



## **ALTERNATOR E1C10M I**

*single-phase brushless synchronous alternator with capacitor - 2 poles*

Technical Data Sheet

## E1C10M I

### COMMON DATA

|                      |                     |  |             |
|----------------------|---------------------|--|-------------|
| Rated Power at 50Hz  | kVA                 | 7  |             |
| Rated Power at 60Hz  | kVA                 | 8.5  |             |
| Rated Power Factor   |                     | 1  |             |
| Nominal Temperature  | °C                  | 40   |             |
| Control System       |                     | self excited   |             |
| Execution            |                     | brushless  |             |
| Regulation Type      |                     | capacitor  |             |
| Insulation Class     |                     | H  |             |
| Protection           |                     | IP21   |             |
| Maximum Overspeed    | rpm                 | 4500   |             |
| Overload             |                     | 110% of rated power for one hour in a cycle of 6 hours |             |
| Air Flow Requirement | m <sup>3</sup> /min | 3.6 at 50Hz  | 4.5 at 60Hz |
| R.F.I. Suppression   |                     | Standard EN55011                                       |             |

### REGULATION DATA

|                         |    |                         |  |
|-------------------------|----|-------------------------|--|
| capacitor               |    | Capacitor               |  |
| Capacitor               | µF | 40                      |  |
| Voltage Regulation      |    | ±5%                     |  |
| Sustained Short Circuit |    | > 250% of rated current |  |

### WINDING DATA

|                           |  |                                     |  |
|---------------------------|--|-------------------------------------|--|
| Stator Winding            |  | Single layer with auxiliary winding |  |
| Rotor Winding             |  | with damping cage                   |  |
| Number of Leads of Stator |  | 4                                   |  |
| Stator Winding Resistance |  | 0.515 at 20°C                       |  |
| Rotor Winding Resistance  |  | 5.1 at 20°C                         |  |
| THD at full load          |  | <6%                                 |  |
| THD at no load            |  | <5%                                 |  |

### STANDARD

|            |  |                             |  |
|------------|--|-----------------------------|--|
| References |  | EN60034-1 ISO8528-3 EN55011 |  |
|------------|--|-----------------------------|--|

## E1C10M I

### ELECTRICAL DATA

| Frequency                              |    | 50Hz - 3000rpm |                | 60Hz - 3600rpm |                |
|--|----|----------------|----------------|----------------|----------------|
| Voltage Series Star                    | V  |                | <b>115/230</b> |                | <b>110/220</b> |
| Rated Power in Class H<br>(125°C/40°C) | kW |                | 7              |                | 8.5            |
| Rated Power in Class F<br>(105°C/40°C) | kW |                | 6.6            |                | 8              |

### EFFICIENCY IN CL. H

|     |  |       |  |  |       |
|-----|--|-------|--|--|-------|
| 4/4 |  | 79.0% |  |  | 80.5% |
| 3/4 |  | 80.0% |  |  | 81.0% |

### MECHANICAL DATA

|                                 |           |    |            |
|---------------------------------|-----------|----|------------|
| Bearing non drive end           |           |    | 6204-2Z-C3 |
| Bearing drive end (B3/B14 form) |           |    | 6305-2Z-C3 |
| Weight of generator             | in B2     | kg | \          |
|                                 | in B3/B14 | kg | 33         |
|                                 | in B3/B9  | kg | 32.3       |

# E1C10M I

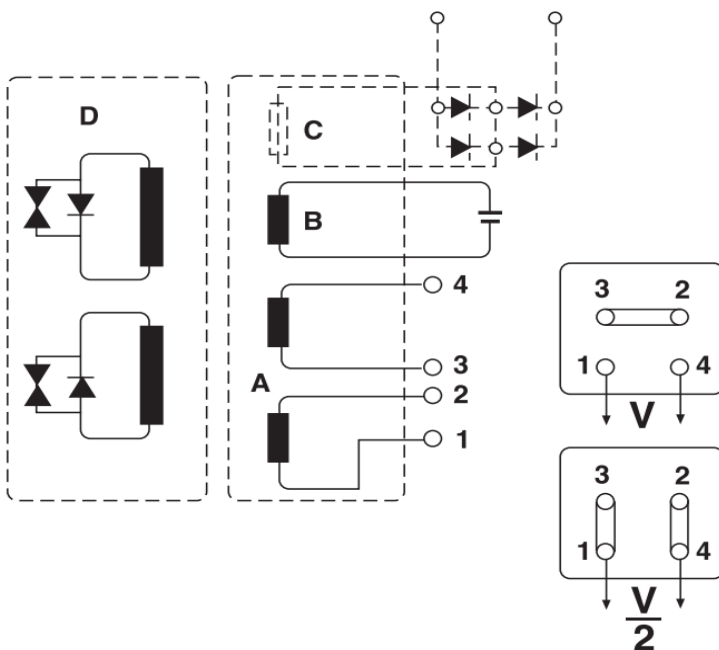
## MOMENT OF INERZIA

|        |                   |       |
|--------|-------------------|-------|
| B3/B9  | kg·m <sup>2</sup> | 0.019 |
| B3/B14 | kg·m <sup>2</sup> | 0.019 |

## POWER VARIATION ACCORDING TO TEMPERATURE AND ALTITUDE

| Altitude      | Ambient temperature |      |      |      |      |
|---------------|---------------------|------|------|------|------|
|               | 25°C                | 40°C | 45°C | 50°C | 55°C |
| < 1000m       | 1.09                | 1    | 0.96 | 0.93 | 0.91 |
| 1000m - 1500m | 1.01                | 0.96 | 0.92 | 0.89 | 0.87 |
| 1500m - 2000m | 0.96                | 0.91 | 0.87 | 0.84 | 0.83 |
| 2000m - 3000m | 0.9                 | 0.85 | 0.81 | 0.78 | 0.76 |

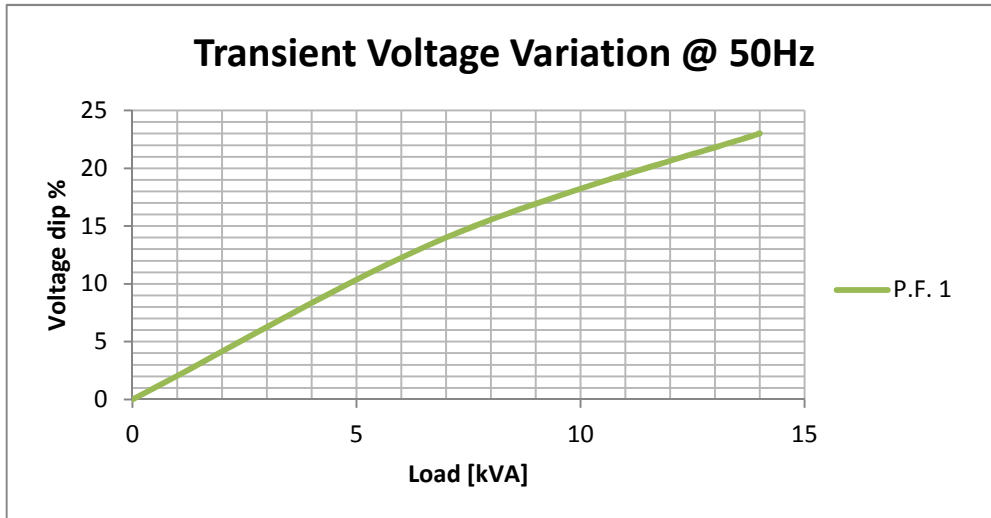
## WIRING DIAGRAM



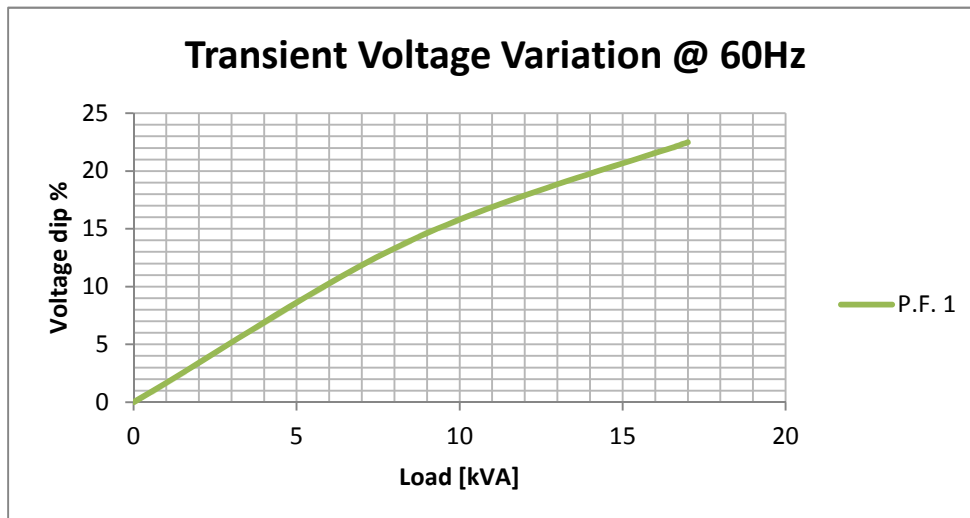
- A Main Winding**
- B Excitation Winding**
- C Battery Charger Circuit**
- D Polar wheel**

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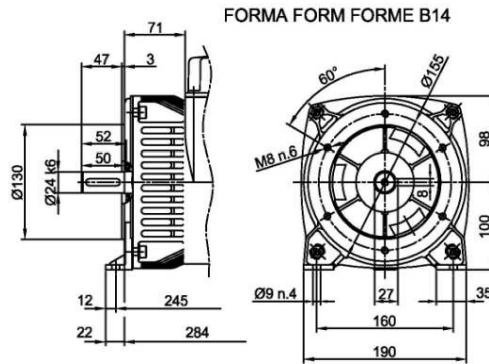
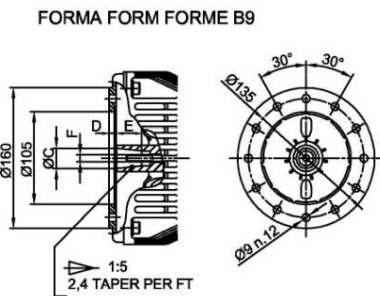
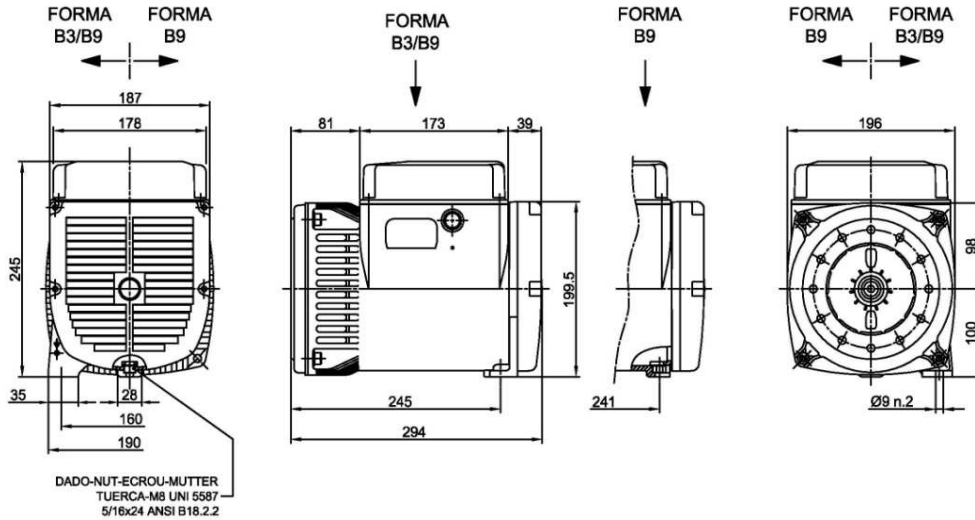
## TRANSIENT VOLTAGE VARIATION 50Hz



## TRANSIENT VOLTAGE VARIATION 60Hz



# E1C10M I



| FORMA FORM FORME FORME | ØC  | D  | E  | F       |
|------------------------|-----|----|----|---------|
| cono Ø23               | Ø23 | 8  | 25 | M8      |
| cono Ø30               | Ø30 | 16 | 30 | M14x1.5 |

