

DOMINO®

Measurement, Dosing / Special fluids

DOMINO®

Flow meters for chemical liquids DN 15 - 50

Flow measurement of liquids in chemical, pharmaceutical, cosmetic and other industries. Batching and filling operations.

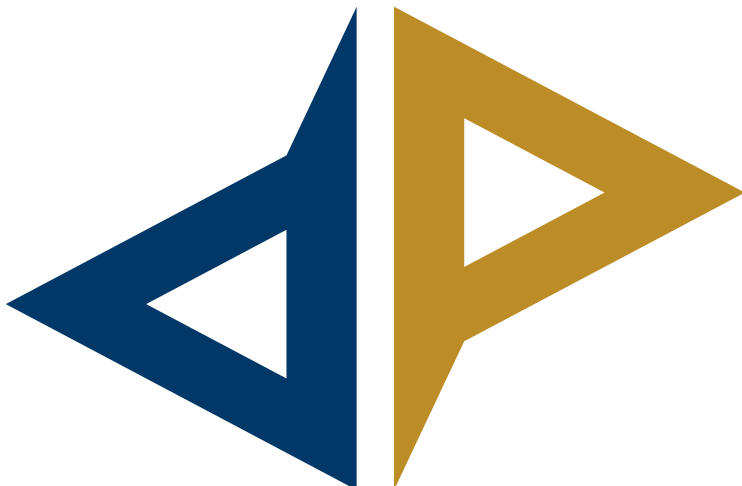


Features:

- » Product versions for safe areas or for hazardous areas (ATEX)
- » Modular products with wide range of flow
- » Electronic batching controls

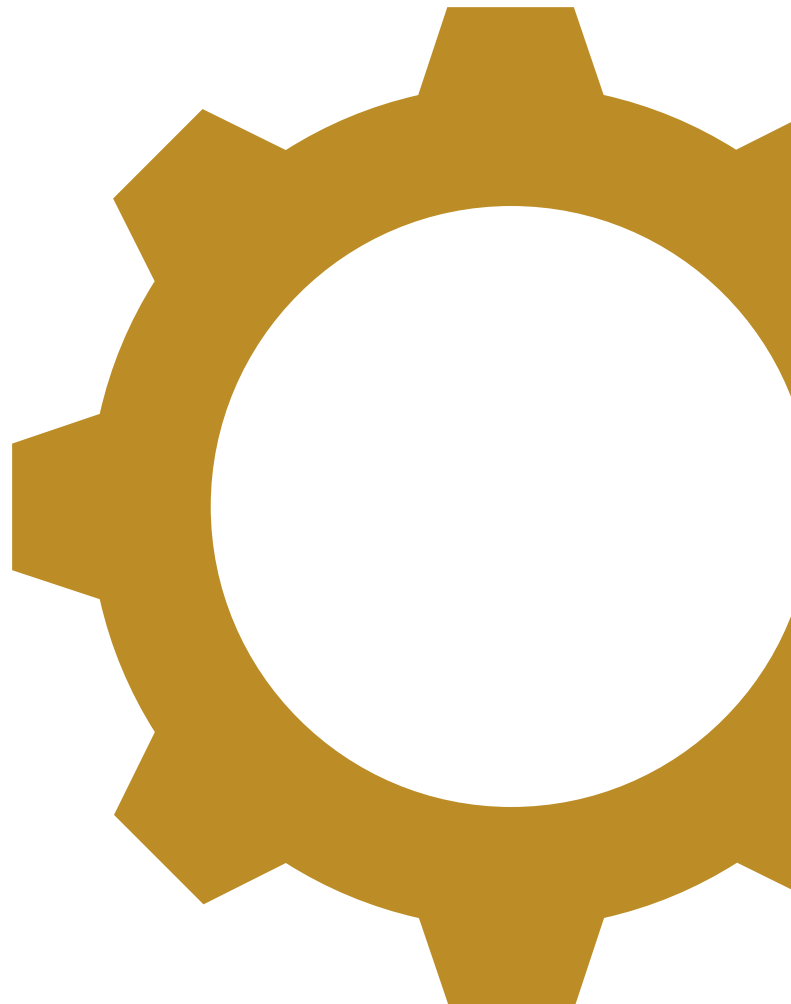
Benefits:

- » Highly flexible mounting with least space requirements
- » Suitable for any type of liquids, even very aggressive
- » Flow disturbances do not influence proper operation and accuracy
- » Long life with low maintenance



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INTRODUCTION

Thank you for your decision to work with Aquametro Oil & Marine Flow Measurement Products. This technical specification describes the installation, commissioning and use of DOMINO® flow meters. For additional information please contact your local sales agent at: www.aquametro-oil-marine.com.

Liability Disclaimer

The manufacturer cannot monitor the compliance to this manual as well as the conditions and methods during the installation, operation, usage and maintenance of the flow meter. Improper installation can cause damage and endanger people. Therefore, we assume no responsibility and liability for losses, damage or costs that result due to incorrect installation, improper operation, usage and maintenance or in any manner associated therewith. Similarly, we assume no responsibility for patent right or other right infringements of third parties caused by usage of this flow meter. The manufacturer reserves the right, without prior notification, to make modifications concerning the product, technical data or installation and operating manual.

Safety precautions

DOMINO® flow meters must only be used for their intended purpose and comply with local and international safety regulations. All documentation is to be followed exactly. None of the information stated here or elsewhere releases planners, installers and operators from their own careful and comprehensive assessment of the respective plant configuration in terms of functional capability and operational safety.

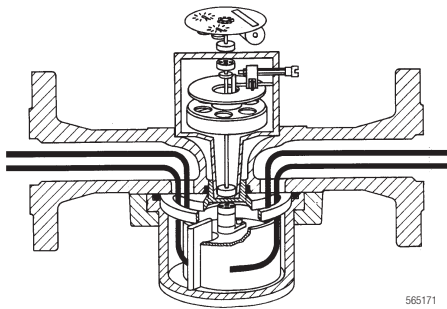
- » Local applicable working regulations must be complied with, during all work on the plant and / or ship.
- » All safety, installation and operation instructions as described in this manual must be followed.
- » The flow meters are sensitive measuring instruments and should be treated carefully.



OPERATING PRINCIPLE

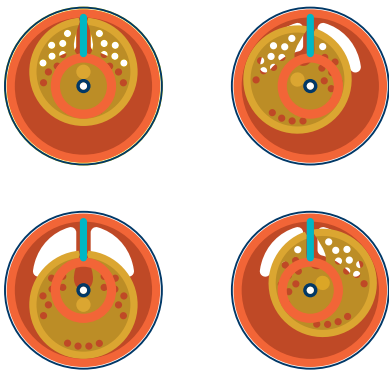
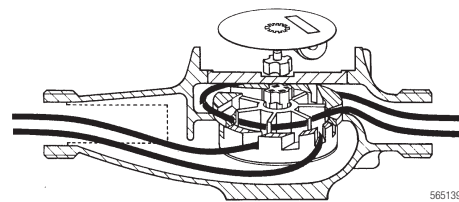
ARD range

- » Works on the volumetric principle with rotary pistons
- » Wide measuring range with high precision
- » Suitable for high viscosities
- » Insensitive to flow disturbances
- » No power supply needed - except VZF II electronic module



AMD and PMD series

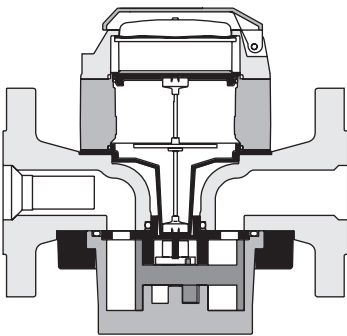
- » Works on the velocity measuring principle with multi-jet vane wheel
- » Extremely wide measuring range with good accuracy
- » Largely insensitive to slight impurities in liquid media
- » Insensitive to flow disturbances
- » No power supply needed
- » Mainly used for viscosities up to 4 cst



DESIGN FEATURES

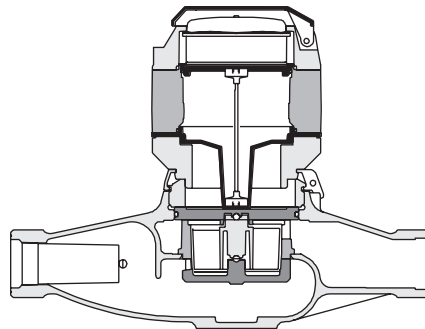
ARD range

- » The only moving parts in contact with the liquid medium are the rotary piston, guide roller, separating plate and the driver. The hydraulic measuring module is completely isolated from the roller register, and signals are transmitted magnetically through the sealed cover of the measuring chamber.
- » For optimal readability, the roller register can be swivelled through 360°, on versions with RV pulser and VFZ II in steps of 90°.



AMD and PMD series

- » The only moving part in contact with the liquid medium is the vane-wheel. In AMD models this is mounted between PTFE or graphite bearings, and in PMD models on ruby bearings. This ensures years of easy running and high precision, long life and excellent long-term stability of the measuring characteristic.
- » The hydraulic measuring module is completely isolated from the roller register, and signals are transmitted magnetically through the sealed cover of the measuring chamber.
- » For optimal readability, the roller register can be swivelled through 360°.



APPLICATIONS

- » ARD rotary piston flow meters for pure chemical liquids of various types
- » AMD vane wheel flow meters for chemical liquids
- » PMD vane wheel flow meters for water (in particular for dosing)

Selection of commonly measured liquids:

Acetic acid

Acetone
Animal fats
Ammonium hydroxide, ammonia solution

Butyl acetate, acetic butyl ester

Chloroform, trichloromethane
Citric acid

Diethylene glycol

Distilled water

Ethyl acetate, acetic ether, acetic ester

Ethyl alcohol, alcohol, ethanol
Ethyl ethylene, ethylene, diethyl ethylene
Ethylene glycol

Formaldehyde solution

Formic acid

Glycerine

Hexine

Hydrofluoric acid
Hydrogen peroxide, hydrogen superoxide

Isopropyl ether, di-isopropyl ether

Isopropyl alcohol, propyl alcohol

Kerosene, petroleum

Liquid ammonia

Liquid bromium

Liquid butane

Magnesium sulphate

Methanol, methyl alcohol
Methylene chloride, dichloromethylene
Methyl ethyl ketone
Molasses (without urea)

Nitric acid

Paraffin

Perchloroethylene, tetrachloroethylene
Phosphoric acid
Potassium hydroxide, caustic potash
Propionic acid
Prussic acid
Pure benzene

Sodium chloride solution, brine

Sodium hydroxide, caustic soda solution
Sulfocarbonic acid
Sulphuric acid

Tar, pitch

Tetrachloromethane, carbon tetrachloride
Toluene
Trichloroethylene (dry)

Vegetable oils

SYSTEM OVERVIEW

Meter ancillaries

- » display in volumetric units (liter or m³)
- » with pulser, roller counter or for batching devices

RW

Roller register

- » local totalization

RV

Roller register with integrated reed pulser

- » local totalization
- » pulser for remote totalizing
- » not for use in hazardous areas

IN

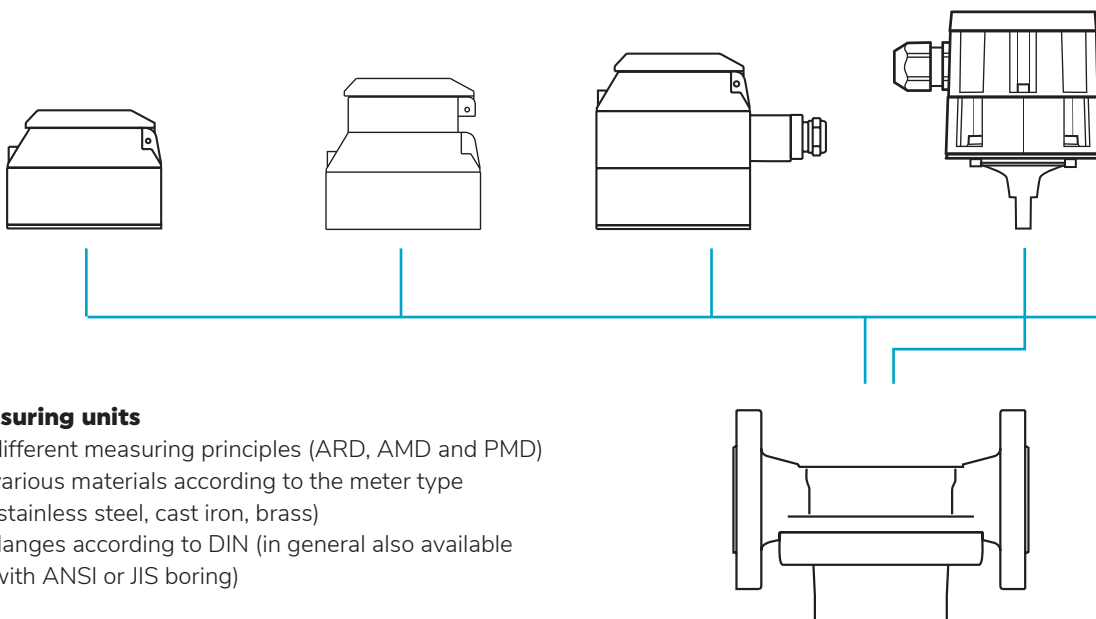
Inductive pulser for industrial control systems

- » to IEC 60947-5-6
- » 2 different resolutions
- » for hazardous location Zone 1 (ATEX version)
- » roller register

VZF II

Display unit with

- » 1 analog and 2 digital outputs
- » local totalization
- » pulser for remote totalization
- » not for use in hazardous areas
- » only for ARD type



Measuring units

- » different measuring principles (ARD, AMD and PMD)
- » various materials according to the meter type (stainless steel, cast iron, brass)
- » flanges according to DIN (in general also available with ANSI or JIS boring)

ARD rotary piston meters for chemical liquids

| | |
|------------------|-----------------------|
| Nominal diameter | 15, 20, 25, 40, 50 mm |
| Nominal pressure | 16, 25, 40 bar |
| Temperature | 40, 130, 180 °C |
| Flow rate | 30 - 30'000 l/h |

Accessories

- » batching devices for manual, semi-automatic and automatic control

INA module

Inductive pulser for industrial control systems

- » to IEC 60947-5-6
- » high resolution for analogue signal generation or input to electronic batching controls
- » for hazardous location Zone 1 (ATEX version)
- » optional roller register

INA module

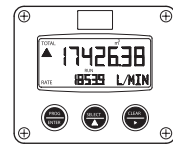
Inductive pulser for electronic batching units



For split mounting

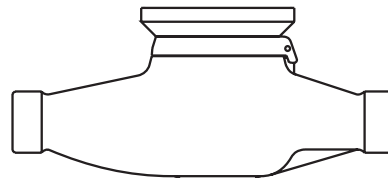
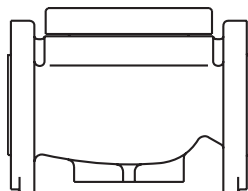
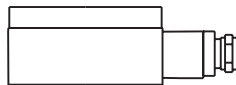
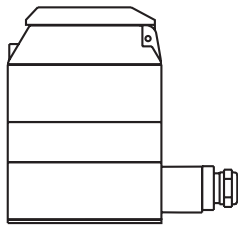
INA module

Inductive pulser for electronic batching units



MS-KP

Mounting set for compact mounting



AMD vane wheel meters for chemical liquids

Nominal diameter 25, 40 mm
 Nominal pressure 16, 25 bar
 Temperature 90, 180 °C
 Flow rate 140 - 12'000 l/h

PMD vane wheel meters for cold and hot water

Nominal diameter 25, 40 mm
 Nominal pressure 16 bar
 Temperature 90 °C
 Flow rate 140 - 20'000 l/h



TECHNICAL SPECIFICATIONS

Technical data DOMINO® ARD DN 15 - 50 Rotary piston flow meters



| DOMINO® ARD | | | Meter DN size | | | | |
|-----------------------------------------------|--------------------------------------|-----------------|----------------|------------|-------------|-------------|--------------|
| Nominal diameter | | DN mm | 15 | 20 | 25 | 40 | 50 |
| | | inch | 1/2 | 3/4 | 1 | 1 1/2 | - |
| Installation length | | mm | 165 | 165 | 190 | 300 | 350 |
| Connection thread on meter | | inch | 3/4 | 1 | 1 1/4 | 2 | - |
| Nominal pressure threaded ends | | | | | | | |
| ARD 1000 | PN | bar | 16 | 16 | 16 | 16 | - |
| Nominal pressure flanges | | | | | | | |
| ARD 1000 | PN | bar | 25 | 25 | 25 | 25 | 25 |
| ARD 2000 | PN | bar | 40 | 40 | 40 | 40 | 40 |
| ARD 3000 | PN | bar | 25 | 25 | 25 | 25 | 25 |
| Max. medium temperature | T _{max} | °C | 40 / 130 / 180 | | | | |
| Maximum flow rate | Q _{max} ³⁾ | l/h | 400 | 1500 | 3000 | 9000 | 30000 |
| Flow in batching mode | Q _{ch} | l/h | 320 | 1200 | 2400 | 7200 | 24000 |
| Continuous flow rate | Q_{cont}¹⁾ | l/h | 200 | 750 | 1500 | 4500 | 15000 |
| Minimum flow rate | Q _{min} ²⁾ | l/h | 30 | 60 | 150 | 450 | 1500 |
| Approx. starting flow rate | Q _{st} ²⁾ | l/h | 6 | 12 | 30 | 90 | 300 |
| Max. permissible error of actual value | | | ±0.5 % | ±0.5 % | ±0.5 % | ±0.5 % | ±0.5 % |
| Repeatability | | | ±0.1 % | ±0.1 % | ±0.1 % | ±0.1 % | ±0.1 % |
| Measuring chamber volume | | cm ³ | 12 | 36 | 100 | 330 | 1200 |
| Safety filter mesh size | | mm | 0.400 | 0.400 | 0.400 | 0.800 | 0.800 |
| Dirt trap filter mesh size | | mm | 0.100 | 0.100 | 0.250 | 0.250 | 0.250 |
| Weight with threaded ends PN 16 ⁴⁾ | | kg | 2.2 | 2.5 | 4.2 | 17.3 | - |
| Weight with flanges PN 25 | | kg | 3.8 | 4.5 | 7.5 | 20.3 | 41.0 |
| Weight with flanges PN 40 | | kg | 4.4 | 5.5 | 7.8 | 20.5 | 42.0 |

1) Flow rates for fuels are higher. For particular data see Technical Documentation CONTOIL® fuel oil meter.

2) Q_{min} and starting flow rates are valid for material combination: brass housing / aluminum pistons for fuel oil. Q_{min} for other material combination see following table „Measuring range as a function of material combination“.

3) Manufacturer's specification, valid for the reference conditions as specified under reference conditions. Do not use this value for the design.

4) Weight without couplings.

Special versions or different flange-standards on request.

Measuring range as a function of material combination

Qmin* in % of Qmax with measuring error limits ± 0.5 %.

| Type | Measuring chamber | Rotary piston Aluminum | Graphite | Stainless steel | PTFE |
|----------|-------------------|---------------------------|----------|-----------------|------|
| ARD 1000 | Brass | 5 % | 5 % | - | 10 % |
| ARD 2000 | Stainless steel | 5 % | 5 % | 10 % | 10 % |
| ARD 3000 | Stainless steel | 5 % | 5 % | 10 % | 10 % |

* Depending on the material combination piston to measuring chamber, the Qmin may change.

Measuring sensors and materials

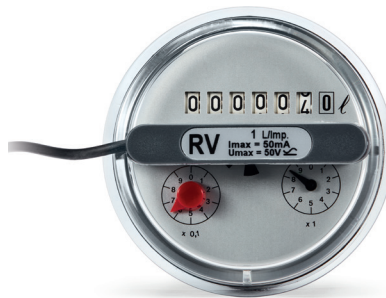
| Type | Component | Material |
|----------|-------------------|-----------------------------------------------------------------------------------------|
| ARD 1000 | Housing | Brass (threaded connections) or spherulitic cast iron (threaded or flanged connections) |
| | Housing finish | Enamelled yellow RAL 1007 |
| | Measuring chamber | Brass / PPS (130 °C) or brass / PTFE (180 °C) |
| | Seals | FPM (fluoroelastomer) |
| | Rotary pistons | Aluminum, graphite or PTFE |
| ARD 2000 | Housing | Spherulitic cast iron |
| | Housing finish | Enamelled yellow RAL 1007 |
| | Measuring chamber | Stainless steel* / PPS (130 °C) or stainless steel* / PTFE (180 °C) |
| | Seals | FPM or PTFE (fluoroelastomer or polytetrafluoroethylene) |
| | Rotary pistons | Aluminum, graphite, stainless steel* or PTFE |
| ARD 3000 | Housing | Stainless steel* |
| | Housing finish | Enamelled yellow RAL 1007 |
| | Measuring chamber | Stainless steel* / PTFE |
| | Seals | FPM or PTFE (fluoroelastomer or polytetrafluoroethylene) |
| | Rotary pistons | Graphite, stainless steel* or PTFE |

* Corrosion and acid-resistant steel (CrNiMo) to DIN 1.4408 / 1.4435 / 1.4404



Technical data DOMINO® ARD

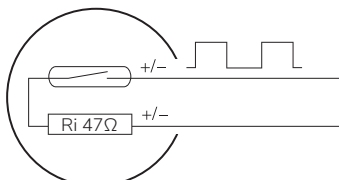
Mechanical display, pulsers RV, IN, INH, INA, INAH



| Mechanical display | Meter DN size | | | | | | |
|--------------------------------------------|-------------------------------------|-------|------|-------|-------|-------|--------|
| | Nominal diameter | DN mm | 15 | 20 | 25 | 40 | 50 |
| | | inch | 1/2 | 3/4 | 1 | 1 1/2 | 2 |
| Smallest readable amount | l | | 0.01 | 0.1 | 0.1 | 0.1 | 1 |
| Maximum registration capacity | m ³ | | 1000 | 10000 | 10000 | 10000 | 100000 |
| Registration time until overrun to zero at | Q _{cont} (m ³) | h | 2500 | 10000 | 5000 | 1667 | 5000 |

| RV: Reed pulser with decadic pulse values | | | | | | |
|-------------------------------------------|---------|---------------------------------------------------------------------------|--------------|--------------|--------------|--------------|
| Ambient temperature | °C | -10 to +70 | | | | |
| Switching element | | Reed contact | | | | |
| Switching voltage max. | VDC/VAC | 48 | | | | |
| Switching current max. | mA | 50 (Ri 47Ω / 0.5 W) | | | | |
| Static current | | open contact | | | | |
| Switching power max. | W | 2 | | | | |
| On-time | % | 50 +/-10 | | | | |
| RV Reed | | DN 15 | DN 20 | DN 25 | DN 40 | DN 50 |
| | l/pulse | 0.1 | 1 | 1 | 1 | 10 |
| | l/pulse | 1 | - | - | 10 | 100 |
| Protection class | | IP 65 | | | | |
| Connection | | Permanent mounted cable, 3 m long, 2 x 0.14 mm ² cross section | | | | |
| No Ex installation possible! | | | | | | |

Functional diagram reed pulser



IN, INH, INA, INAH: Inductive pulser with decadic pulse values

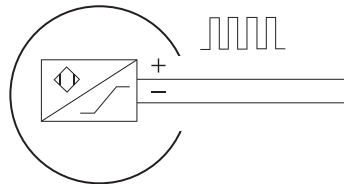
| | | | | | | | |
|---------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|
| Supply voltage | VDC | 5 - 25 | | | | | |
| Nominal voltage | VDC | 8.2 (R _i approx. 1 kΩ) | | | | | |
| Ambient temperature | °C | -10 to +70 | | | | | |
| Protection class | | IP 65 | | | | | |
| Switching element | | Slot initiator acc. to IEC 60947-5-6 (IN - NAMUR) | | | | | |
| Switching frequency | Hz | 0 to 3000 | | | | | |
| Residual ripple | | <5 % | | | | | |
| Switching current | mA | ≥3 (at 8.2 V, 1 kΩ) | | | | | |
| Static current zero | mA | ≤1 (at 8.2 V, 1 kΩ) | | | | | |
| Pulse values for remote transmitter | | ARD | DN 15 | DN 20 | DN 25 | DN 40 | DN 50 |
| IN (NAMUR) inductive (IEC 60947-5-6) | I/pulse | 0.01 | 0.01 | 0.1 | 0.1 | 1 | 1 |
| INH (NAMUR) inductive (IEC 60947-5-6) ¹⁾ | I/pulse | 0.1 | 0.1 | 1 | 1 | 10 | 10 |
| INA (NAMUR) inductive (IEC 60947-5-6) ^{1) 2)} | I/pulse | 0.0006 | 0.00185 | 0.005 | 0.017 | 0.06 | 0.06 |
| INAH (NAMUR) inductive (IEC 60947-5-6) ^{1) 2)} | I/pulse | 0.0006 | 0.00185 | 0.005 | 0.017 | 0.06 | 0.06 |
| Pulse frequency IN | Q _{max} | Hz | 11.111 | 41.667 | 8.333 | 25.000 | 8.333 |
| | Q _{min} | Hz | 0.278 | 0.833 | 0.208 | 0.625 | 0.208 |
| Pulse frequency INH | Q _{max} | Hz | 1.1111 | 4.1667 | 0.8333 | 2.5000 | 0.8333 |
| | Q _{min} | Hz | 0.0278 | 0.0833 | 0.0208 | 0.0625 | 0.0208 |
| Pulse frequency INA, INAH | Q _{max} | Hz | 185.185 | 225.225 | 166.167 | 147.059 | 138.899 |
| | Q _{min} | Hz | 4.630 | 4.505 | 4.167 | 3.676 | 3.472 |
| Connection | | Connection cable min. 2 x 0.35 mm ² and 5.5 - 13 mm external cable diameter on plug (Prefabricated cable available) | | | | | |

Pay attention to polarity when connecting the plug!

1) High temperature versions are designated with H (INH or INAH).

2) The exact pulse value is indicated on the meter. Since this value is not known before calibration, the connected unit must have an adaptable input.
Versions with 2 pulsers on request.

Functional diagram inductive sensor





Technical data

DOMINO® ARD

Electronic display VZF II



| Electronic display | | Meter DN size | | | | | |
|--------------------------------------------|-------------------------------------|----------------------------------------------------|---------------------------------|-----|----|-------|----|
| Nominal diameter | | DN mm | 15 | 20 | 25 | 40 | 50 |
| | | inch | 1/2 | 3/4 | 1 | 1 1/2 | 2 |
| Max. medium temperature | T _{max} | °C | 130, 180 | | | | |
| Max. environment temperature | | °C | -25 to +70 | | | | |
| Max. storage temperature | | °C | -25 to +85 | | | | |
| Max. storage humidity | rh _{max} | % rh | 95, non condensing | | | | |
| Protection class | | | IP 66 / IP 68 / IP 69 | | | | |
| Total volume / mass | | l, m ³ , G ¹⁾ , kg, t, lb | max. 3 decimals (dynamic) | | | | |
| Resettable volume / mass | | l, m ³ , G ¹⁾ , kg, t, lb | max. 3 decimals (dynamic) | | | | |
| Flow rate | | | max. 3 decimals (dynamic) | | | | |
| Smallest readable amount | | | 0.001 | | | | |
| Maximum registration capacity | | | 8 digits | | | | |
| Registration time until overrun to zero at | Q _{cont} (m ³) | | >100 years | | | | |
| Data preservation | | | by non-volatile memory (EEPROM) | | | | |

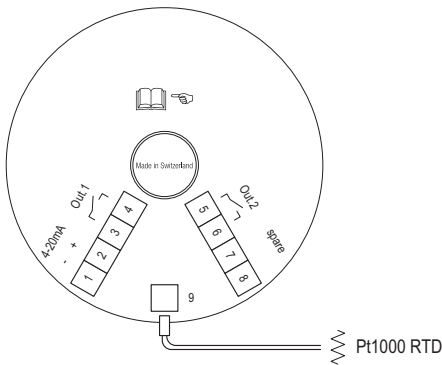
1) 1 US gallon corresponds to 3.785 liters.

| Outputs | | |
|---------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------|
| 3 (2 pulse / frequency, 1 analog 4 - 20 mA) | | freely selectable, totally independent of each other |
| Pulse output | | volume or mass pulse 0 - 200 pulse/sec. (50 % duty cycle) |
| Current 4 - 20 mA | | volume flow, mass flow or temperature signal |
| Frequency | Q _{min} , Q _{max} | volume flow, mass flow or temperature minimum, maximum and hysteresis parameterized |
| Limit switch | QLim _{max} , QLim _{min} | allows you to set an alert whenever predefined flow rates are exceeded (NC / NO) |
| Flow meter state switch | Alarm, Error | state and on/off parameterized (NC / NO) |



| Electronic | | |
|------------------------|-----|--------------------------------------------------------------------------|
| Power supply | VDC | 6 - 30 |
| Quiescent current zero | mA | 4 |
| Relais output | | |
| Switching element | | solid state relay (out1 & out2) |
| Resistance ON | Ω | ≤40 |
| Resistance OFF | MΩ | ≥10 |
| Max. Supplay voltage | VDC | ≤48 |
| Max. Switching current | mA | ≤50 |
| Pulse width | ms | 2 - 500 (dynamic) |
| Pulse frequency | Hz | 0 - 200 |
| Current output | | |
| Analog output | mA | 4 - 20 passive |
| Resolution | bit | 16 |
| Max. error | mA | ±0.2 |
| Update interval | s | <0.1 s |
| Maximum Load (RL) | Ω | 0 to 1116, depending on external supply voltage of the power supply unit |
| | | U-6 ———— Ω;(e.g.: 1116Ω@30V) 0.0215 |

Electronic counter DOMINO® VZF II



- 1 + 2 Power supply / output current loop (passive)
- 3 + 4 Output 1 (passive)
- 5 + 6 Output 2 (passive)
- 7 + 8 Spare
- 9 Temperature sensor Pt1000

Wire size for terminal 1 - 6 is:
0.75 - 1.5 mm² / 20 - 16 AWG

Factory setting of outputs

- Output 1: Volume pulses: 50 ms, 1 ltr/pulse (exception: DN 15 is set to 0.1 ltr/pulse)
- Output 2: Volume pulses: 50 ms, 1 ltr/pulse (exception: DN 15 is set to 0.1 ltr/pulse)
- Analog: Disabled (off)

Engineering notes

The maximum frequency is calculated with the following formula:

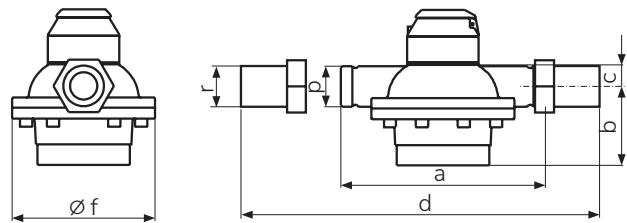
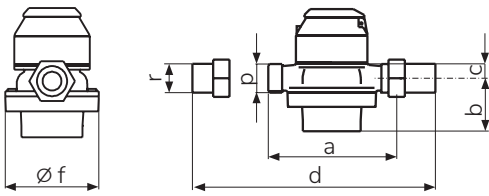
$$\frac{\text{max. flow rate in liters/hour}}{\text{pulse value in liters} \times 3600} = \text{frequency in Hz} \leq 200 \text{ Hz}$$

Dimensional drawings

All DOMINO® ARD 1000 with threaded ends are according to ISO 228-1.

DN 15, 20, 25: with threaded ends

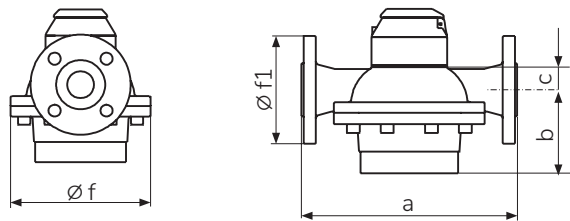
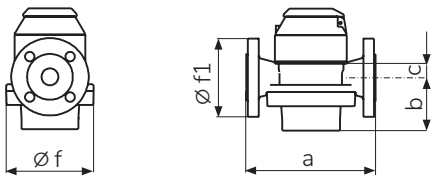
DN 40: with threaded ends



All DOMINO® ARD 1000, 2000 and 3000 with flanges are compatible to EN 1092-2, ASME B16.5 or JIS B2239.

DN 15, 20, 25: with flanges

DN 40, 50: with flanges



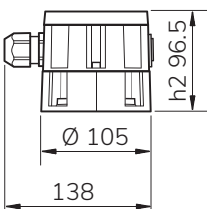
| DOMINO® | DN | a | b | c | d | $\varnothing f$ | $\varnothing f1$ | p | r |
|---------|----|-----|-----|----|-----|-----------------|------------------|----------|----------|
| ARD 15 | 15 | 165 | 42 | 17 | 240 | 105 | 95 | G 3/4" | G 1/2" |
| ARD 20 | 20 | 165 | 54 | 17 | 260 | 105 | 105 | G 1" | G 3/4" |
| ARD 25 | 25 | 190 | 78 | 21 | 305 | 130 | 115 | G 1 1/4" | G 1" |
| ARD 40 | 40 | 300 | 116 | 32 | 435 | 210 | 150 | G 2" | G 1 1/2" |
| ARD 50 | 50 | 350 | 166 | 38 | - | 280 | 165 | - | - |

Dimensions in mm

Dimensions of display and pulse units

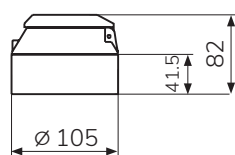
VZF II

Display unit
max. 180 °C



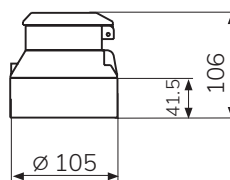
RW

roller register only
max. 180 °C

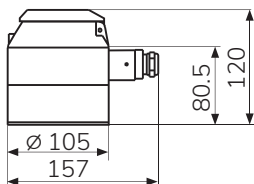


RV

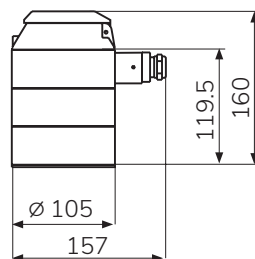
with integrated pulser (reed type)
max. 180 °C



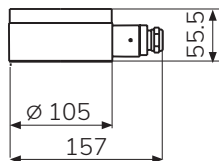
IN
max. 130 °C



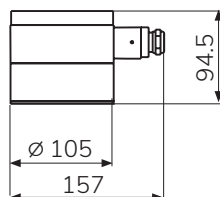
INH
max. 180 °C



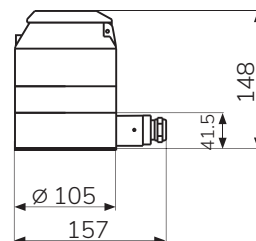
INA
without RW
(roller register)
max. 90 °C



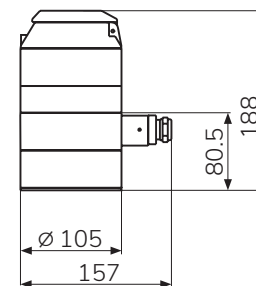
INAH
without RW
(roller register)
max. 180 °C



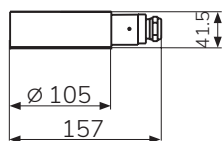
INA-RW
with RW
(roller register)
max. 90 °C



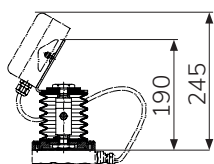
INAH-RW
with RW
(roller register)
max. 180 °C



INA - MS-KP



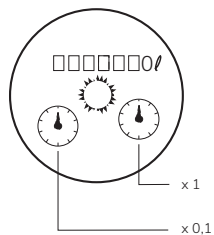
MS-KP
for compact mounting
with F-series



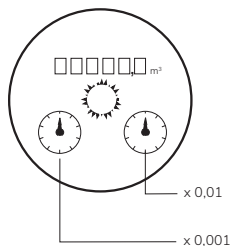
VZF II



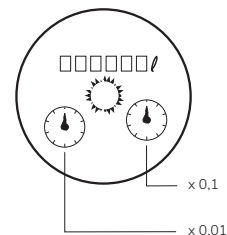
DN 20, 25, 40

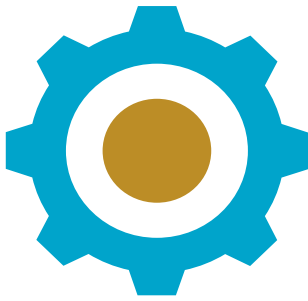


DN 50



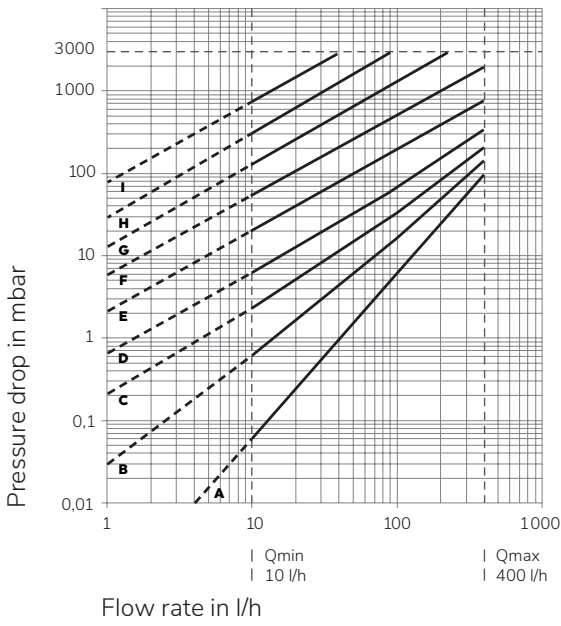
DN 15



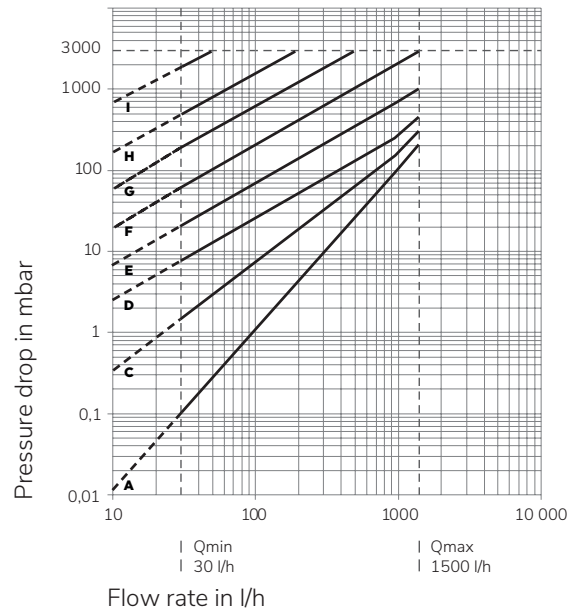


Pressure drop curves

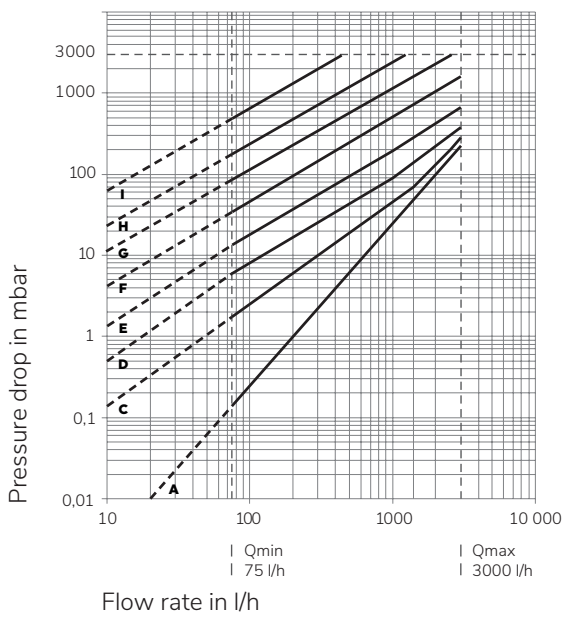
DN 15



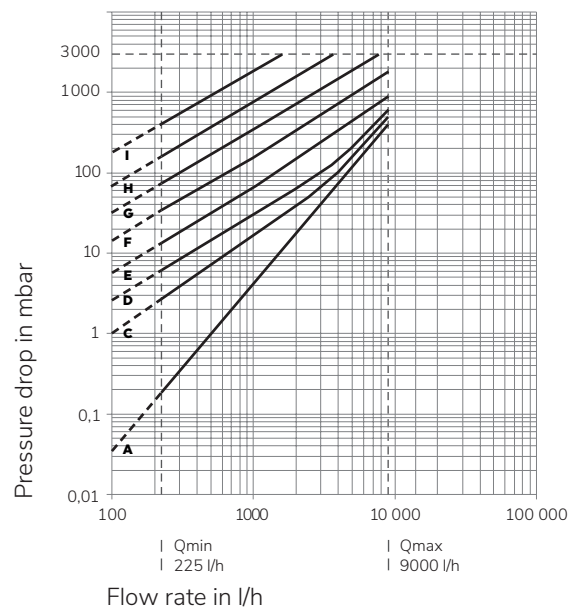
DN 20

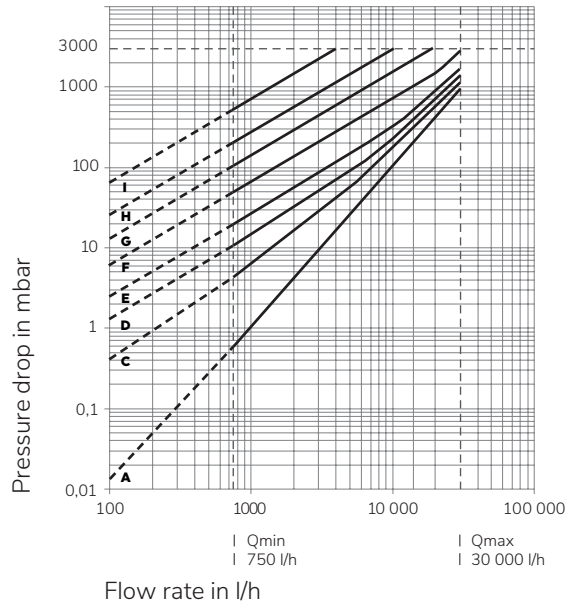


DN 25



DN 40



DN 50

Recommended pressure drop max. 1 bar
 Admissible pressure drop max. 3 bar

Viscosity diagrams:

A = 4,5 mPas
 B = 25 mPas
 C = 50 mPas
 D = 100 mPas
 E = 200 mPas
 F = 500 mPas
 G = 1000 mPas
 H = 2000 mPas
 I = 5000 mPas



Technical data

DOMINO® AMD DN 25 + 40

Vane wheel flow meters



| DOMINO® AMD | | Meter DN size | | |
|------------------------------------------------------|--------------------------------------|---------------|--------------|--------------|
| Nominal diameter | | DN mm | 25 | 40 |
| | | inch | 1 | 1 1/2 |
| Installation length | | mm | 165 | 300 |
| Nominal pressure flanges | PN | bar | 25 | 25 |
| Max. medium temperature | T _{max} | °C | 90 resp. 180 | |
| Maximum flow rate | Q _{max} | l/h | 5000 | 12000 |
| Continuous flow rate | Q_{cont}¹⁾ | l/h | 3500 | 10000 |
| Transitional flow rate | Q _t | l/h | 280 | 800 |
| Minimum flow rate | Q _{min} | l/h | 140 | 400 |
| Approx. starting flow rate | | l/h | 22 | 45 |
| Max. permissible error of actual value ¹⁾ | | | ±2.0 % | ±2.0 % |
| Repeatability | | | ±0.3 % | ±0.3 % |
| Safety filter mesh size | | mm | 2.5 | 2.5 |
| Weight | | kg | 7.20 | 14.20 |

1) ±5 % at lower end of measuring range between Q_{min} and Q_t.

Special versions with other flange holes on request

Measuring sensors and materials

| Component | Material |
|---------------------|---------------------------------|
| Housing | Stainless steel* |
| Housing finish | Enamelled yellow RAL 1007 |
| Measuring chamber | Stainless steel* |
| Seals | PTFE |
| Vane wheel bearings | PTFE (90 °C), graphite (180 °C) |

* Corrosion and acid-resistant steel (CrNiMo) to DIN 1.4408 / 1.4435 / 1.4404.



Technical data

DOMINO® AMD

Mechanical display, pulsers RV, IN and INA

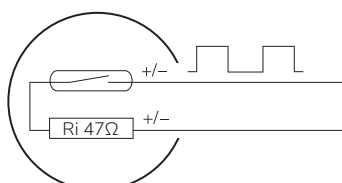


| Mechanical display | | Meter DN size | |
|--------------------------------------------------------------------------------|----------------|---------------|-----------|
| Nominal diameter | DN mm | 25 | 40 |
| | inch | 1 | 1 1/2 |
| Smallest readable amount | l | 0.1 | 0.1 |
| Maximum registration capacity | m ³ | 100000 | 100000 |
| Registration time until overrun to zero at Q _{cont} (m ³) | h | 28500 | 10000 |

| RV: Reed pulser with decadic pulse values | | | |
|-------------------------------------------|---------|---------------------------------------------------------------------------|--------------|
| Ambient temperature | °C | -10 to +70 | |
| Switching element | | Reed contact | |
| Switching voltage max. | VDC/VAC | 48 | |
| Switching current max. | mA | 50 (Ri 47Ω / 0.5 W) | |
| Static current | | open contact | |
| Switching power max. | W | 2 | |
| On-time | % | 50 +/- 10 | |
| RV Reed | | DN 25 | DN 40 |
| | l/pulse | 1 | 1 |
| Protection class | | IP 65 | |
| Connection | | Permanent mounted cable, 3 m long, 2 x 0.14 mm ² cross section | |

No Ex installation possible!

Functional diagram reed pulser

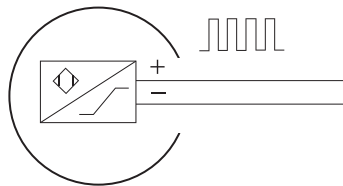


IN,INA: Inductive pulser with decadic pulse values

| | | | | |
|-----------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------|--------|
| Supply voltage | VDC | 5 - 25 | | |
| Nominal voltage | VDC | 8.2 (R _i approx. 1 kΩ) | | |
| Ambient temperature | °C | -10 to +70 | | |
| Protection class | | IP 65 | | |
| Switching element | | Slot initiator acc. to IEC 60947-5-6 (IN - NAMUR) | | |
| Switching frequency | Hz | 0 to 3000 | | |
| Residual ripple | | <5 % | | |
| Switching current | mA | ≥3 (at 8.2 V, 1 kΩ) | | |
| Static current zero | mA | ≤1 (at 8.2 V, 1 kΩ) | | |
| Pulse values for remote transmitter | AMD | DN 25 | DN 40 | |
| IN (NAMUR) inductive (IEC 60947-5-6) | I/pulse | 0.1 | 0.1 | |
| | I/pulse | 1 | 1 | |
| INA (NAMUR) inductive (IEC 60947-5-6) ¹⁾ | I/pulse | 0.01032 | 0.03956 | |
| Pulse frequency IN | Q _{max} | Hz | 13.889 | 33.333 |
| | Q _{min} | Hz | 0.389 | 1.111 |
| Pulse frequency INA | Q _{max} | Hz | 134.582 | 84.260 |
| | Q _{min} | Hz | 3.768 | 2.809 |
| Connection | | Connection cable min. 2 x 0.35 mm ² and 5.5 - 13 mm external cable diameter on plug (Prefabricated cable available) | | |

Pay attention to polarity when connecting the plug!

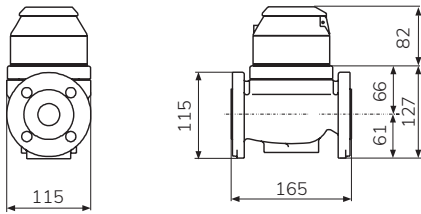
1) The exact pulse value is indicated on the meter. Since this value is not known before calibration, the connected unit must have an adaptable input.
Versions with 2 pulsers on request.

Functional diagram inductive sensor

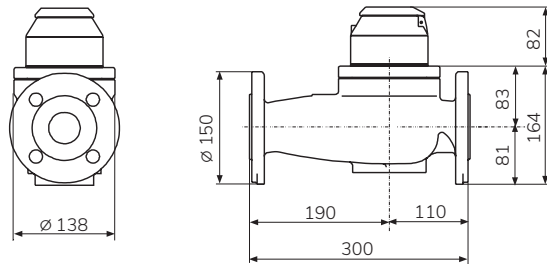
Dimensional drawings

All DOMINO® AMD with flanges are compatible to EN 1092-2.

DN 25



DN 40

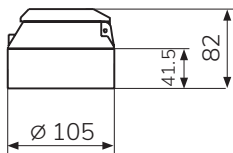


Dimensions in mm

Dimensions of display and pulse units

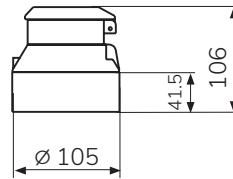
RW

roller register only
max. 180 °C



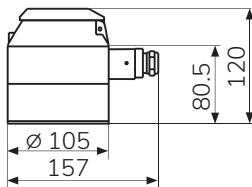
RV

with integrated pulser (reed type)
max. 180 °C



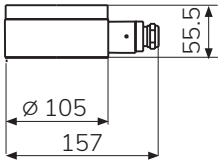
IN

max. 130 °C

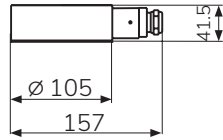


INA

without RW
(roller register)
max. 90 °C

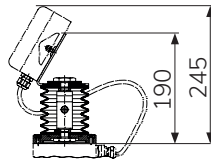


INA - MS-KP

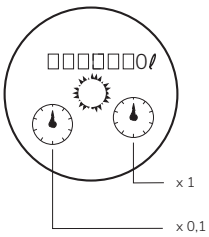


MS-KP

for compact mounting
with F-series

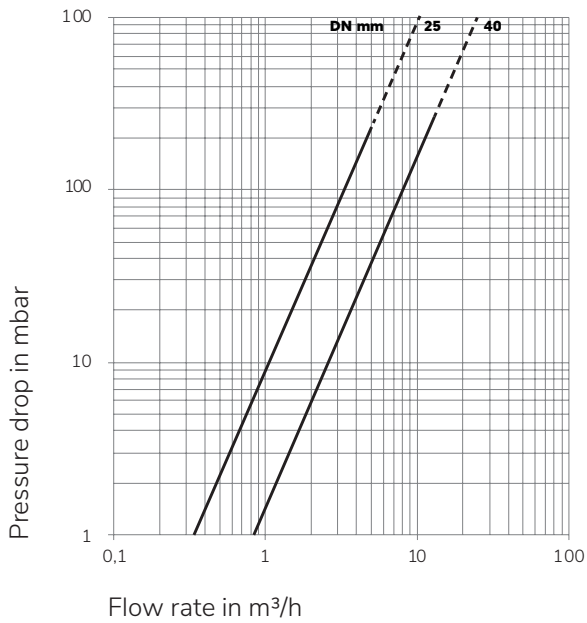


DN 20, 40



Pressure drop curves

DN 25, 40



Technical data

DOMINO® PMD DN 25 - 40

Vane wheel flow meters



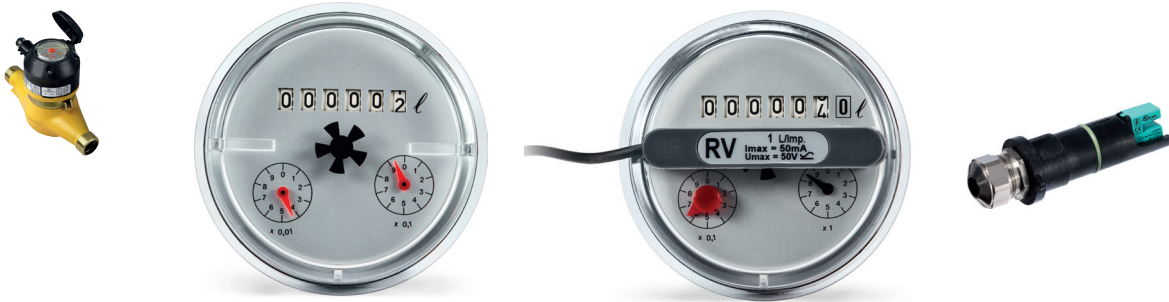
| DOMINO® PMD | | Meter DN size | |
|------------------------------------------------------|------------------------------------------|---------------|--------------|
| Nominal diameter | DN mm | 25 | 40 |
| | inch | 1 | 1 1/2 |
| Installation length | mm | 260 | 300 |
| Connection thread on meter | inch | 1 1/4 | 2 |
| Nominal pressure threaded ends | PN bar | 16 | 16 |
| Max. medium temperature | T _{max} °C | 90 | 90 |
| Maximum flow rate | Q _{max} l/h | 7000 | 20000 |
| Flow in batching mode | Q _{ch} l/h | | |
| Continuous flow rate | Q_{cont}¹⁾ l/h | 3500 | 10000 |
| Transitional flow rate | Q _t l/h | 280 | 800 |
| Minimum flow rate | Q _{min} l/h | 140 | 400 |
| Approx. starting flow rate | l/h | 22 | 45 |
| Max. permissible error of actual value ¹⁾ | | ±2.0 % | ±2.0 % |
| Repeatability | | ±0.3 % | ±0.3 % |
| Safety filter mesh size | mm | 1.5 | 2.5 |
| Housing thread | inch | 1 1/4 | 2 |
| Screw connection thread | inch | 1 | 1 1/2 |
| Weight without screw connections | kg | 4.10 | 6.50 |

1) ±5 % at lower end of measuring range between Q_{min} and Q_t.

Measuring sensors and materials

| Component | Material |
|---------------------|----------------------------------|
| Housing | Brass |
| Housing finish | Enamelled yellow RAL 1007 |
| Measuring unit | PPO plastic |
| Seals | EPDM (ethylene propylene) |
| Vane wheel bearings | Plastic and synthetic ruby balls |

Technical data
 DOMINO® PMD
 Mechanical display, pulsers RV, IN and INA



| Mechanical display | Meter DN size | | | |
|--------------------------------------------|-------------------------------------|-------|--------|--------|
| | Nominal diameter | DN mm | 25 | 40 |
| | | inch | 1 | 1 1/2 |
| Smallest readable amount | l | | 0.1 | 0.1 |
| Maximum registration capacity | m ³ | | 100000 | 100000 |
| Registration time until overrun to zero at | Q _{cont} (m ³) | h | 28500 | 10000 |



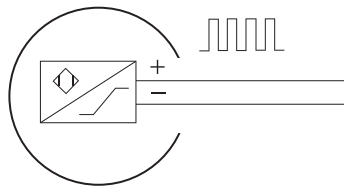
IN, INA: Inductive pulser with decadic pulse values

| | | | | |
|-----------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------|---------|
| Supply voltage | VDC | 5 - 25 | | |
| Nominal voltage | VDC | 8.2 (R_i approx. 1 k Ω) | | |
| Ambient temperature | °C | -10 to +70 | | |
| Protection class | | IP 65 | | |
| Switching element | | Slot initiator acc. to IEC 60947-5-6 (IN - NAMUR) | | |
| Switching frequency | Hz | 0 to 3000 | | |
| Residual ripple | | <5 % | | |
| Switching current | mA | ≥ 3 (at 8.2 V, 1 k Ω) | | |
| Static current zero | mA | ≤ 1 (at 8.2 V, 1 k Ω) | | |
| Pulse values for remote transmitter | PMD | DN 25 | DN 40 | |
| IN (NAMUR) inductive (IEC 60947-5-6) | I/pulse | 0.1 | 0.1 | |
| | I/pulse | 1 | 1 | |
| INA (NAMUR) inductive (IEC 60947-5-6) ¹⁾ | I/pulse | 0.01434 | 0.04990 | |
| Pulse frequency IN | Q_{max} | Hz | 19.444 | 55.555 |
| | Q_{min} | Hz | 0.389 | 2.227 |
| Pulse frequency INA | Q_{max} | Hz | 135.596 | 111.334 |
| | Q_{min} | Hz | 2.712 | 2.227 |
| Connection | | Connection cable min. 2 x 0.35 mm ² and 5.5 - 13 mm external cable diameter on plug (Prefabricated cable available) | | |

Pay attention to polarity when connecting the plug!

1) The exact pulse value is indicated on the meter. Since this value is not known before calibration, the connected unit must have an adaptable input.
Versions with 2 pulsers on request.

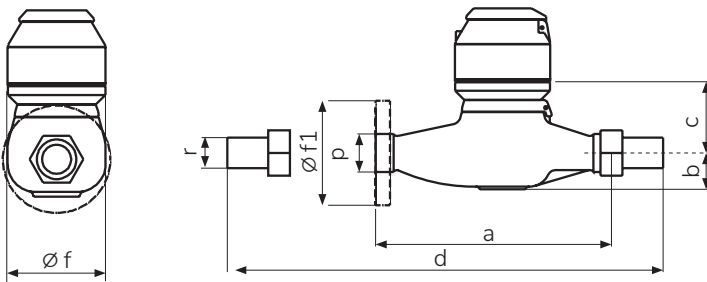
Functional diagram inductive sensor



Dimensional drawings

All DOMINO® PMD with threaded ends are compatible to ISO 228-1.

DN 25 - 40

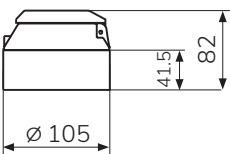


| DOMINO® | DN | a | b | c | d | Øf | Øf1 | p | r |
|---------|----|-----|----|----|-----|-----|-----|-------|-------|
| PMD 25 | 25 | 260 | 40 | 83 | 375 | 105 | 115 | G 1¼" | G 1" |
| PMD 40 | 40 | 300 | 60 | 91 | 435 | 139 | 150 | G 2" | G 1½" |

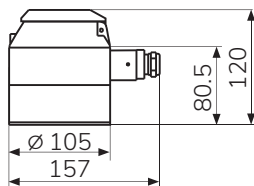
Dimensions in mm

Dimensions of display and pulse units

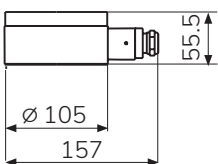
RW
roller register only
max. 180 °C



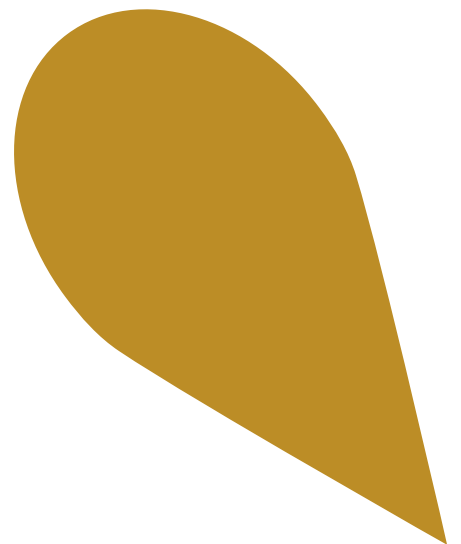
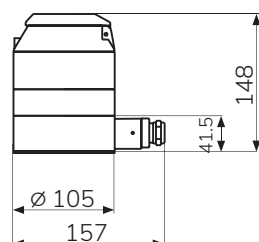
IN
max. 130 °C



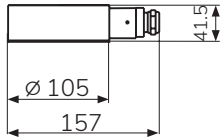
IN
without RW
(roller register)
max. 90 °C



IN-RW
with RW
(roller register)
max. 90 °C

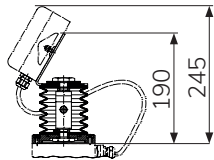


INA - MS-KP

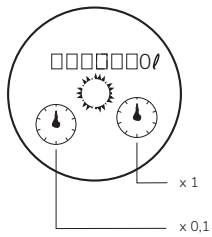


MS-KP

for compact mounting with F-series

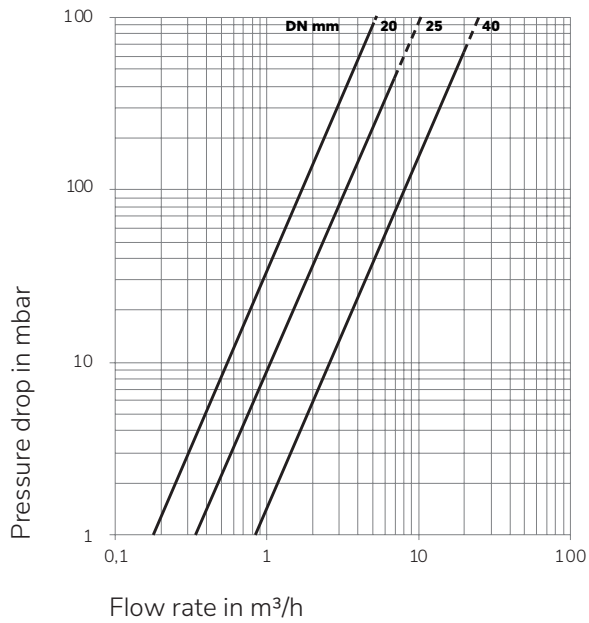


DN 25, 40



Pressure drop curves

DN 25, 40



ORDERING DETAILS

ARD sensors: Type designations and order numbers

(for standard versions; special versions on request)

ARD 1000 measuring module

| Measuring chamber | Seal | Rotary piston | PN bar | Tmax °C | Type designation | Art. No. | | | | |
|----------------------------------------------------------------|------|---------------|--------|---------|------------------|----------|-------|-------|-------|-------|
| | | | | | | DN 15 | DN 20 | DN 25 | DN 40 | DN 50 |
| Brass housing with threaded connections | | | | | | | | | | |
| Brass / PPS | FPM | Aluminum | 16 | 130 | ARD../1111-A2 | 83000 | 83033 | 83058 | - | - |
| | | Graphite | 16 | 130 | ARD../1111-G2 | 83002 | 83035 | 83060 | - | - |
| | | PTFE | 16 | 40 | ARD../1111-P2 | 83004 | 83036 | 83062 | - | - |
| Spherulitic cast iron housing with threaded connections | | | | | | | | | | |
| Brass / PPS | FPM | Aluminum | 16 | 130 | ARD../1211-A2 | - | - | - | 83106 | - |
| | | Graphite | 16 | 130 | ARD../1211-G2 | - | - | - | 83108 | - |
| | | PTFE | 16 | 40 | ARD../1211-P2 | - | - | - | 83110 | - |
| Spherulitic cast iron housing with flanged connections | | | | | | | | | | |
| Brass / PPS | FPM | Aluminum | 25 | 130 | ARD../1221-A2 | 83005 | 83037 | 83063 | 83111 | 83154 |
| | | Graphite | 25 | 130 | ARD../1221-G2 | 83007 | 83039 | 83065 | 83113 | 83155 |
| Brass / PTFE | FPM | Aluminum | 25 | 180 | ARD../1222-A2 | 83009 | 83040 | 83067 | 83115 | 83157 |
| | | Graphite | 25 | 180 | ARD../1222-G2 | 83010 | 83041 | 83068 | 83116 | 83158 |
| | | PTFE | 25 | 40 | ARD../1222-P2 | 83011 | 83042 | 83069 | 83117 | 83159 |
| Brass / PTFE ¹⁾ | FPM | Aluminum | 25 | 180 | ARD../1223-A2 | 83012 | 83043 | 83070 | 83118 | 83160 |

1) Measuring chamber, particularly for heavy fuel oil (measuring tolerance ±1 %)



ARD 2000 measuring module

| Measuring chamber | Seal | Rotary piston | PN bar | Tmax °C | Type designation | Art. No. | | | | |
|---------------------------------------------------------------|------|-----------------|--------|---------|------------------|----------|-------|-------|-------|-------|
| | | | | | | DN 15 | DN 20 | DN 25 | DN 40 | DN 50 |
| Spherulitic cast iron housing with flanged connections | | | | | | | | | | |
| Stainless steel / PPS | FPM | Aluminum | 40 | 130 | ARD../2224-A2 | 83013 | 83218 | 83071 | 83119 | 83161 |
| | | Graphite | 40 | 130 | ARD../2224-G2 | 83014 | 83219 | 83072 | 83120 | 83162 |
| | | Stainless steel | 40 | 130 | ARD../2224-S2 | 83015 | 83220 | 83073 | 83121 | - |
| | | PTFE | 40 | 40 | ARD../2224-P2 | 83017 | 83221 | 83075 | 83123 | 83165 |
| Stainless steel / PTFE | FPM | Aluminum | 40 | 180 | ARD../2225-A2 | 83018 | 83044 | 83076 | 83124 | 83166 |
| | | Graphite | 40 | 180 | ARD../2225-G2 | 83019 | 83045 | 83077 | 83125 | 83167 |
| | | Stainless steel | 40 | 180 | ARD../2225-S2 | 83020 | 83046 | 83078 | 83126 | - |
| | | PTFE | 40 | 40 | ARD../2225-G2 | 83021 | 83047 | 83079 | 83127 | 83169 |
| Stainless steel / PTFE | PTFE | Graphite | 40 | 180 | ARD../2225-G6 | 83022 | 83048 | 83080 | 83128 | 83170 |
| | | Stainless steel | 40 | 180 | ARD../2225-S6 | 83023 | 83049 | 83081 | 83129 | - |
| | | PTFE | 40 | 40 | ARD../2225-P6 | 83024 | 83050 | 83082 | 83130 | 83172 |

ARD 3000 measuring module

| Measuring chamber | Seal | Rotary piston | PN bar | Tmax °C | Type designation | Art. No. | | | | |
|------------------------------------------------------------------------------------|------|-----------------|--------|---------|------------------|----------|-------|-------|-------|-------|
| | | | | | | DN 15 | DN 20 | DN 25 | DN 40 | DN 50 |
| Stainless steel (corrosion and acid-proof) housing with flanged connections | | | | | | | | | | |
| Stainless steel / PTFE | FPM | Graphite | 25 | 180 | ARD../3315-G2 | 83026 | 83052 | 83096 | 83144 | 83173 |
| | | Stainless steel | 25 | 180 | ARD../3315-S2 | 83027 | 83053 | 83097 | 83145 | - |
| | | PTFE | 25 | 40 | ARD../3315-P2 | 83028 | 83054 | 83098 | 83146 | 83175 |
| Stainless steel / PTFE | PTFE | Graphite | 25 | 180 | ARD../3315-G6 | 83029 | 83055 | 83099 | 83147 | 83176 |
| | | Stainless steel | 25 | 180 | ARD../3315-S6 | 83030 | 83056 | 83100 | 83148 | - |
| | | PTFE | 25 | 40 | ARD../3315-P6 | 83031 | 83057 | 83101 | 83149 | 83178 |

ARD sensors: Type designation key for device identification

Example of type designation key

ARD 25 / 1 22 3 / A 2

| Type series | | ARD | |
|----------------------------|---------------------------------|-----------------------|----|
| Nominal diameter | 15 mm | 15 | |
| | 20 mm | 20 | |
| | 25 mm | 25 | |
| | 40 mm | 40 | |
| | 50 mm | 50 | |
| Configuration group | /1000 | 1 | |
| | /2000 | 2 | |
| | /3000 | 3 | |
| Housing | Threaded | Brass | 11 |
| | | Spherulitic cast iron | 21 |
| | Flanged | Spherulitic cast iron | 22 |
| | | Stainless steel | 31 |
| Measuring chamber / Driver | Brass / PPS | 1 | |
| | Brass / PTFE | 2 | |
| | Brass / PTFE (1%) ¹⁾ | 3 | |
| | Stainless steel / PPS | 4 | |
| | Stainless steel / PTFE | 5 | |
| Rotary piston | Aluminum | A | |
| | Graphite | G | |
| | Stainless steel | S | |
| | PTFE | P | |
| Seal set | FPM Fluoroelastomer | 2 | |
| | FFKM Perfluoroelastomer | 6 | |
| Flange drillings | JIS & ANSI on request | | |

1) Measuring chamber, particularly for heavy fuel oil measuring tolerance $\pm 1\%$

ARD modules: Type designations and order numbers

(for standard versions; special versions on request)

| Pulser module | | Tmax °C | Type designation | Art. No. | | | | |
|---------------------------|--------------------------------------|------------|---------------------|----------|-------|-------|-------|-------|
| Pulse values in liters | Pulse values in liters | | | DN 15 | DN 20 | DN 25 | DN 40 | DN 50 |
| RW module | | 180 | RW/RD.. | 83500 | 83526 | 83552 | 83578 | 83604 |
| IN module | | | | | | | | |
| | 0.01 | 130 | IN 0.01/RW/RD.. | 83509 | 83535 | - | - | - |
| | 0.1 | 130 | IN 0.1/RW/RD.. | 83512 | 83538 | 83561 | 83587 | - |
| | 1 | 130 | IN 1/RW/RD.. | - | - | 83564 | 83590 | 83613 |
| | 10 | 130 | IN 10/RW/RD50 | - | - | - | - | 83616 |
| INH module | | | | | | | | |
| | 0.01 | 180 | IN 0.01H/RW/RD.. | 83513 | 83539 | - | - | - |
| | 0.1 | 180 | IN 0.1H/RW/RD.. | 83516 | 83542 | 83565 | 83591 | - |
| | 1 | 180 | IN 1H/RW/RD.. | - | - | 83568 | 83594 | 83617 |
| | 10 | 180 | IN 10H/RW/RD50 | - | - | - | - | 83620 |
| INA module | | | | | | | | |
| | High-resolution | 90 | INA/RW/RD.. | 83517 | 83543 | 83569 | 83595 | 83621 |
| | High-resolution compact for MS-KP | 90 | INA/RD.. | 80946 | 80948 | 80950 | 80952 | 80954 |
| INAH module | | | | | | | | |
| | High-resolution | 180 | INAH/RW/RD.. | 83521 | 83547 | 83573 | 83599 | 83625 |
| | High-resolution compact for MS-KP | 180 | INAH/RD.. | 80947 | 80949 | 80951 | 80953 | 80955 |

Mounting set for compact mounting

80083 MS-KP

ATEX-modifications

96044 Modifications for ATEX devices

| Pulser module | | Tmax °C | Type designation | Art. No. | | | | |
|-----------------------------------------------------------|---------------------------|------------|---------------------|----------|-------|-------|-------|-------|
| Pulse values in liters | Pulse values in liters | | | DN 15 | DN 20 | DN 25 | DN 40 | DN 50 |
| RV module - not available with ATEX-Conformity | | | | | | | | |
| | 0.1 | 180 | RV 0.1/RD.. | 83501 | 83695 | - | - | - |
| | 1 | 180 | RV 1/RD.. | 83502 | 83527 | 83553 | 83579 | - |
| | 10 | 180 | RV 01/RD.. | - | 83528 | 83554 | 83580 | 83605 |
| | 100 | 180 | RV 100/RD50 | - | - | - | - | 83606 |
| VZF II module - not available with ATEX-conformity | | | | | | | | |
| | Electronic module VZF II | | | 95588 | - | - | - | - |
| | Coupling | | | 95584 | 95584 | 95585 | 95586 | 95587 |

ARD modules: Type designation key for device identification

| Example of type designation key | | | IN 0.1 | / RW | / RD 25 |
|---------------------------------------|-----------------------|---------|----------|--------|---------|
| Pulser | Pulse value in liters | Tmax °C | | | |
| None | | 180 | | | |
| IN Inductive | 0.01 | 130 | IN 0.01 | | |
| | 0.1 | 130 | IN 0.1 | | |
| | 1 | 130 | IN 1 | | |
| | 10 | 130 | IN 10 | | |
| INH Inductive | 0.01 | 180 | IN 0.01H | | |
| | 0.1 | 180 | IN 0.1H | | |
| | 1 | 180 | IN 1H | | |
| | 10 | 180 | IN 10H | | |
| INA Inductive high-resolution | | 90 | INA | | |
| | | 180 | INAH | | |
| Roller register | | | | RW | |
| Roller register with integral pulser | 0.1 | | | RV 0.1 | |
| | 1 | | | RV 1 | |
| | 10 | | | RV 10 | |
| | 100 | | | RV 100 | |
| Electronic module VZF II | | 180 | VZF II | | |
| Sealing plate without roller register | | | | | |
| Nominal diameter of flow meter | DN 15 | | | | RD 15 |
| | DN 20 | | | | RD 20 |
| | DN 25 | | | | RD 25 |
| | DN 40 | | | | RD 40 |
| | DN 50 | | | | RD 50 |
| Display units | Liters | | | | |



AMD sensors: Type designations and order numbers

(for standard versions; special versions on request)

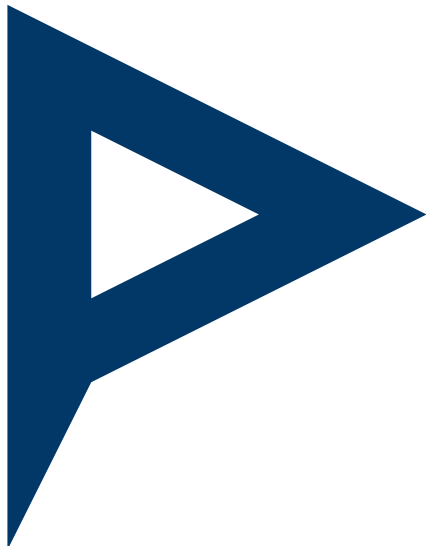
| Measuring chamber | Measuring unit bearings | PN bar | Tmax °C | Type designation | Art. No. DN 25 | DN 40 |
|-------------------|----------------------------|--------|---------|------------------|----------------|-------|
| AMD 3000 | | | | | | |
| Stainless steel | Stainless steel / PTFE | 16 | 90 | AMD../3331 | 84002 | 84006 |
| | Stainless steel / graphite | 16 | 180 | AMD../3332 | 84003 | 84007 |

AMD sensors: Type designation key for device identification

Example of type designation key

AMD 25 / 3 3 3 1

| Type series | AMD | | | | | |
|---------------------|-----------------------|--------|--|--|--|----|
| Nominal diameter | 25 mm | | | | | 25 |
| | 40 mm | | | | | 40 |
| Configuration group | /3000 | | | | | 3 |
| Housing | Stainless steel | PN 25 | | | | 3 |
| Measuring unit | Stainless steel | | | | | 3 |
| Bearings | PTFE | 90 °C | | | | 1 |
| | Graphite | 180 °C | | | | 2 |
| Flange drilling | JIS & ANSI on request | | | | | |



AMD modules: Type designations and order numbers

(for standard versions; special versions on request)

| Pulser module | Roller register RV | Tmax | Type | Art. No. | |
|-------------------------------|-------------------------------|-------------|--------------------|-----------------|--------------|
| Pulse values in liters | Pulse values in liters | °C | designation | DN 15 | DN 20 |
| RW module | | 180 | RW/MD .. | 84010 | 84016 |
| IN module | | 180 | RV 1/MD .. | 84040 | 84041 |
| IN module | | | | | |
| 0.1 | | 130 | IN 0.1/RW/MD.. | 84012 | 84018 |
| 1 | | 130 | IN 1/RW/MD.. | 84013 | 84019 |
| 0.1 | | 180 | IN 0.1H/RW/MD.. | on request | on request |
| 1 | | 180 | IN 1H/RW/MD.. | on request | on request |
| INA module | | | | | |
| High-resolution | compact for MS-KP | 90 | INA/MD.. | 80956 | 80957 |
| High-resolution | | 180 | INAH/MD.. | on request | on request |

Mounting set for compact mounting

80083 MS-KP

ATEX-modifications

96044 Modifications for ATEX devices

AMD modules: Type designation key for device identification

Example of type designation key

IN 1

/ RW

/ MD 25

| Pulser | Pulse value in liters | Tmax °C | |
|----------------------------------------|------------------------------|----------------|----------|
| None | | | |
| IN Inductive | 0.1 | 130 | IN 0.1 |
| | 1 | 130 | IN 1 |
| INA Inductive high-resolution | | 90 | INA |
| | | 180 | INAH |
| Roller register | | | RW |
| Roller register with integrated pulser | 1 | | RV 1/RW/ |
| Nominal diameter of flow meter | DN 25 | | MD 25 |
| | DN 40 | | MD 40 |
| Display units | Liters | | |

PMD complete flow meters: Order numbers

(for standard versions; special versions on request)

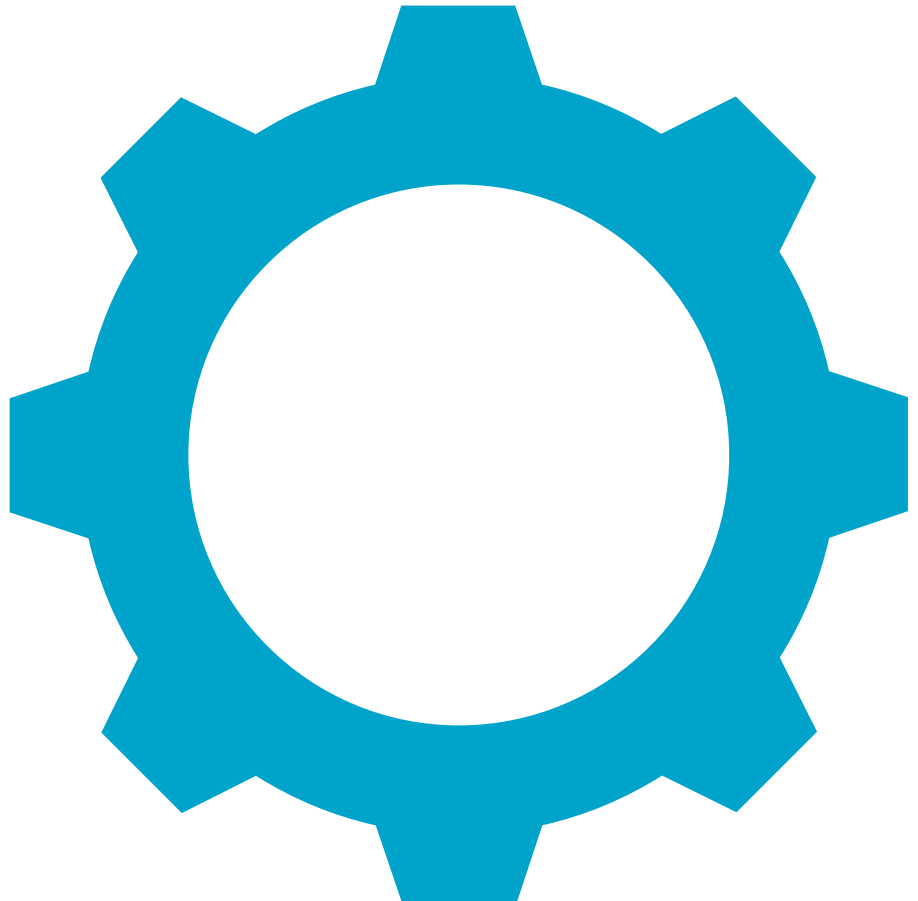
| Type designation | Version | Art. No. | DN 25 | DN 40 |
|------------------|--------------------------------------|----------|------------|------------|
| | | | | |
| PMD xx - IN 0.1 | with inductive pulser IN 0.1 l | | 84027 | 84035 |
| PMD xx - IN 1 | with inductive pulser IN 1 l | | 84028 | 84036 |
| PMD xx - INA | with high-resolution pulser | | on request | on request |
| PMD xx - INA+ | prepared for batching control system | | 80977 | 80978 |

Mounting set for compact mounting

80083 MS-KP 

ATEX-modifications

96044 Modifications for ATEX devices



ACCREDITATIONS

ATEX Directive

With the exception of the - RV ... and VZF II - ancillary groups, all DOMINO® components are certified according to ATEX Directive.

Marking:  II2G cT6

Pressure Equipment Directive PED

In accordance with the guidelines, a CE or supplier conformity declaration are available on our website for all DOMINO® devices.



WARRANTY, SAFETY INSTRUCTIONS

Warranty Disclaimer

Aquametro Oil & Marine guarantees the quality of the product in the context of its General Terms of Business. The owner, operator or installer will be liable for the correct installation as well as the appropriate handling of the equipment upon its receipt.

- » Please observe the application, mounting and operating instructions.
- » Use the unit exclusively for its designed purpose.
- » Maintain the unit and service it according to prescriptions.
- » Use accessories only if their applicability is technically safe.

Safety rules and precautionary measures

The manufacturer accepts no responsibility if the following safety rules and precautions are disregarded.

- » Modifications of the device implemented without preceding written consent from the manufacturer, will result in the immediate termination of product liability and warranty period.
- » Installation, operation, maintenance and decommissioning of this device must be carried out by trained, qualified specialists, authorized by the manufacturer, operator or owner of the facility. The specialist must have read and understood these mounting and operating instructions and must follow the instructions here in.
- » Check the voltage and the information on the type plate before installing the device.
- » Check all connections, settings and technical specifications of peripherals which may be present.
- » Open the housing or parts of housings, which electric or electronic components included, only when the electric power is turned off.
- » Do not touch any electronic components (ESD sensitivity).
- » Expose the system with respect to the mechanical load (pressure, temperature, IP protection, etc.), only to a maximum of the specified classifications.
- » During operations that involve mechanical components of the system, release the pressure in the pipe system or reduce the temperature of the medium to a safe level for humans.
- » None of the information stated here or elsewhere releases planners, installers and operators from their own careful and comprehensive assessment of the respective system configuration in terms of functional capability and operational safety.
- » The local labour and safety laws and regulations must be observed.



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