

DATA SHEET

System for Dosing rate test according to EN 13565-1, NFPA 11, FM 5130

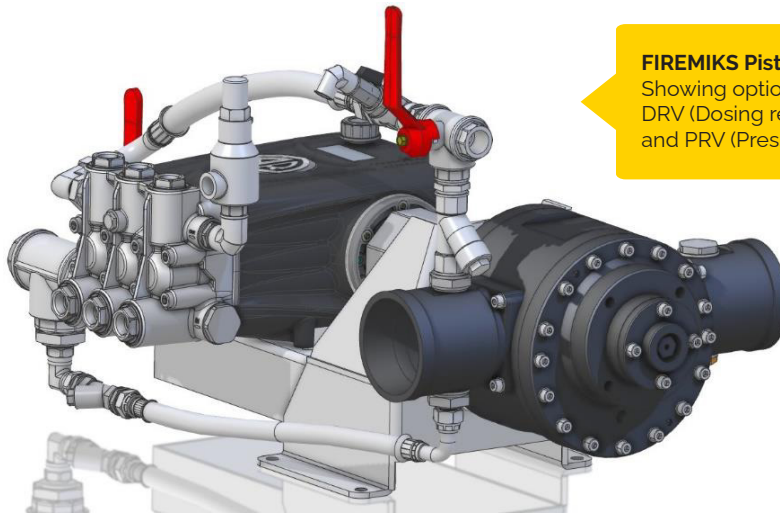
FOR WATER DRIVEN VOLUMETRIC PROPORTIONER FIREMIKS - IN FIXED INSTALLATIONS

FIREMIKS is a water driven volumetric proportioner for firefighting – for fixed installations connected to a concentrate tank with gravity feed to the dosing pump. Extinguishing water drives the volumetric water motor, which in its turn drives the positive displacement pump that doses the correct amount of concentrate in the extinguishing water exiting the water motor.

In-house designed multi-vane water motor giving early volumetric function, without using moving elastomer sealing or spring-loaded vanes.

To be able to simply test and verify the correct proportioning the unit needs to be equipped with an optional **Dosing return valve, DRV, (no 22a.)** this allows for testing the system without mixing the concentrate. A **Pressure relief valve PRV, (no 22f.)** also included to eliminate the risk for over-pressure if return line is closed/ blocked by mistake.

Furthermore one need to install **two Flow meters; one for main water line (22b.) and one for concentrate return line (22c.)**, plus a **Pressure regulating valve (22d.)** to simulate system pressure, displayed by a **Damped pressure gauge (22e.)**.



FIREMIKS Piston pump model
 Showing optional
 DRV (Dosing return valve)
 and PRV (Pressure relief valve).

THE ACCURATE WAY OF VERIFYING DOSING RATE

Verifying dosing rate equals to verifying the correct volumetric function **of both the water motor and dosing pump with two independent flow meters** and calculate to this formula, in accordance with EN 13565-1, NFPA 11, FM 5130:

Concentrate flow _____ x 100 = Dosing rate %

Water flow + Concentrate flow

REVOLUTION COUNTER METHOD - THE LIMITS

The revolution counter method which is also presented on the market assumes the correct working of the water motor, this means it gives only an **estimate** of water flow and therefore it cannot be used to correctly verify the dosing rate, as the dosing rate is **directly dependent on the performance of the water motor**. **The revolution counter method is not an approved method to verify dosing rate as described by EN 13565-1, NFPA 11, FM 5130.** Quote from FM Approval guide: **"...may be used to provide a general estimate of the extinguish water flow..."**

REVOLUTION COUNTING WITH HANDHELD TACHOMETER

The **estimated** water flow can be measured with handheld tachometer (contact or non-contact) to ensure that the unit is not **over-speeding**, i.e working within the upper rpm = flow limit specified in the Data sheet of each FIREMIKS model.

22b.) Eletromagnetic flowmeter for water line; Promag W 400

Energy-saving flow measurement - no pressure loss due to cross-section construction

Promag W 400	Flow range lit/min
DN 40 - 1.5"	25 - 700
DN 50 - 2"	35 - 1100
DN 80 - 3"	90 - 3000
DN 100 - 4"	145 - 4700
DN 150 - 6"	335 - 10000
DN 200 - 8"	580 - 18330

Promag W 400, benefits and specs at a glance

With its international approvals for custody transfer as well as drinking water, Promag W 400 serves the broadest variety of applications. It is available as both compact or remote version. Promag W 400 saves time and costs thanks to the broad functionality of its transmitter optimized for Water & Wastewater.

- The bidirectional measuring principle is virtually independent of pressure, density, temperature and viscosity
- Ideal for water measurement, e.g. utility water and industrial/municipal wastewater
- Transmitter housing made of durable polycarbonate or aluminium
- WLAN access
- Integrated data logger: measured values monitoring
- Reliable measurement at constant accuracy with 0 x DN inlet run and no pressure loss
- Application fitness - EN ISO 12944 corrosion protection for underground or underwater installation



22c.) Eletromagnetic flowmeter for concentrate return line; Promag D10

Promag D10	Flow range lit/min
DN 25 - 1"	9 - 300
DN 40 - 1.5"	25 - 700
DN 50 - 2"	35 - 1100

Promag D10, benefits and specs at a glance

Available as wafer and threaded versions, designed for all applications where space is at a minimum.

- Easy, fast centering of the sensor - innovative housing construction
- The measuring principle is virtually independent of pressure, density, temperature and viscosity
- Energy-saving flow measurement - no pressure loss due to cross-section construction
- Cost-effective - designed for easy applications and direct integration
- Safe operation - display provides easy readable process information
- Fully industry compliant - IEC/EN/NAMUR
- Maintenance-free - no moving parts



The above information is a short summary of the applications, benefits and technical data. For detailed Technical information consult website of:



www.endress.com/en

An alternative method to measure the pumped concentrate that do not require a flow meter, is to pass it into a separate container and weight the amount during a defined time. (Nordtest method NT Fire 042).



22d.) Pressure regulating valve



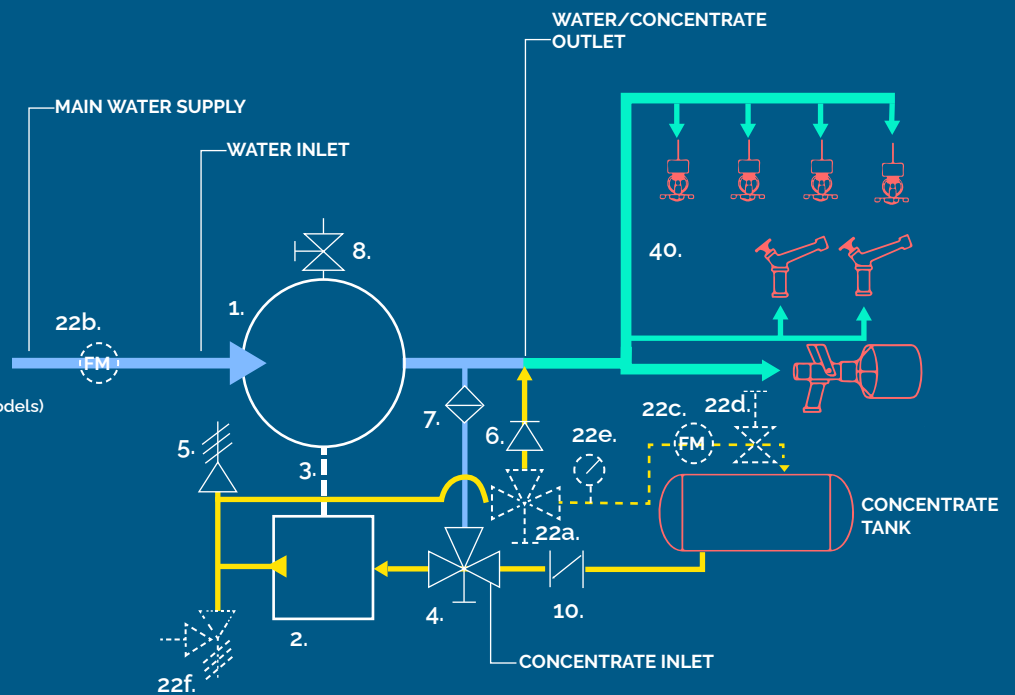
22e.) Damped pressure gauge

PRINCIPLE FLOW CHART with optional DRV, PRV, 2 x Flow meters, Pressure regulating valve for simulating system pressure and Pressure gauge

- NOT INCLUDED WITH FIREMIKS
- OPTIONAL EQUIPMENT
- WATER
- CONCENTRATE
- WATER/CONCENTRATE SOLUTION

1. Water motor
 2. Dosing pump
 3. Drive gear/Drive adaptors
 4. Selector valve: Dosing/Flushing
 5. Air relief valve (Manual or Automatic)
 6. Check valve
 7. Filter flushing line
 8. Drain valve (Not included on smallest models)
 10. Flap check valve
- Optional:
- 22a. DRV - Dosing return valve
 - 22b. Flow meter for water line
 - 22c. Flow meter for concentrate return line
 - 22d. Pressure regulating valve
 - 22e. Damped pressure gauge
 - 22.f. PRV - Pressure relief valve

40. For example:
Nozzles/Monitors/Deluge systems



N.B. Reverse water flow direction is optional.

FIREMIKS® is a registered trademark owned by Firemiks AB in Sweden.

Firemiks AB is SS-EN ISO-9001:2015 certified by Bureau Veritas, cert.no SE006796-1. Scope of supply: Development, production and sales of water motor driven dosing systems for firefighting.



CE FIREMIKS® is CE-marked and production is made according to European Directive 2006/42/EC.

Conforms to applicable parts of NFPA 11 and NFPA 1901.

We reserve the right to make changes in the specifications without prior notice.

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