current : _____
b) Secondary voltage : _____	b) Sec Current (1 or 5A) : _____
c) App Power (25VA min) : _____	c) Burden (in VA) : _____
d) Single or 3 Phase : _____	d) CT Ph Connection: _____

**7) Control voltage for the contactors, relays, transducers ...**

a) 24Vdc (recommended) : \_\_\_\_\_ b) 110Vdc : \_\_\_\_\_  
 c) 125Vdc : \_\_\_\_\_ d) Other : \_\_\_\_\_

**8) Control voltage for the build-up (if used) :**

a) 24,110 or 125Vdc : \_\_\_\_\_ b) AC source : \_\_\_\_\_  
 c) Other : \_\_\_\_\_

**10) Size of the equipment :** (Max space available for the MP D-200)

Height : \_\_\_\_\_ Width : \_\_\_\_\_ Depth : \_\_\_\_\_

P.A.E. Les Pins  
 67 319 Wasselonne  
 France  
 Tel : +33 (0)3 88 87 10 10  
 Fax : +33 (0)3 88 87 08 08  
 Mail : [beifrance@basler.com](mailto:beifrance@basler.com)

P.O. Box 269  
 Highland Il. 62249  
 United States  
 Tel : +1 618 654 2341  
 Fax : +1 618 654 2351  
[info@basler.com](mailto:info@basler.com)

N° 1300 Zhong Shan BEI Lu  
 Dev. Zone, Suzhou, Jiangsu Province  
 People Republic of China  
 Tel : +86-512-6346-1730  
 Fax : +86-512-6346-1760  
[beichina@basler.com](mailto:beichina@basler.com)

