



G™A



G™M

VARIPULSE® module

for dosing pumps series G™A and G™M

Start-up & commissioning manual

Manual N°: Varipulse_2020_E

Rev. date: 09/2020

Rev. 1

Translated version

DECLARATION « CE » DE CONFORMITE

F CONFORME A LA REGLEMENTATION CI-DESSOUS

-DIRECTIVE "MACHINES"

DIRECTIVE DU CONSEIL DU 17 mai 2006 (2006/42 CEE) CONCERNANT LE RAPPROCHEMENT DES LEGISLATIONS DES ETATS MEMBRES RELATIVES AUX MACHINES.

Nous, MILTON ROY EUROPE 27360 PONT SAINT PIERRE France déclarons que le matériel désigné ci-après est en conformité avec la directive "machines" sous réserve que l'installation, l'utilisation et la maintenance soient effectuées suivant les règles de l'art et selon les prescriptions définies dans la notice d'instructions.

"EC" DECLARATION OF CONFORMITY

GB CONFORMS WITH THE REGULATIONS BELOW

- "MACHINES" DIRECTIVE

DIRECTIVE OF THE COUNCIL OF May 17, 2006 (2006/42 EEC), CONCERNING THE APPROXIMATION OF THE LAWS OF MEMBER STATES RELATIVE TO MACHINES.

We, MILTON ROY EUROPE 27360 PONT SAINT PIERRE, France hereby declare that the equipment designated below : conforms with the "machines" directive, on the condition that installation, use and maintenance are performed in keeping with recognized workmanship practices and according to the specifications given in the instruction manual.

EG-KONFORMITÄTSERKLÄRUNG

D IN KONFORMITÄT DER NACHSTEHENDEN BESTIMMUNGEN

- EG-MASCHINENRICHTLINIE

RICHTLINIE DES RATS VOM 17.mai 2006 (2006/42 EWG), BEZÜGLICH DER ANNÄHERUNG DER GEBETZGEBUNGEN DER MITGLIEDSSTAATEN AUF DEM GEBIET DES MASCHINENWESENS.

Wir, MILTON ROY EUROPE 27360 PONT SAINT PIERRE FRANCE erklären, daß die nachstehend bezeichneten Gerätschaften : der EG-Maschinenrichtlinie konform ist, falls Einbau, Verwendung und Wartung fachgerecht und unter Einhaltung der in der Gebrauchsanleitung enthaltenen Vorschriften erfolgen.

EG FABRIKANTENCONFORMVERKLARING

NL CONFORM VAN HET HIERONDER VERMELDE REGLEMENT

- RICHTLIJN « MACHINES »

DOOR DE RAAD VAN DE EUROPESE UNIE OP KAN 2006 UITGEVAARDIGD ALS EG-RICHTLIJN 2006/42, INZAKE DE HARMONISATIE VAN DE WETGEVING DER LIDSTATEN BETREFFENDE MACHINES.

De ondergetekenden, MILTON ROY EUROPE 27360 PONT SAINT PIERRE ,FRANKRIJK. verklaren dat het hierna vermelde materiaal overeenstemt met de richtlijn «machines» op voorwaarde dat installatie, gebruik en onderhoud vakkundig en volgens de betreffende handleidingen plaatsvinden.

DICHIARAZIONE DI CONFORMITA' "CE"

I CONFORME DELLA NORMATIVA SOTTO DESCRITTA

- DIRETTIVA "MACCHINE"

DIRETTIVA DEL CONSIGLIO DEL 17 potere 2006 (2006/42 CEE) IN SEGUITO ALL'UNIFORMAZIONE DELLE LEGISLAZIONI DEGLI STATI MEMBRI RELATIVE ALLE MACCHINE.

La società MILTON ROY EUROPE 27360 PONT SAINT PIERRE FRANCIA dichiara che l'apparecchiatura descritta di seguito : è conforme alla 3eserva3a "macchine", con la 3eserva che l'installazione, l'utilizzazione e la manutenzione vengano effettuate attenendosi alle regole d'arte e rispettando le procedure descritte nel manuale d'istruzioni.

DECLARACION "CE" DE CONFORMIDAD

E CONFORME AL LA REGLAMENTACION SIGUIENTE

- DIRECTIVAS "MAQUINAS"

DIRECTIVA DEL CONSEJO DEL 17 DE MAYO DE 2006 (2006/42 CEE) RELATIVA AL ACERCAMIENTO DE LAS LEGISLACIONES DE LOS ESTADOS MIEMBROS EN LO QUE RESPECTA A LAS MÁQUINAS.

Nosotros, MILTON ROY EUROPE - 27360 PONT SAINT PIERRE – FRANCIA Declaramos que el matériel que a continuación se designa : cumple la directiva "máquinas" siempre y cuando la instalación, el uso y el mantenimiento sean efectuados de conformidad con la normativa profesional y cumpliendo las prescripciones del manual de instrucciones.

DECLARAÇÃO "CE" DE CONFORMIDADE

P CONFORME DA REGULAMENTAÇÃO ABAIXO
- DIRECTIVA "MÁQUINAS"

DIRECTIVA DO CONSELHO DO DIA 17 DE PODER DE 2006 (2006/42 CEE) NO QUE SE REFERE À APROXIMAÇÃO DAS LEGISLAÇÕES DOS ESTADOS MEMBROS RELATIVAS ÀS MÁQUINAS.

Nós, MILTON ROY EUROPE - 27360 Pont Saint Pierre – FRANCE , declaramos que o material designado em seguida : está em conformidade com a directiva "máquinas" sob reserva que a instalação, utilização e manutenção sejam efectuadas seguindo as regras da arte e segundo as prescrições da nota de instruções.

EF-OVERENSSTEMMELSEERKLÆRING

DK I OVERENSSTEMMELSE MED I NEDENSTÅENDE BESTEMMELSER
- "MASKIN"DIREKTIV

RÅDETS DIREKTIV AF 17 ma 2006 OM INDBYRDES TILNÆRMELSE AF MEDLEMSSTATERNES LOVGIVNING OM MASKINER (2006/42/EØF).

Underskrevne: MILTON ROY EUROPE - 27360 Pont Saint Pierre - FRANKRIG erklærer hermed, at nedenstående udstyr : er i overensstemmelse med "maskin"direktivet under forudsætning af, at montering, anvendelse og vedligeholdelse foregår i henhold til god faglig praksis og de i vejledningen angivne forskrifter.

"EG"-INTYG OM UPPFYLLANDE

SW I ENLIGHET I NEDANSTÅENDE BESTÄMMELSE
- "MASKIN"ÅDIREKTIV

DIREKTIV FRÅN RÅDET, DEN 17 KAN 2006 (2006/42 EEC) RÖRANDE NÄRMANDE AV MEDLEMSSTATERNAS LAGSTIFTNINGAR FÖR MASKINER.

Vi, MILTON ROY EUROPE - 27360 Pont Saint Pierre – FRANKRIKE intygar att nedan beskriven utrustning : överensstämmer med "maskin"-direktivet under förutsättning att den installeras, används och underhålls enligt konstens regler och enligt de beskrivningar som ges i användarinstruktionen.

"EU"-TODISTUS VAATIMUSTEN TAYTTAMISESTA

FIN ALLAOLEVAN MÄÄRÄYKSEN MUKAISESTI
- KONEDIREKTIIVI

NEUVOSTON DIREKTIIVI, 17. Toukokuu 2006 (2006/42 EEC), KOSKIEN JÄSENVALTIOIDEN KONEISIIN LIITTYVIEN LAINSÄÄDÄNTÖJEN LÄHENTYMISTÄ.

Me, MILTON ROY EUROPE - 27360 Pont Saint Pierre – RANSKA todistamme, että seuraavassa selostettu varustus : vastaa konedirektiiviä edellyttäen, että se asennetaan, sitä käytetään ja huolletaan sääntöjen ja käyttöohjeissa olevien selostusten mukaisesti.

ΔΗΛΩΣΗ ΠΙΣΤΟΤΗΤΑΣ "ΕΚ"

GR ΣΥΜΦΩΝΑ ΜΕ ΤΟ "ΜΗΧΑΝΗΜΑΤΑ" ΡΥΘΜΙΣΗΣ

ΟΔΗΓΙΑ "ΜΗΧΑΝΗΜΑΤΑ" ΟΔΗΓΙΑ ΤΟΥ ΣΥΜΒΟΥΛΙΟΥ ΤΗΣ 122ης Μπρωύ 2006 (2006/42 ΕΟΚ), ΠΟΥ ΑΦΟΡΑ ΤΗΝ ΠΡΟΣ ΕΠΙΣΗ ΤΩΝ ΝΟΜΟΘ ΕΣΙΩΝ ΤΩΝ ΚΡΑΤΩΝ ΜΕΛΩΝ ΣΧΕΤΙΚΑ ΜΕ ΤΑ ΜΗΧΑΝΗΜΑΤΑ.

Η MILTON ROY EUROPE - 27360 PONT SAINT PIERRE – FRANCE

δηλώνουμε ότι το παρακάτω περιγραφόμενο μηχανήμα :

είναι σύμφωνο προς την οδηγία "Μηχανήματα" , με την επιφύλαξη ότι η εγκατάσταση, η χρήση και η συντήρηση του θα πραγματοποιούνται σύμφωνα προς τους κανόνες της τεχνής και τις προδιαγρα φές που ορίζονται από τις οδηγίες χρήσης.

"ЕС" ДЕКЛАРАЦИЯ О СООТВЕТСВИИ ПРОДУКЦИИ

RU ПРОДУКЦИЯ СООТВЕТСВИУЕТ НОРМАМ, ПРИВЕДЕННЫМ НИЖЕ
- ДИРЕКТИВЕ О "МЕХАНИЧЕСКИХ ИЗДЕЛИЯХ"

ДИРЕКТИВА СОВЕТА (КОНСУЛЬСТВА) ОТ 17 МАЯ, 2006 (2006/42 ЕЕС), ОТНОСЯЩЕЙСЯ К СОБЛЮДЕНИЮ ЗАКОНОВ УЧАСТНИКОВ ОБЩЕСТВА МЕХАНИЧЕСКИХ ИЗДЕЛИЙ (МАШИН). МЫ, КОМПАНИЯ MILTON ROY EUROPE, адрес 27360 PONT SAINT PIERRE, ФРАНЦИЯ НАСТОЯЩИМ ЗАЯВЛЯЕМ, ЧТО ОБОРУДОВАНИЕ ОПИСАННОЕ НИЖЕ СООТВЕТСВИЕТ ДИРЕКТИВЕ О «МЕХАНИЧЕСКИХ ИЗДЕЛИЯХ» ПРИ УСЛОВИИ, ЧТО ЕГО УСТАНОВКА, ИСПОЛЬЗОВАНИЕ И ОБСЛУЖИВАНИЕ ПРОИЗВОДИЛОСЬ КВАЛИФИЦИРОВАННЫМ ПЕРСОНАЛОМ И В СООТВЕТСВИИ С ИНСТРУКЦИЕЙ ПО ЭКСПЛУАТАЦИИ.

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I - VARIPULSE® Controller



(3F Version: Frequency variation)

I.1 General

The Varipulse® allows proportional control of pump flowrate in relation to analogue signals. Modern vector voltage control electronics compensate for variations in power supply voltage by generating and adjusting a voltage and frequency to control a three-phase motor through a series of starts without compromising performance on an operating range from 6 to 50 Hz.

I.2 Safety and protection precaution

	Never service the Varipulse® without first cutting off the power source.	
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	Protect the Varipulse® by a gL fuse or a circuit breaker of 8 A If a circuit breaker is used, this one must be of a disjunctive motor type (curve D).	
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P (kW)	VMA calibre	I (A)	gL fuse or circuit breaker(A)	Cables (mm ²)
0.25	A21M-0.25	3.5	8	1.5

I.3 Specifications

Supply voltage	200 V (-10%) to 240 V (+10%) - delta connection
Frequency	50/60 Hz
Power	0.09 to 0.25 kW
Enclosure	IP55
Speed rate	6 to 50 Hz at constant couple
Speed reference	4-20 mA
Ambient temperature	-20 to +40 °C
Current input impedance	500 ohms (Ground reference)
Voltage input impedance	100 kohms (Ground reference)
Normative	EMC Class A requirements (standard)
Level detection	By volt-free contact

I.4 Relevant information

- On the terminal block, a shunt is fitted across terminals 6 and 8 as order command of the Varipulse in frequency variation. DO NOT REMOVE THE SHUNT. However, for a remote start/stop of the 3F VARIPULSE, replace the shunt by a switch across terminals 6 and 8.
- Electric scheme is available on page 21
- At start-up, there is a delay setting of 5 seconds to ensure the proper functioning of the Varipulse.



II - VARIPULSE® Controller



(3V Version: Manual / Pulse / 4-20 mA signal)

II.1 General

Vector voltage control electronics compensate for variations in power supply voltage by generating and adjusting voltage and frequency to control a three-phase motor either by frequency variation or through a series of starts without compromising performance over the entire operating range from 1 to 100.

II.2 Safety and protection precaution

	Never service the Varipulse® without first cutting off the power source.	
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	Protect the VARIPULSE® by a gl fuse or a circuit breaker of 8 A If a circuit breaker is used, this one must be of a disjunctive motor type (curve D).	
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II.3 Specifications

Supply voltage	Single phase current network: 230 V (-10% to +10%) to command a three-phase motor, 230 V)
Frequency	50/60 Hz
Power	0.09 to 0.25 kW
Enclosure	IP55 (IP66 keypad)
Ambient temperature	-20 to +40 °C
Input impedance	500 ohms 4-20 mA (ground reference)
Normative	EMC Class A requirements (standard)
Control	By external volt-free contact or transistor
Level detection	By volt-free contact

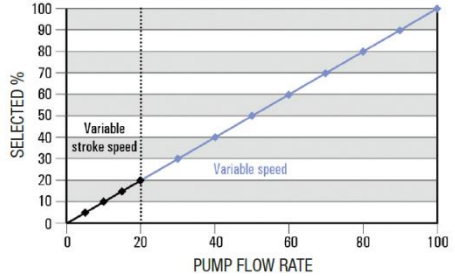
II.4 Operating modes

Manual flow

MODE 1
0 – 100%
MANUAL

Programming of the percentage of the pump flow:

Depending on the programming, the Varipulse works either in variable speed or in pulse mode.
Example: 20% of flow.



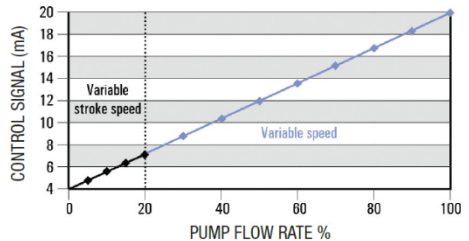
Under 20% and depending on the pump type that you gave information for, it will calculate the frequency of starting and the operating time of the pump.
Above 20%, the motor speed will be proportional to the chosen percentage.

Proportional flow by analogical signal

MODE 2
4-20mA
AUTOMATIC

Control of the pump flow by analogical signal 4-20 mA. (See electric diagram).

In this way, depending on the signal value, the Varipulse works either in variable speed or in pulse mode



Example: with an input signal of 2 volts that means 20 %, the Varipulse calculates the frequency and the operating time of the pump. Above 2 volts, the motor speed varies depending on the analogical signal of the command.

Proportional flow by pulses

MODE 3 PULSE AUTOMATIC

Proportional speed control to the pulses emitted by a water meter (Water meter equipped with a pulse transmitter head).

To set the Varipulse, you have to know the two following parameters:

- Maximum capacity through the meter
- Volume of reference

Possible flow rates:

- | | |
|-------------------------|-------------------------|
| • 1.5 m ³ /h | • 15 m ³ /h |
| • 2.5 m ³ /h | • 25 m ³ /h |
| • 3.5 m ³ /h | • 40 m ³ /h |
| • 5 m ³ /h | • 60 m ³ /h |
| • 10 m ³ /h | • 100 m ³ /h |

Possible volumes of reference:

- | | |
|------------------------------------|-------------|
| • 0.25 liter so 4 pulses per liter | • 1 liter |
| • 0.50 liter so 2 pulses per liter | • 10 liters |

It is essential to accurately select the volume of reference.

In this mode, depending on the frequency of the pulses, the Varipulse works either in frequency variation or in pulse mode.

Based on the flow through the meter and on the volume of reference, the Varipulse automatically calculates the division or multiplication ratio to apply in order to have a pump flow rate of 100%.

Depending on these two parameters and the pump type:

- From 1 to 20% the of pump flow, the Varipulse calculates the frequency of on/off cycles of the pump,
- Above 20%, the Varipulse calculates the operating speed of the pump,
- Below 1% of the meter flow, the pump stops.

!!IMPORTANT!

In this mode, the Varipulse measuring the time between two pulses, the shutdown time depends on the choice of the reference volume of the counter.

Meter selection:

The selection of the meter has to be based on the pump frequency in order to have an optimum number of pulses (use the following tables).

G™M pump:

Pump type	Stroke speed (spm)	Optimum pulse repetition / hour Stroke sp. x 60
GM500	180	10 800
GM400	144	8 640
GM330	144	8 640
GM240	144	8 640
GM170	144	8 640
GM120	72	4 320

Pump type	Stroke speed (spm)	Optimum pulse repetition / hour Stroke sp. x 60
GM90	72	4 320
GM50	144	8 640
GM25	72	4 320
GM10	144	8 640
GM5	72	4 320
GM2	36	2 160

G™ A pump:

Pump type	Stroke speed (spm)	Optimum pulse repetition / hour Stroke sp. x 60
GA170	144	8 640
GA120	144	8 640
GA90	72	4 320
GA45	144	8 640
GA25	72	4 320
GA10	144	8 640
GA5	72	4 320
GAA2	36	2 160

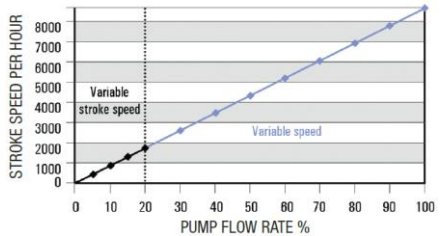
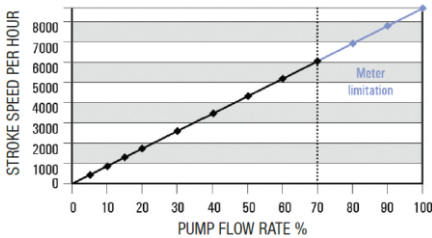
The choice of the volume of reference will be made depending on the optimum pulse repetition frequency / hour.

Example: Fittings flow rate: 1.5 m³/h - Reference volume: 0.25 l/pulse.

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

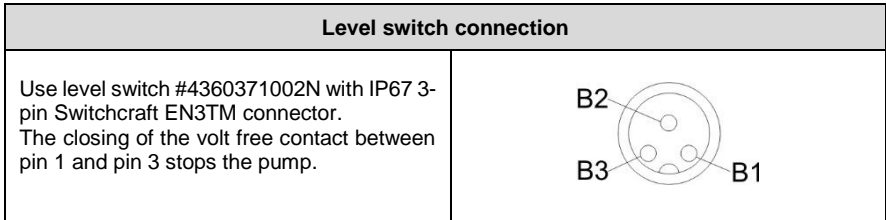
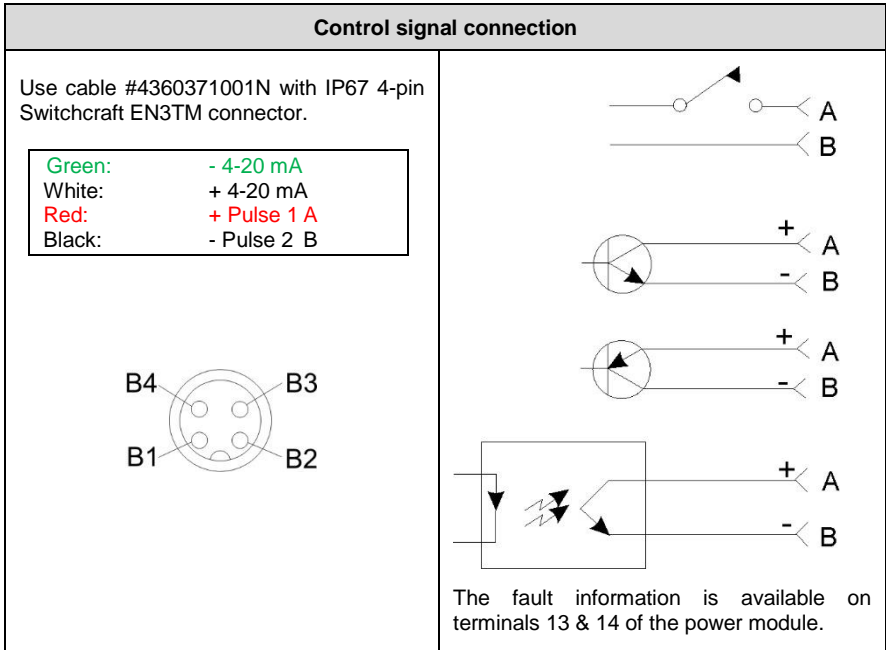
Then the VARIPULSE® calculates the coefficient of optimization to have a pump flow rate of 100% with the 6,000 pulses stemming from the meter. That allows an optimal sizing of the pump.

The following graphs illustrate this example.



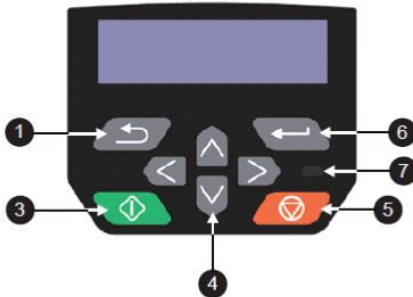
After the optimization for 6,000 pulses, the pump achieves 8,640 strokes/hour.

II.5 Wiring diagram



II.6 Display and Navigation

6.1 – Display overview



1. Escape button
2. Start reverse (Auxiliary button), Field Keypad RTC only
3. Start forward button (Green)
4. Navigation buttons (x4)
5. Stop / Reset (red) button
6. Enter button
7. Status LED, ID-SIZEx-Keypad⁽¹⁾ only

⁽¹⁾ ID-SIZEx-Keypad can be either ID-SIZE1-Keypad or ID-SIZE3-Keypad

The keypad detailed guide is available on next page.

Pay particular attention: the % value displayed on the screen of the Varipulse during running (see below) is the current intensity absorbed by the motor (function of the load) and NOT the flow rate setting












Current Intensity absorbed by the motor (and NOT the value of flow rate of the pump)



If the pump doesn't start when pushing the Start/Stop button :

Check that the program is actually running:

- Reach menu 0 / parameter 10: **#00.010** :
- By using  or , select the menu. Then select the parameter by using  or 
- Press  to access the parameter
- By using  or  modify the value to select "All menus". Press  to validate
- Repeat the steps to reach menu 11 / parameter 47: **#11.047**
- Check the indicated value in #11.047: if the value is: "Stop", modify it to reach "Run". Press  to validate.
- Return to menu 0 / parameter 10: **#00.010** and repeat the above first step to put #00.010 at "Level 1".

II.7 Language selection and mode configuration

7.1- Language selection

Turn on the pump and the Varipulse		
Display the available languages by pushing during 3 seconds the button		
Press the button to modify the language. Language will flash		
Select the language with the buttons	or	
Validate the language by pressing the button		
Return to the main screen by pressing the button		











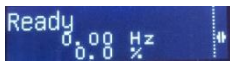
7.2 – Motor selection

According to the pump model AND its voltage supply, you need to enter the associated motor. **Please pay attention: once the motor code selected, it's necessary to follow the step related to the factory setting by enter the value "47" to allow the Varipulse program initialization.**



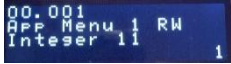

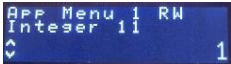


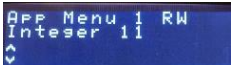



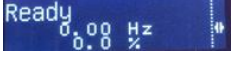
Press the buttons to reach parameter 7 (#00.007)	or	
Press the button to modify the parameter		
Select the proper motor code: values from 1 to 8 (please refer on next table) by pressing the buttons	or	

Motor selection: Cross-reference table

Value for parameter 7	Motor type	Value for parameter 7	Motor type
1	Motor for pumps GA2/GM2/GM5/GM10/GM25/GM50/GM90/GM120 EUROPEAN setting (240 V, 50 Hz , 1,380 rpm, 0.6Phi, 0.8A) Motor #: 0280066000LS - 90 W	5	Motor for pumps GM170/GM240/GM330 EUROPEAN setting (240 V, 50 Hz , 1,409 rpm, 0.6Phi, 1.05A) Motor #: 0280052000LS - 120 W, 4-pole
2	Motor for pumps GA2/GM2/GM5/GM10/GM25/GM50/GM90/GM120 USA setting (240 V, 60 Hz , 1,660 rpm, 0.55Phi, 0.75A) Motor #: 0280066000LS - 90 W	6	Motor for pumps GM170/GM240/GM330 USA setting (240 V, 60 Hz , 1,700 rpm, 0.6Phi, 1A) Motor #: 0280052000LS - 120 W, 4-pole
3	Motor for pumps GA5/GA10/GA25/GA45/GA90/GA120/GA170 EUROPEAN setting (240 V, 50 Hz , 2,800 rpm, 0.6Phi, 0.9A) Motor #: 70049LS - 120W, 2-pole	7	Motor for pumps GM400/GM500 EUROPEAN setting (240 V, 50 Hz , 1,425 rpm, 0.65Phi, 1.4A) Motor #: 0280036001N - 250 W
4	Motor for pumps GA5/GA10/GA25/GA45/GA90/GA120/GA170 USA setting (240 V, 60 Hz , 3,350 rpm, 0.6Phi, 0.55A) Motor #: 70049LS - 120 W, 2-pole	8	Motor for pumps GM400/GM500 USA setting (240 V, 60 Hz , 1,705 rpm, 0.65Phi, 1.3A) Motor #: 0280036001N - 250 W

Press the buttons to reach parameter 8 (#00.008)	 or 	
Press the button to modify the parameter		
Enter the value 47 to return to the factory default by using the buttons. Automatically, the value will turn to 0	 or 	 
Return to the main screen by pressing the button Pay attention: If "Ready" is not displayed on the screen, please start again the previous step (Value = 47 for the parameter 8)		

7.3 – Pump selection

Press the buttons to reach parameter 1 (#00.001)	 or 	
Press the button to modify the parameter (default value = 1)		
Select your pump code: values from 1 to 20 (please refer on next table) by pressing the buttons (default value = 1)	 or 	
Validate the pump selection by pressing the button (default value = 1)		
Return to the main screen by pressing the button		










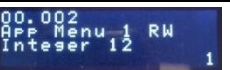


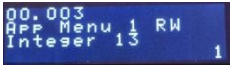

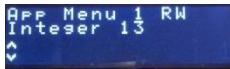


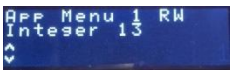



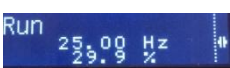




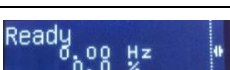
NOTE

When shipped from the factory, the Varipulse is configured with MODE 1 and a 50%-flow setpoint.

Pump selection: Cross-reference table

Value of parameter 1	Pump type	Value of parameter 1	Pump type	Value of parameter 1	Pump type	Value of parameter 1	Pump type
1	GA2	6	GA90	11	GM10	16	GM170
2	GA5	7	GA120	12	GM25	17	GM240
3	GA10	8	GA170	13	GM50	18	GM330
4	GA25	9	GM2	14	GM90	19	GM400
5	GA45	10	GM5	15	GM120	20	GM500



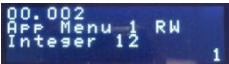

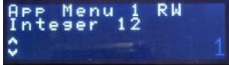








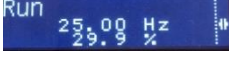




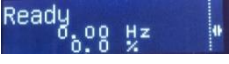
7.4 - Parameter setting Mode

Mode 1: Manual flow		
Press the buttons to reach parameter 2 (#00.002) . (default value = 1)	 or 	
Press the button to modify the parameter		
Select mode 1 by selecting 1 as value by pressing the buttons	 or 	
Validate the mode selection by pressing the button		
Flow change in MODE 1		
Press the buttons to reach parameter 3 (#00.003) . (default value = 1)	 or 	
Press the button to modify the parameter		
Press the buttons to increase or decrease the % of flow from 0 to 100%	 or 	
Return to the main screen by pressing		
Press the green button to run the pump		
Press the buttons to reach parameter 6 (#00.006) in order to read the value of the pump flow rate (ex: value = 21% on the opposite figure)	 or 	
Press the green button to stop the pump		

NOTE:

From 1 to 20% of the pump flow, the Varipulse works in on/off mode. The time between two start-ups of the pump is proportional to the % of the calculated instruction.




Above 20% of the pump flow, the Varipulse works in frequency variation.










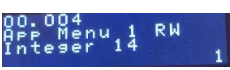

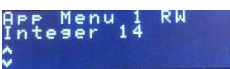




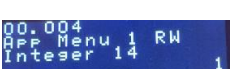







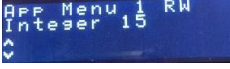

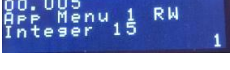


Mode 2: Proportional flow by 4-20 mA analog signal		
Press the buttons to reach parameter 2 (#00.002) . (Default value = 1)	 or 	
Press the button to modify the parameter		
Select mode 2 by selecting 2 as value by pressing the buttons	 or 	
Validate the mode selection by pressing the button		
Return to the main screen by pressing		
Press the green button to run the pump		
Press the buttons to reach parameter 6 (#00.006) in order to read the value of the 4-20 mA setpoint. (ex. value = 21% on the opposite figure)	 or 	
Press the green button to stop the pump		







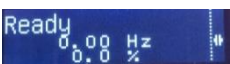
NOTE:

From 1 to 20% of the pump flow, the Varipulse works in on/off mode. The time between two start-ups of the pump is proportional to the % of the calculated instruction.

Above 20% of the pump flow, the Varipulse works in frequency variation.

Mode 3: Flow variation in PULSE MODE		
Press the buttons to reach parameter 2 (#00.002) . (default value = 1)	 or 	

Press the button to modify the parameter		
Select mode 3 by selecting 3 as value by pressing the buttons	 or 	
Validate the mode selection by pressing the button		
Enter to the nominal flow of the meter:		
Press the buttons to reach parameter 4 (#00.004). (default value = 1)	 or 	
Press the button to modify the parameter		
Select the nominal flow of the meter: value from 1 to 10 (please refer on table on page 20) by pressing the buttons	 or 	
Validate the nominal flow of the meter by pressing the button (default value = 1)		
Enter the volume of reference of the meter:		
Press the buttons to reach parameter 5 (#00.005). (default value = 1)	 or 	
Press the button to modify the parameter		
Select the volume of reference: values from 1 to 5 (please refer on next table) by pressing the buttons	 or 	
Validate the volume of reference by pressing the button (default value = 1)		
Return to the main screen by pressing		

Press the green button to run the pump		
Press the buttons to reach parameter 6 (#00.006) in order to read the value of setpoint. (ex. value = 21 on the opposite figure)	 or 	
Press the green button to stop the pump		

Nominal flows and volume of reference: Cross-reference tables

Value of parameter 4	Nominal flow	Value of parameter 4	Nominal flow
1	100 m ³ /h	6	10 m ³ /h
2	60 m ³ /h	7	5 m ³ /h
3	40 m ³ /h	8	3,5 m ³ /h
4	25 m ³ /h	9	2.5 m ³ /h
5	15 m ³ /h	10	1.5 m ³ /h

Value of parameter 5	Volume of reference
1	0.25 l/i
2	0.5 l/i
3	1.0 l/i
4	5.0 l/i
5	10.0 l/i

NOTE :

- From 1 to 20% of the pump flow, the Varipulse works in on/off mode. The time between two start-ups of the pump is proportional to the % of the calculated instruction. Above 20% of the pump flow, the Varipulse works in frequency variation
- The Varipulse will stop once the time separating two pulses coming from the meter is equal or smaller than 1% of the flow through the meter.

7.5 Alarm log


The alarm log allows to view the ten last alarms. It's available in menu 10 / parameters 20 to 29: #10.020 - #10.029.

The last alarm is displayed on parameter 20: #10.020.

7.6 Acknowledgement of the Low level alarm (optional)

In case of low level, the following alarm message is displayed on the screen of the Varipulse: "Safety Util 40" as shown below:



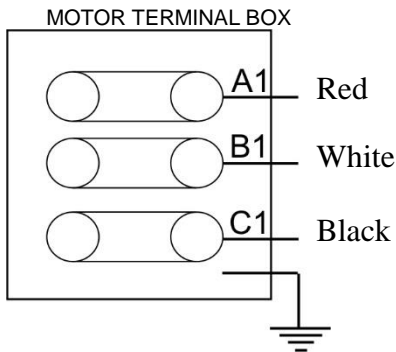
To acknowledge the alarm:
Refill your tank and then reset by pressing the red button .

III – Electrical connections

III.1 Power module connection

The power module is pre-wired when the controller is supplied assembled on a pump. If the controller is supplied as spare parts, wiring is required

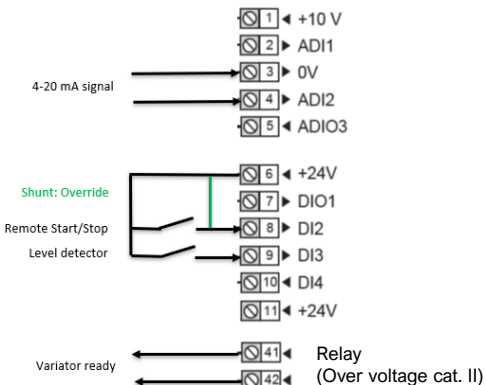
L2 & L3:
 Power supply: 230AC
 Terminal block: VMA 31/32
 Tightening torque: 0.8 N.m
 Max. wiring section: 2.5 mm²



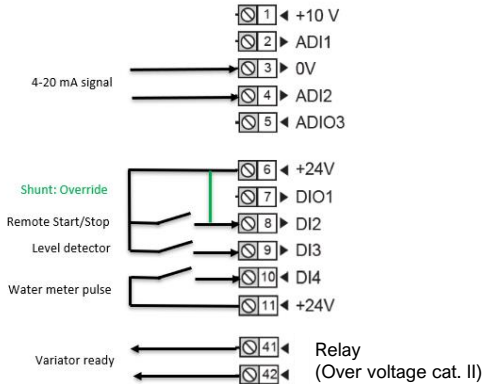
Ground to be connected to the motor terminal box.

III.2 Electrical schemes

3F Version: Frequency variation

































3V Version: Manual / Pulse / 4-20 mA




















Remote Start/Stop – Settings of the Varipulse 3V

The following settings are necessary when operating the Varipulse in remote start/stop.

Press the buttons to reach parameter 10	 or 	#0.010
Press the button to modify the parameter		
Select " All menus " by pressing the buttons (default value = Level 1)	 or 	
Validate by pressing		
Press the buttons to reach menu 8 / parameter 22	 or 	#8.022
Press the button to modify the parameter		

Enter the value 0 (zero)	 or 	
Validate by pressing		
Press the buttons to reach menu 8 / parameter 61	 or 	#8.061
Press the button to modify the parameter		
Enter the value 0 (zero)	 or 	By entering 0 as value, the start function thanks to the keypad is disabled
Validate by pressing		
Press the buttons to reach menu 9 / parameter 4	 or 	#9.004
Press the button to modify the parameter		
Enter the following value: 8.002	 or 	
Validate by pressing		
Press the buttons to reach menu 9 / parameter 6	 or 	#9.006
Press the button to modify the parameter		
Enter the following value: 10.001	 or 	
Validate by pressing		

Press the buttons to reach menu 9 / parameter 9	 or 	#9.009
Press the button to modify the parameter		
Enter the following value: 5 seconds	 or 	Delay before starting up. Milton Roy recommends to not decrease this value.
Validate by pressing		
Press the buttons to reach menu 9 / parameter 10	 or 	#9.010
Press the button to modify the parameter		
Enter the following value: 6.030	 or 	
Validate by pressing		
To save all the parameters (several steps): Reach the menu 0 / parameter 0 by pressing	 or 	#0.000
Press the button to modify the parameter		
Select « Save » by using the buttons	 or 	
Validate by pressing the red reset button.	