

D-Vo LIGHT

MARELLI MOTORI DIGITAL AVR



MarelliMotori
Powering the future®



The new Digital Voltage Regulator D-Vo is an electronic microprocessor-based device which manages the operating electrical parameters of synchronous generators. The power supply to the exciter is through a PWM power stage.

The D-Vo AVR can be interfaced and programmed using a proprietary PC application supplied by Marelli Motori.

The new D-Vo Light regulator is a standard feature of all marine generators and it is compatible with any Marelli Motori generator model.

FUNCTIONS AND KEY FEATURES

- ✓ **4 Operating modes:**
 - Automatic Voltage Regulation (AVR mode)
 - Power Factor Regulation (PF mode)
 - Reactive Power Regulation (VAR mode)
 - Field Current Regulation (FCR mode)
- ✓ **Stability parameters individually configurable (P.I.D.) or pre-defined standard parameterization**
- ✓ **Soft start with adjustable ramp, in AVR mode**
- ✓ **Parallel function with similar generators operated with Reactive Droop Compensation**
- ✓ **Generator protections:**
 - Field over-voltage
 - Field over-current
 - Generator over-voltage
 - Generator under-voltage
 - Generator over-current
 - Loss of sensing
 - Diode monitoring
- ✓ **Excitation limiters (over- and under-excitation)**
- ✓ **Watchdog**
- ✓ **Under-frequency limiter**
- ✓ **Certifications:**
 - CE
 - DNV / GL type approved

INPUTS

- ✓ 1-ph or 3-ph generator voltage sensing
- ✓ 1-ph or 3-ph generator current sensing
- ✓ 1-ph grid voltage sensing
- ✓ 3 auxiliary analogue inputs for remote setpoint control
- ✓ Input for external potentiometer
- ✓ 9 digital contacts (8 programmable)

OUTPUTS

- ✓ PWM output max. 10A continuous, 20A forcing for 10s
- ✓ 3 configurable output relays for alarm

PRODUCT SPECIFICATION



POWER SUPPLY

| | |
|-----------------|----------------------------------|
| TECHNOLOGY | Digital |
| CONNECTION TYPE | Single phase |
| | Three phase |
| POWER SOURCE | Shunt |
| | Auxiliary winding |
| | PMG |
| | Separate AC source |
| VOLTAGE RANGE | Separate DC source |
| | AC: up to 250Vac (50Hz to 400Hz) |
| | DC: up to 300Vdc |

CONTROL SUPPLY

| | |
|-----------------|-------------------------------------|
| CONNECTION TYPE | Single phase |
| | Three phase |
| POWER SOURCE | Shunt |
| | Auxiliary winding |
| | PMG |
| | Separate AC source |
| VOLTAGE RANGE | Separate DC source |
| | AC: 24Vac to 250Vac (50Hz to 400Hz) |
| | DC: 24Vdc to 300Vdc |

GENERATOR VOLTAGE SENSING

| | |
|-----------------|--|
| CONNECTION TYPE | Single phase |
| | Three phase |
| VOLTAGE RANGE | AC: 100Vac to 480Vac \pm 15%, at 50/60Hz |

GRID VOLTAGE SENSING

| | |
|-----------------|--|
| CONNECTION TYPE | Single phase |
| VOLTAGE RANGE | AC: 100Vac to 480Vac \pm 15%, at 50/60Hz |

GENERATOR CURRENT SENSING

| | |
|-----------------------------|---|
| INPUTS | 3 (6 terminals) for U-V-W phase sensing |
| CURRENT RANGE OF EACH INPUT | 1Aac (50/60Hz) |

REGULATION ACCURACY

| | |
|------------------|--|
| AVR MODE | \pm 0.25% of rated voltage |
| FCR MODE | \pm 2% of rated exciter current |
| PF MODE | \pm 0.005PF (with PF between 0.9 lagging and 0.9 leading) |
| VAR MODE | \pm 2% of rated power |
| VOLTAGE MATCHING | \pm 2% of rated voltage |

ENVIRONMENTAL CONDITIONS

| | |
|-----------------------|---------------------|
| OPERATING TEMPERATURE | -30°C to +70°C |
| STORAGE TEMPERATURE | -40°C to +80°C |
| HUMIDITY | <90% |
| DIMENSIONS | 335 x 190 x 60 (mm) |

EMC

| | |
|---|--|
| TESTED ACCORDING TO THE FOLLOWING STANDARDS | EN 61000-6-4:2007 + A1:2011 |
| | EN IEC 61000-3-2:2019 |
| | EN 61000-3-3:2013 + A1:2019 |
| | EN 61000-6-2:2005 + AC:2005 |
| | CISPR 32:2015 |
| | EN 55032:2015 + /AC:2016 |
| | IEC 61000-4-2:2008 |
| | EN 61000-4-2:2009 |
| | IEC 61000-4-3:2006 + AMD1:2007 + AMD2:2010 |
| | EN 61000-4-3:2006 + /A1:2008 + /A2:2010 |
| IEC 61000-4-4:2012 | |
| EN 61000-4-4:2012 | |
| IEC 61000-4-5:2014 | |
| EN 61000-4-5:2014 | |
| IEC 61000-4-6:2013 | |
| EN 61000-4-6:2014 | |
| IEC 61000-4-8:2009 | |
| EN 61000-4-8:2010 | |
| IEC 61000-4-11:2004 | |
| EN 61000-4-11:2004 | |
| EN 61000-4-13:2002 + /A1:2009 + /A2:2016 | |

USER INTERFACE

- ✓ 1 USB port for connection to PC with Marelli Motori proprietary software or custom software

CONTACTS

Marelli Motori S.r.l.

Via Sabbionara 1
36071 Arzignano (VI) - Italy
(T) +39 0444 479 711
(F) +39 0444 479 888
info@marellimotori.com

Marelli Motori Asia Sdn Bhd

No. 7, Jalan Tajuh Satu 27/29A,
Section 27, 40400 Shah Alam,
Selangor Darul Ehsan
Malaysia
(T) +60 3 5102 9515
malaysia@marellimotori.com