

# VARIPULSE® INTERACTIVE CONTROL MODULE



Adjusts and controls the flow of Series G<sup>TM</sup>A and Series G<sup>TM</sup>M\* pumps. Two versions are available:

- 1 Frequency variation
- 2 Seven operating modes: manual speed, proportional speed in automatic mode, frequency variation in manual or automatic mode, pulse, batch metering, calibration

## Applications

The VARIPULSE® controller uses digital and analogue signals to provide proportional control of the flow rate of **Series G<sup>TM</sup> A and Series G<sup>TM</sup> M** metering pumps. The controller is recommended for use in many applications, including water and wastewater treatment, surface treatment, irrigation, physical and chemical treatment and any applications where automated, proportional pumping or the addition of preselected quantities (batch) is required.

## Principle

Vector voltage control electronics compensate for variations in power supply voltage by generating and adjusting voltage and frequency to control a three-phase motor through a series of starts without compromising performance over the entire operating range. The electronics and position sensor deliver extremely accurate metering.

## Technical characteristics

- Supply voltage: 220 V (-7% to 10%) single-phase mains for 230 V three-phase motor
- Frequency: 50/60 Hz
- Power: 0.09 to 0.25 kW
- Enclosure: IP 55
- Room temperature: -20 to +40 °C
- Local fault indicator and remote alarm via voltage-free contact (1 A-250 V)
- Input impedance: 250 ohms
- Level detection
- Meets EMC Class A requirements as standard (mounted directly on motor or on a wall up to 1.5 m away without shielded cable)
- Construction:
  - Aluminium finned box for reliable cooling by natural convection
  - Resin-moulded electronic components absorb vibrations and keep moisture out
- Version 1 frequency variation options:
  - settings console (RS-232 link);
  - field bus communication (PROFIBUS PD, INTERBUS S, CAN OPEN, DEVICENET)

\* 180 spm version excepted



## Integrated protection systems

Remote fault reporting:

- 1 Frequency variation version with field bus communication option
  - Overvoltage, undervoltage and overcurrent mains protection
  - Temperature protection for electronic components
  - Protection against faulty insulation and short-circuits
  - Locked rotor detection
  - Sensor fault detection
  - Control inputs self-protected against shorts and overloads
- 2 Version with seven operating modes:
  - Low level
  - Electronics
  - Sensor fault

## Advantages

- Multi-language alphanumeric LCD display
- Simple, highly reliable and efficient **multi-purpose** system
- Delivered ready to use with optimised factory settings for each mode
- Guaranteed operation regardless of voltage fluctuations or mains frequency

## 7 operating modes



### Manual speed

- Pump strokes programmable from 1 to 144 spm

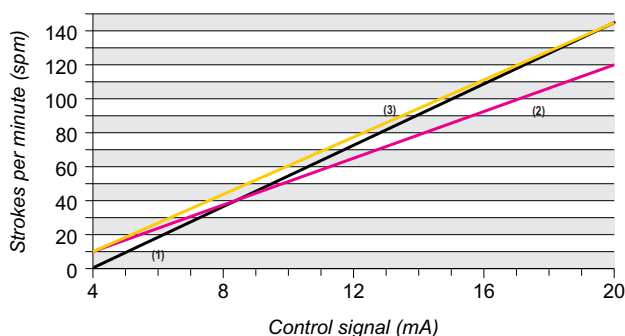


### Proportional speed in automatic mode

Number of pump strokes controlled by a programmable 4-20 mA analogue signal

- 4 mA level programmable for 0 to 10 spm
- 20 mA level programmable for 36 to 144 spm

### Speed controlled by MODE 2 control signal



- (1) 4 mA = 0 spm      (2) 4 mA = 10 spm      (3) 4 mA = 10 spm  
 20 mA = 144 spm      20 mA = 120 spm      20 mA = 144 spm



### Manual frequency variation

Manual speed control

- Frequency: 50 or 60 Hz
- Programmable flow rate (%) with 10 to 100% display. Minimum reading of 10% (for 60 Hz) or 12% (for 50 Hz)
- Pump stopped at 10 or 12% (6 Hz)

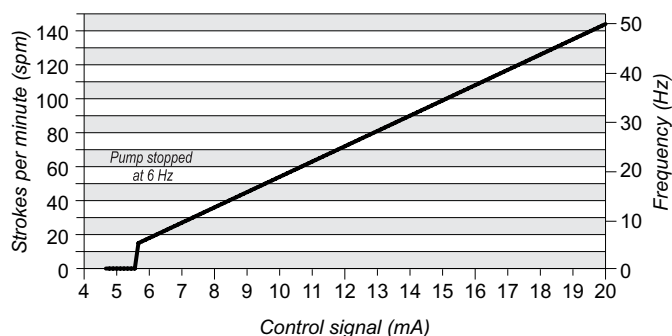


### Automatic frequency variation

Speed controlled by analogue signal

- Programmable frequency: 6 to 60 Hz
- 4-20 mA analogue signal
- Pump stopped at 6 Hz

### Speed controlled by MODE 4 control signal



### Pulse mode

Control via voltage-free contact

- Built-in pulse multiplier/divider
- Programming between 1 and 10



### Metering of preselected quantities

Programming of 1 to 9,999 pump strokes

Example using a GM50P40Q3 pump:

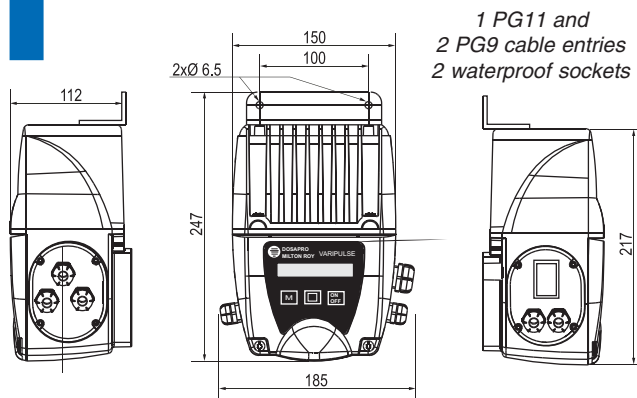
- quantity requested: 2 litres
  - number of strokes set to 345 (100% stroke)
- The pump will deliver 2 litres at each request



### Calibration

- Makes checking the pump flow rate with a measuring pot possible
- Factory programmed to 100 spm

## Dimensions



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