



ELIS PLZEŇ a. s.

# MEASUREMENT OF FLOW AND ENERGY

## ELECTROMAGNETIC FLOW METERS



### FLONET FN20xx.1

- for application mainly in water industry
- flow-rate and volume measurement of conductive liquids
- dimensions DN6 to DN1200 (1/4" to 48")
- maximum pressure 40 bar (600psi) related to diameter
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy according to EN ISO 4064-1 (OIML R49) class 2
- communication RS 485, electrical outputs



### FLONET FN50xx.1

- for application mainly in water industry, for measurement of heat/cold
- flow-rate and volume measurement of conductive liquids for heat and cold measurement (blind version)
- dimensions DN20 to DN800 (3/4" to 32")
- maximum pressure 40 bar (600psi) related to diameter
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy according to EN1434 (OIML R 75), class 2
- pulse electrical output



### FLONET FH30xx

- for application mainly in water industry
- flow-rate and volume measurement of conductive liquids
- dimensions DN15 to DN1200 (3/4" to 48")
- maximum pressure 40bar (600psi) related to diameter
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy according to EN ISO 4064-1 (OIML R 49) class 2
- communication MODBUS RTU, electrical outputs



### FLONEX FXx11x

- for application in hazardous environment
- flow-rate and volume measurement of conductive liquids
- dimensions DN15 to DN300 (1/2" to 12")
- maximum pressure 40bar (150psi) related to diameter
- ambient temperature max. range -35°C to +60°C (-31°F to 140°F) depending on temperature class: T3 to T6
- measurement accuracy according to EN ISO 4064-1 (OIML R 49) class 2
- communication MODBUS RTU, electrical outputs
- ATEX / IEC approval II 2G Ex db eb ib [ib] IIB T6...T3 Gb  
II 2D Ex tb IIIC T80°C...T155°C Db





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## BATTERY POWERED ULTRASONIC FLOW METERS



### FLOMIC FL503x and FLOMIC FL505x

- for application in water and light industry
- flow-rate, volume and pressure measurement of liquids
- one and dual beam version, dimensions DN32 to DN300 (1 1/4" to 12")
- water pressure class MAP 16 or MAP 40 (related to diameter)
- flow-rate sampling period 1s
- storage of measured dates
- measurement accuracy according to EN ISO 4064-1 (OIML R 49) class 2
- communication USB, RS 232, GSM, electrical outputs
- compact or remote version, protection class IP68



### FLOMIC FL3085

- for application in water industry
- flow-rate and volume measurement in water supply networks of big dimensions
- one beam version, DN200 to DN1200 (8" to 48")
- maximum pressure 25bar (600psi) related to diameter
- maximum temperature of measured water 150°C (302°F)
- measurement accuracy according to EN ISO 4064-1 (OIML R 49) class 2
- storage of measured dates
- communication GSM, optical interface, electrical outputs



### FLOMIC FL3005

- for application in water industry
- flow-rate and volume measurement in water supply networks of big dimensions with direct assembly
- one beam version, DN200 to DN2000 (8" to 80")
- maximum pressure 40bar (600psi)
- maximum temperature of measured water 150°C (302°F)
- accuracy of measurement  $\pm 2\%$  by theoretical calibration
- storage of measured dates
- communication GSM, optical interface, electrical outputs

## BATTERY POWERED ULTRASONIC WATER METERS

MID Certified



### FLOMIC FL502x and FLOMIC FL504x

- for application in water industry
- flow-rate, volume and pressure measurement in water supply networks, detection of water leakages
- one and dual beam version, dimensions DN32 to DN200 (1 1/4" to 8")
- water pressure class MAP 16
- flow-rate sampling period 1s
- storage of measured dates
- measurement accuracy according to EN ISO 4064-1 (OIML R 49) class 2
- communication USB, RS 232, GSM, electrical outputs
- compact or remote version, protection class IP68



## ULTRASONIC FLOW METERS

MID Certified



### SONOELIS SE404x and SONOELIS SE406x

- for application in energy and light industry
- flow-rate and volume measurement electrically conductive and non-conductive liquids
- one and dual beam version, dimensions DN32 to DN300 (1 1/4" to 12")
- maximum pressure 40bar (600psi) related to diameter
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy according to EN ISO 4064-1 (OIML R 49), EN1434 (OIML R 75) class 2
- communication RS 485, electrical outputs

MID Certified



### SONOELIS SE404x.1 and SONOELIS SE406x.1

- for application in energy, light and heavy industry
- flow-rate and volume measurement electrically conductive and non-conductive liquids
- one and dual beam version, dimensions DN32 to DN300 (1 1/4" to 12")
- maximum pressure 40bar (600psi) related to diameter
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy according to EN ISO 4064-1 (OIML R 49), EN1434 (OIML R 75) class 2
- communication RS 485, electrical outputs

MID Certified



### SONOELIS SE401x and SONOELIS SE402x

- for application in energy and light industry
- flow-rate and volume measurement of water of big dimensions
- one and dual beam version,
- dimensions DN200 to DN1200 (8" to 48")
- maximum pressure 40bar (600psi) related to diameter
- maximum temperature of measured water 150°C (302°F)
- measurement accuracy according to EN ISO 4064-1 (OIML R 49), EN 1434 (OIML R 75) class 2
- communication RS 485, electrical outputs

MID Certified

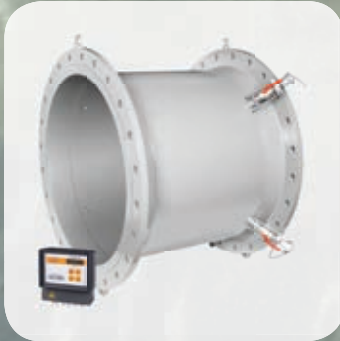


### SONOELIS SE401x.1 and SONOELIS SE402x.1

- for application in energy, light and heavy industry
- flow-rate and volume measurement of water of big dimensions
- one and dual beam version
- dimensions DN200 to DN1200 (8" to 48")
- maximum pressure 40bar (600psi) related to diameter
- maximum temperature of measured water 150°C (302°F)
- measurement accuracy according to EN ISO 4064-1 (OIML R 49), EN 1434 (OIML R 75) class 2
- communication RS 485, electrical outputs



## FLOW METERS FOR SPECIAL APPLICATIONS



### SONOELIS SE401x.xRP and SONOELIS SE402x.xRP

- for application in different fields of industries with request of transducers changing during operation
- flow-rate, volume measurement of conductive and non-conductive clean liquids in dimensions DN400 to DN1200 (12" to 48")
- maximum pressure 10 bar (150psi) related to diameter
- replaceable probes for flooded pipes
- maximum temperature of measured medium 100°C (212°F)
- measurement accuracy according to EN ISO 4064-1 (OIML R 49) class 2
- communication RS 485, electrical outputs



### SONOELIS SE4015.xT

- for application in energy for measurement of feeding water to boilers
- flow-rate, volume measurement of water for high pressure in piping
- dimensions DN80 to DN200 (3" to 8")
- maximum pressure 240 bar (3500psi) related to diameter
- one beam version
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy  $\pm 1\%$  for velocity of liquid  $v > 1\text{m/s}$
- communication RS 485, electrical outputs



### SONOELIS SE804x.x and SONOELIS SE806x.x

- for application in water, energy, light and heavy industry
- flow-rate, volume measurement of water of big dimensions with direct assembly
- one and dual beam version
- dimensions DN200 to DN1200 (8" to 48")
- maximum pressure 40 bar (600psi) related to diameter
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy  $\pm 2\%$  one beam,  $\pm 1\%$  dual beam
- communication RS 485, electrical outputs



### FLONET FS10xx

- for application in water, energy, light and heavy industry
- flow-rate and volume measurement of conductive abrasive liquids and mixtures
- dimensions DN100 to DN200 (4" to 8") – wafer
- dimensions DN250 to DN450 (10" to 18") – flanges
- maximum pressure 16 bar (300psi) related to diameter
- maximum temperature of measured medium 150°C (302°F)
- accuracy of measurement  $\pm 1\%$
- communication Hart, electrical outputs



## HEAT/COLD METERS

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### ELISTHERM ET3020.x3

- measurement of absolute heat and cold energy delivered or consumed in closed heating/cooling systems
- dimensions DN32 to DN300 (1 1/4" to 12")
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy according to EN 1434 (OIML R75) class 2
- communication M-Bus, electrical outputs

MID Certified



### ELISTHERM ET3020.x7

- measurement of absolute heat and cold energy delivered or consumed in closed heating/cooling systems
- dimensions DN200 to DN1200 (8" to 48")
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy according to EN 1434 (OIML R75) class 2
- communication M-bus, electrical outputs



### ELISTHERM ET3010.0

- measurement of absolute heat and cold energy delivered or consumed in closed heating/cooling systems
- dimensions DN20 to DN500 (3/4" to 20")
- maximum temperature of measured medium 150°C (302°F)
- measurement accuracy according to EN 1434 (OIML R75) class 2
- communication M-Bus, electrical outputs



# CALIBRATION AND METROLOGICAL VERIFICATION OF FLOW METERS OF LIQUIDS



TEST EQUIPMENT OF FLOW METERS  
FOR DIMENSIONS DN 25 ÷ DN 200

TEST EQUIPMENT OF FLOW METERS  
FOR DIMENSIONS DN 32 ÷ DN 800



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## COMPANY HISTORY

1990 – establishment of ELIS PLZEŇ cooperative society  
1991 – transformation to ELIS PLZEŇ Ltd.  
1997 – transformation to ELIS PLZEŇ joint stock company



## PRODUCTION PROGRAM AND SERVICES EVOLUTION

- 1991 – 1993 the introduction of the production of heat meters to water and steam
  - The installation and launching of the heat meter test bench for Metrological verification and calibration
- 1995 – Introduction of ultrasonic flow meter's production
- 1998 – Introduction of ultrasonic flow meter's production
  - Installation and launching of flow meter's test rig for metrological verification and calibration, dimension DN25 to DN150 (1" to 6")
- 2002 – Installation and launching of flow meter's test rig for metrological verification and calibration, dimension DN15 to DN40 (1/2" to 1 1/2")
  - Introduction of ultrasonic flow meter's production specially designed for diesel engines and boilers
- 2003 – Introduction of ultrasonic battery supplied water meter's production
- 2005 – Company certification ISO 9001
- 2006 – Enlargement of testing center for new test rigs for metrological verification and calibration of flow meters, calorimetric counters for heat meters and temperature sensors
  - New ultrasonic flow meter battery supply for big dimension DN200 to DN2000 (8" to 80") launched
  - New high pressure ultrasonic flow meters launched up to 160 bar (up to 2320 psi)
- 2007 – New ultrasonic level meters LEVELIS launched
- 2009 – New ultrasonic water and flow meters with battery supply
  - with possibility of remote data transfer
- 2010 – new ultrasonic heat/cold meters for big dimension up to DN1200 (48")
- 2011 – Company certified according to MID
  - Enlargement of testing centre for new test rig for metrological verification and calibration of flow meters up to DN800 (32")
- 2015 – Certification for production flow meters for hazardous environment with ATEX
- 2016 – Certification for production of sensors for flow meters in compliance PED, module H, Ultrasonic flow meters SONOELIS certified acc. to MID, module B
- 2017 – Testing center for flow meter certified according to MID, module D
- 2019 – IEC Ex certification of production

