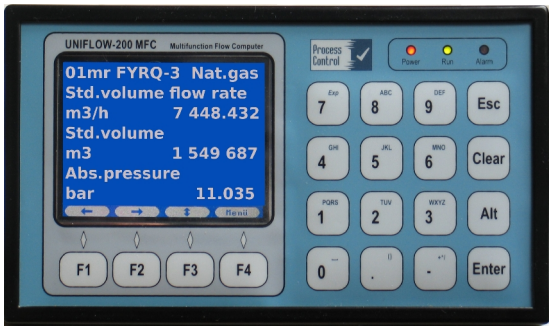
UNIFLOW-200 MFC

the
Economical, Flexible, Versatile,
Reliable and Up to Date
Multifunction Flow Computer



Modular multi-run and multi-station design - eight meter runs and
- four station totalizations

High-performance 32-bit microprocessor

Galvanically isolated I/O points

Smart transmitter interfaces

Trouble and maintenance free – no potentiometers, no batteries

Software calibrated I/O chanels

Multiple RS232/RS485/RS422 serial ports up to 38 400 bit/sec.

10/100 Ethernet port

USB port – data saving on pendrive

Configurable displays

Stored reports and data archiving

Serial interfaces for gas chromatographs, mass and ultrasonic flow meters

Modbus TCP, Modbus, HART, Honeywell DE, US meter protocols

On-line configuration software

CO_2 emission calculation

The UNIFLOW-200 Flow Computer is an - economical, flexible, versatile, reliable, up to date, easy to use and modular - user-configurable panel-mount flow computer. First of all it was designed for hydrocarbon gas and liquid measurement, but it can be applied for measuring industrial gases, steam and hot water too. The standard features of the instrument make it ideal for fiscal measurement, and custody transfer. It can be used for single or multi-run applications up to eight meter runs. In a multi-run system different types of products can be handled simultaneously by using different types of flow meters.

The modular, expandable design provides a flexible interface for various metering equipments, including: standard 4-20mA, RTD, pulse/frequency- and digital I/Os and standard digital communications. Gas chromatographs, mass and ultrasonic flow meters and digital transmitters can be connected.

The UNIFLOW-200 Flow Computer is designed for use either as a stand-alone flow computer or as a system component.
System communication interfaces:
one LAN port, 10/100 Ethernet,
using Modbus TCP protocol
three serial ports
sw selectable RS232/RS4856/RS422, using standard Modbus or Daniel Modbus protocol

Charge free user support PC programs help installation and everyday use:
UNISetup – Parameter Configurator
platform-independent, JAVA-based,
helps to configure the UNIFLOW-200
UNIArchive – Remote Archive Uploader
Windows-based,
reads data from the data archive

Process Control

Process Control Kft. H-1091 Budapest, Haller u. 88.
Tel/Fax.: 361 2154161 or 361 2156730 E-mail: info@processcontrol.hu Web: www.processcontrol.hu

SPECIFICATIONS

Analog inputs
Symmetrical inputs with galvanic isolation

Input range	0/4-20 mA *
Accuracy	+/- 0,02 %
Input impedance	100 ohm
Potential diff. among inputs	50 V max.

4-wire RTD inputs

Sensor type	Pt100 ** standard or individually calibrated
Accuracy	+/- 0,1 °C
Loop impedance	500 ohm max.

Pulse-frequency inputs

Signal processing	without loss of pulses
Frequency range	0 ... 10 000 Hz
Input signal level	2 V …10 V
Signal form	square, unipolar
Inaccuracy of freq. meas.	0,001 % max.

Digital inputs
Potential-free contacts, open collector (transistor) and 24 VDC inputs can be accepted and used as
- static inputs, or
- pulse inputs (frequency: 50 Hz max., 50 % fill in ratio)

without any further activity required from the user
Potential-free inputs are supplied with power from the circuit board (15 VDC, 6,8 kohm)

Analog outputs
Output channels with individual galvanic isolation

Output range	0/4-20 mA *
Resolution	12 bits
Load	500 ohm max.

Digital outputs
Galvanically isolated open collector (transistor), overvoltage- and overload-protected outputs

Load	100 mA, 40 Vdc max.

Field bus inputs

HART	point to point or multidrop connections using HART protocol complete with 24 Vdc power supply
Honeywell DE	Single or Multivariable transmitters using the DE protocol, complete with 24 Vdc power supply

Digital communication
RS232/RS422/RS485*

Baud rate	1200 … 38400 bit/sec*	
Protocol	Modbus (RTU, ASCII)*	
Length of cable	RS232	15 m max.
	RS485/422	1200 m max.

10 / 100 Ethernet

Protocol	Modbus TCP

USB — for data saving on pendrive

Keyboard
Foil protected membrane keyboard

Display
3,5" QVGA (320 x 240) backlit TFT color LCD

Accuracy
Calculated data, pulse and analog outputs:

Under reference conditions	+/- 0.05 %
In the 0…50 °C temperature range	+/- 0.1 %

Environment

Operating temperature	-10 ... 60°C
Operating humidity	0 ... 90 %. non-condensing
Storage temperature	-25 ... 70°C

Power Requirements

Supply voltage	230 Vac +10 %, -15 %, 50-60 Hz 24 Vdc (20 ... 35 V)
Power consumption	25W max.
Transmitter power provided	24 Vdc, 200 mA max.

Dimensions

Panel cut-out	186 mm W x 91 mm H
Case depth	260 mm
Front panel	195 mm W x 110 mm H
Weight	4,3 kg

Compliances and certificates
Available with European CE Mark
EN 12405, OIML R117 and R140 compliant
EC type examination certificate

Standards used in the calculations

Gas:	AGA 8, ISO 5167, ISO 6976, GERG 91, NX19, PTZ, GOST 8.563
Oil:	API 2540, API 11.2.1M, API 11.2.2M
Steam, hot water:	IAPWS-IF97

I/O moduls***

ANI8	8 ch 4-20 mA
PT4	4 ch Pt100 **
ANI4PT2	4 ch 4-20 mA, 2 ch Pt100 **
PDIO484	4 ch pulse input, 8 ch digital input 4 ch digital output
AODIO484	4 ch 4-20 mA output, 8 ch digital input 4 ch digital output
HTI4x15	4 loops to scan 15 HART PV/loop(multidrop) or 4 pcs HART transmitters (point to point), using HART protocol
DE4	2 pcs multivariable, or 4 pcs single variable transmitters using DE protocol

Supported flow meters
orifice, Venturi tube, nozzle, V-cone, Annubar, Vortex, turbine, positive displacement, ultrasonic, Coriolis

Supported fluids

hydrocarbons:	natural gas, crude oils, refined products
industrial gases:	air, nitrogen, oxygen, argon, hydrogen, ammonia, CO2, CO, ethylene, propane, synthesis gas for ammonia, hydrogen reach natural gas, gen. gases
other liquids:	ethanol, binay mixture with single component flow calculation, general liquids
steam and hot water	
other fluids:	on request

* software selectable
** optionally Pt500 or Pt1000 is also possible
*** max. 5 moduls can be applied