



VEGA3

Multi-streams modular flow computer

Software: 6MS01.xx-BCS01.xx

Data sheet: DS/VE/0024/EN Ed. April 2017

VEGA3 is a calculator-indicating device intended to be used in measuring systems for liquids other than water (MID MI-005) approved by the Notified Body LNE (France) with the Evaluation Certificate n. LNE-29970 (see Welmec guide 8.8).

Metrology characteristics

- Multiple streams management:
 - up to n°6 measuring systems – loading arms
- Multiple meters management
 - up to n°12 meters in total
 - up to n°4 meters per measuring system – loading arm
- Multiple products management
 - up to n°16 products in total
 - up to n°4 products per meter
- Flow management:
 - free flow (not interruptible measuring system)
 - flow and batch controlled (interruptible measuring system)
- Measuring system – loading arm configuration:
 - single meter
 - sequential blending
 - ratio blending (up to n°4 meters)
 - side-stream blending (up to n°2 meters)
 - differential (n°2 meters)
- Classes:
 - accuracy class: 0.3, 0.5, 1.0
 - mechanical class: M1
 - electromagnetic class: E2
 - humidity class: H3
 - temperature range: -40°C ÷ +55°C
- Certification of software with the follow extensions (see Welmec guide 7.2):
 - Extension S (Software separation): the metrological and automation parts of software are divided: a specific CRC16 characterizes the Legally Relevant software
 - Extension L (Long term data storage): the delivery data are stored in binary and csv files on internal repository (min. 100.000 transactions) Data can be consulted via specific graphical tool or saved on USB pen drive.
 - Extension T (Legally relevant data transmission): the delivery data can be transmitted via a serial line to Printing system (ISOIL ST500-M) or via Ethernet FTP
- Security:
 - Weight and Measure switch sealing
 - users account (up to 8)
 - parameters modification logging
 - continuous self-diagnosis

Modular architecture

VEGA3 is a flexible, modular and cost-effective system adaptable to different configurations and installation requirements. It is composed of one main module and from none to n°5 extension modules.

➤ FC-M Flow Computer Main

Main module with HMI (with display and keyboard interface)



➤ FC-E Flow Computer Extension

Optional modules (0÷5) linkable to FC-M via daisy-chain Ethernet connection.

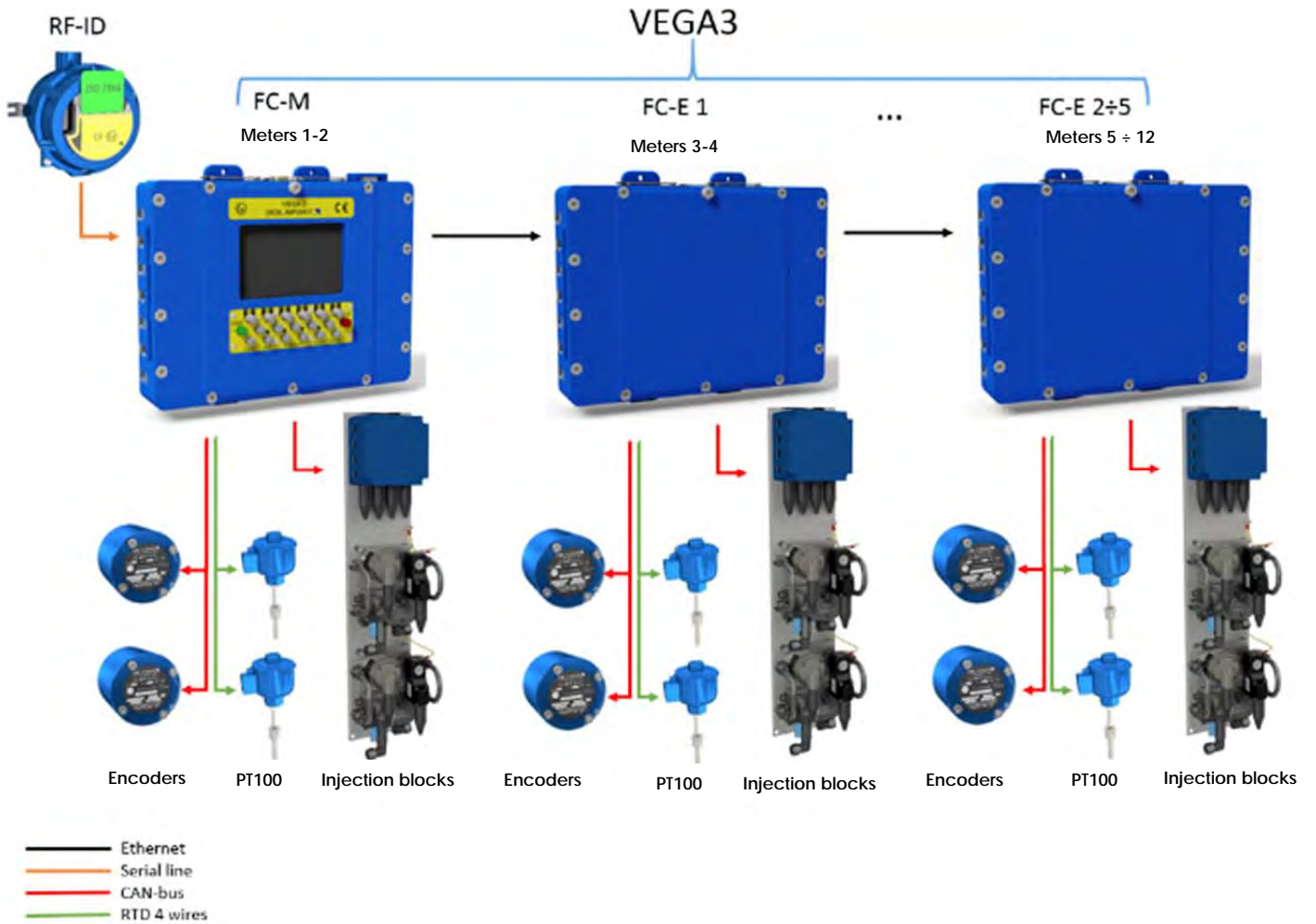


Application

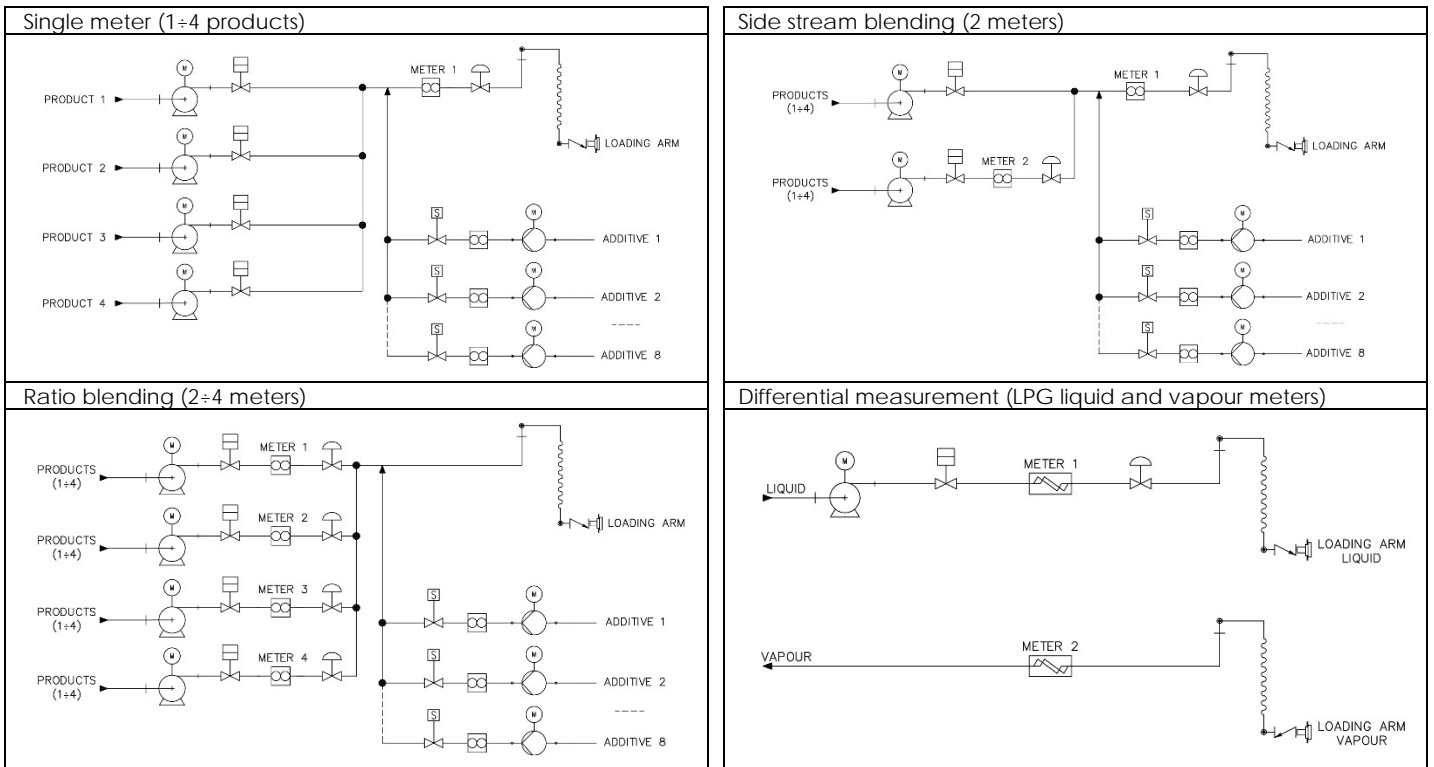
- tank-truck, tanks-trains, ships loading and unloading
- pipe lines
- in line blending and additives injection
- LPG liquid and vapour masses differential measurement

www.isoilmeter.com

Architecture example



Measuring system application example



TECHNICAL SPECIFICATIONS (FC-M – FC-E modules)

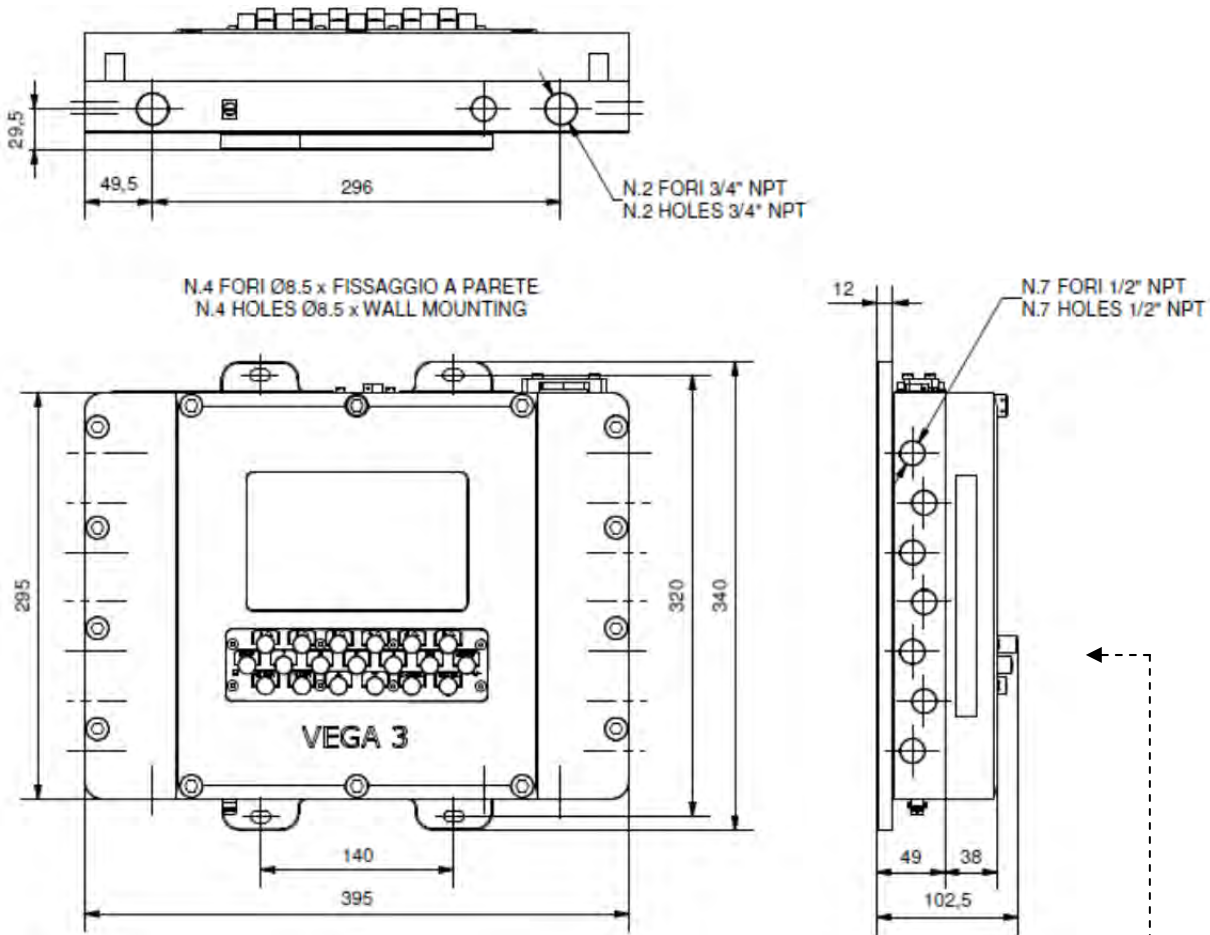
Main power supply	<ul style="list-style-type: none"> • 115/230 Vac (-15 /+10%), 50÷60Hz 60W max. • 24 Vdc (-15 /+10%) 60W max.
Operating temperature	-40 ÷ +55°C (-40 ÷ +131°F) Note: under -25°C VEGA3 should be maintained constantly powered
Storage temperature	-40 ÷ +55°C (-40 ÷ +131°F)
Relative humidity	5÷95 % with condensation
Ex environment according to ATEX	II2G Ex-d IIB T6 Gb IP66 Approval INERIS 15 ATEX0037X
Ex environment according to IECEx	II2G Ex-d IIB T6 Gb IP66 Approval INE 15.0042X
Weatherproof	IP66 Approval INERIS 15 ATEX0037X
Housing material	Aluminium anodized
Dimensions	See drawing
Weight	15 kg approx.
Cable entries	n°14 holes 1/2" NPT + n°2 holes 3/4" NPT
Internal battery (optional)	Battery pack: 2x6Vdc 1150mAh
Display (FC-M only)	Colour graphic Liquid Crystal Display (LCD) 800x480 pixels with LED backlight
Push-buttons (FC-M only)	n°19 solid state (10 numeric + 9 function keys), (1÷6 soft-keys)
Pulses inputs	n°2 inputs two channels phased of 90° ± 30°e, f _{max} 5kHz <ul style="list-style-type: none"> • NPN or PNP open collector
Power supply for pulses emitter	• 12 Vdc 100 mA
Digital inputs	• n°16 NPN open collector
Digital outputs	n°4 open drain outputs: <ul style="list-style-type: none"> • maximum voltage: 30V- • maximum current: 250mA per output • on-off function • PPG (Programmable pulses generator) <ul style="list-style-type: none"> ◦ frequency max. 5Khz ◦ duty cycle 50%
Digital power outputs	n°12 of witch: <ul style="list-style-type: none"> • n° 8 mechanical relays (for all versions) • n° 4 Vac solid state relays for versions powered by Vac voltage • n° 4 Vdc solid state relays for versions powered by Vdc voltage
Mechanical relay	<ul style="list-style-type: none"> • AC Load: max 250 V~, 1 A • DC Load: max 30 V-, 2 A • min switching load: 1 mA, 5 V
Vac solid state relay	<ul style="list-style-type: none"> • operating voltage range: 75÷264 V- (45÷65Hz) • maximum load current range: 1 A • max off-state leakage @ rated current: 1,5 mA • max on-state voltage drop @ rated current: 1,6 Vpk • min. load current: 20 mA
Vdc solid state relay	<ul style="list-style-type: none"> • operating voltage range: 0÷30 Vdc • max load current: 2 A • max. off-state leakage current: <1 mA • max. on-State voltage drop: 0.24 Vdc • min switching load: 1 mA
Temperature inputs (optional)	n°2 inputs for platinum RTD type Pt100 Class A IEC751 (0,00385Ω/°C) <ul style="list-style-type: none"> • temperature range: -50 ÷ +250°C • resolution: 0.025 °C min. (10.000 actual points) • deviation (all gain): ±0.125°C max. (500ppm max.) • refresh time: min. 500ms
Analog inputs 4÷20 mA (optional)	n° 4 two wires inputs 4÷20mA <ul style="list-style-type: none"> • input resistance: 25ohm • resolution: 2µA min. (10.000 actual points) • deviation (all gain): ±10µA max. (600ppm max.) • refresh time: min. 500ms
Analog outputs 4÷20 mA (optional)	n° 4 two wires outputs 4÷20mA <ul style="list-style-type: none"> • max load resistance: 500ohm • resolution: 4µA min. (5.000 actual points) • deviation (all gain): ±20µA max. (1000 ppm max.) • refresh: 50ms min.
Serial communication lines	<ul style="list-style-type: none"> • n°2 EIA RS232/RS485 switchable • n°2 EIA RS485/RS422 switchable
Ethernet (FC-M only)	n°1 Ethernet 100BASE-TX (RJ45)
USB port (FC-M only)	n°1 HiSpeed USB port (Type A)
CAN-bus	n°2 channels <ul style="list-style-type: none"> • channel 1 for Legally Relevant ancillary devices (Encoder Em6422) • channel 2 for not Legally Relevant devices (IC-E Injection Controller Extension) • power supply: 12Vdc 250mA max.

MODEL OF FLOW COMPUTER MODULES:

FC - X - X X - X X X X

Main module (with display and push-buttons)	M								
Extension module	E								
POWER SUPPLY 115/230 Vac		1							
POWER SUPPLY 24 Vdc		2							
NONE			0						
INTERNAL BATTERY			1						
NONE				0					
2PTC BOARD (n°2 PT100 inputs)				1					
NONE					0				
4AIN BOARD (n°4 analog 4÷20mA inputs)					1				
NONE						0			
4AOUT BOARD (n°4 analog 4÷20mA outputs)						1			
NONE								0	
4AOUT BOARD (n°4 analog 4÷20mA outputs)								1	
NONE									0

FC-M dimensions



The FC-E dimensions are the same without push-buttons