

# VARIPULSE® interactive control module

Adjusts and controls the flow of Series G™ A and G™ M pumps.  
Available in two versions:

- 1 Frequency variation
- 2 Three operating modes: manual, proportional by 4-20 mA analog signal and proportional by pulse.

## APPLICATIONS

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

## 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**.

## BENEFITS

- Multi-language backlit LCD display navigation and command keys for rapid set-up
- Possible keypad rotation of 90° or 180° on the cover
- Simple, highly reliable and efficient **multi-purpose** system
- Delivered ready to use with optimized factory settings for each mode
- Guaranteed operation regardless of voltage disturbances and fluctuations or mains frequency
- Energy savings and extended lifetime

## INTEGRATED PROTECTION SYSTEMS

Remote fault reporting:

- 1 Frequency variation version (3F):
  - Overvoltage, undervoltage and overcurrent mains protection
  - Temperature protection for electronic components
  - Protection against faulty insulation and short-circuits
  - Locked rotor detection
  - Control inputs self-protected against shorts and overloads
- 2 Three-operating modes version (3V):  
Version 1 plus:
  - Low level
  - Electronics



G™ pump with VARIPULSE® 3V control module

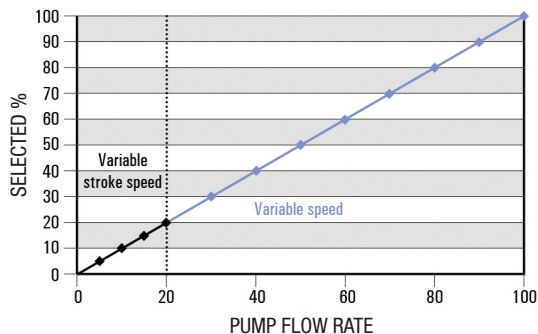
## TECHNICAL FEATURES

- Supply voltage: one-phase; 220 V (-7% to +10%) for 230 V three-phase motor.  
Option: 400 V three-phase mains
- Frequency: 50/60 Hz
- Power: 0.09 to 0.25 kW
- Enclosure: IP55. IP66 keypad
- Operating ambient temperature: -20 to +40 °C (-4 to +104 °F)
- Local fault indicator and remote alarm via voltage-free contact (1 A-250 V)
- Input impedance: 500 ohms
- Level detection
- Construction:
  - Aluminium finned box for reliable cooling by natural convection
  - Resin-moulded electronic components absorb vibrations and keep moisture out
- Alarm log
- Mounting in place of the previous model
- Captive screws
- Field bus communication: on request

## 3 OPERATING MODES

### Manual mode

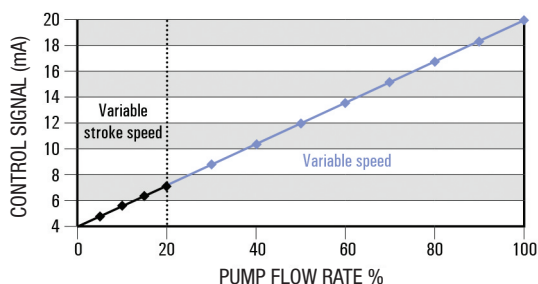
- Selection of pump model
- Programmable flow rate from 1 to 100%
- Automatic modification of operating mode to optimize the pump output from 1 to 20% of the flow rate. The VARIPULSE® works in on/off mode from 0 to 20%. Above 20%: working in frequency variation.



### Proportional mode by 4-20 mA analog system

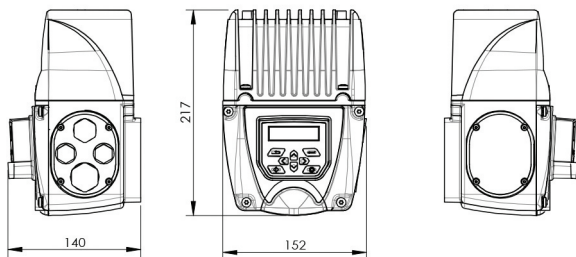
Flow rate controlled by a 4-20 mA analog signal.

- 4 mA: 0% of pump flow rate
- 20 mA: 100% of pump flow rate



The VARIPULSE® works in on/off mode from 0 to 20%. Above 20%: working in frequency variation.

### Dimensions (in mm)



### Proportional mode by pulse

Flow rate controlled by voltage free contact or open collector.

- Selection of flowmeter
- Fittings flow rate (pulses generator meter): 1.5 m³/h, 2.5 m³/h, 3.5 m³/h, 5 m³/h, 10 m³/h, 15 m³/h, 25 m³/h, 40 m³/h, 60 m³/h, 100 m³/h
- Reference volume: 0.25 l/imp., 0.5 l/imp., 1 l/imp., 10 l/imp.
- The VARIPULSE® calculates the coefficient to be applied in order to optimize the pump speed according to its model.

#### Example:

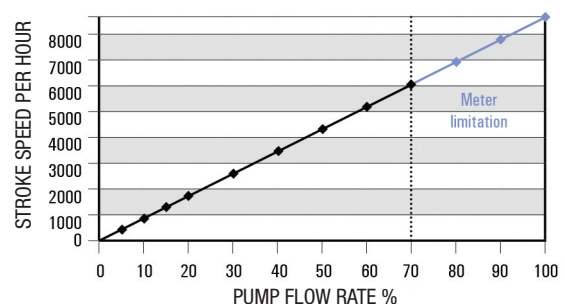
Fittings flow rate: 1.5 m³/h

Reference volume: 0.25 l/imp.

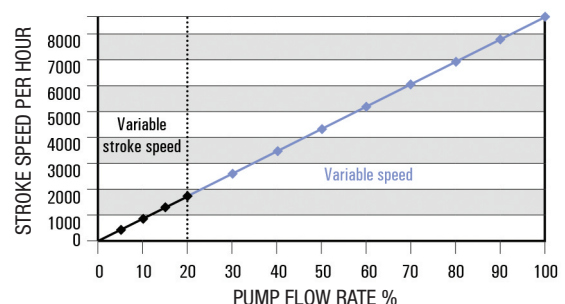
- Pump model: GM50 with a stroke speed of 144 spm ie 8,640 strokes/h. So, for fittings rated capacity, the pump number of strokes is 6,000 strokes/h.

Then the VARIPULSE® calculates the coefficient of optimization to have a pump flow rate of 100% with the 6,000 pulses stemming from the meter which allows an optimal sizing of pump.

The following graphs illustrate this example:



After the optimization for 6,000 pulses, the pump achieves 8,640 strokes/hour.



The VARIPULSE® works in on/off mode from 0 to 20%. Above 20%: working in frequency variation.



Milton Roy® is a brand of Ingersoll Rand. Ingersoll Rand (NYSE:IR), driven by an entrepreneurial spirit and ownership mindset, is committed to helping make life better. We provide innovative and mission-critical industrial, energy, medical and specialty vehicle products and services across 40+ respected brands designed to excel in even the most complex and harsh conditions where downtime is especially costly. Our employees connect to customers for life by delivering proven expertise, productivity and efficiency improvements. For more information, visit [www.IRCO.com](http://www.IRCO.com).

To find your local representative, visit  
**[www.miltonroy.com](http://www.miltonroy.com)**

VARIPULSE® - Datasheet ref. 160 7003 201N - 06/20  
© 2020 Milton Roy, LLC. All rights reserved for modification without prior notice

Distributed by:



Döngesstr. 6, 41238 Mönchengladbach

Tel.: +49-2166-18 999-0

Email: [info@medotec.de](mailto:info@medotec.de)

[www.medotec.de](http://www.medotec.de)