

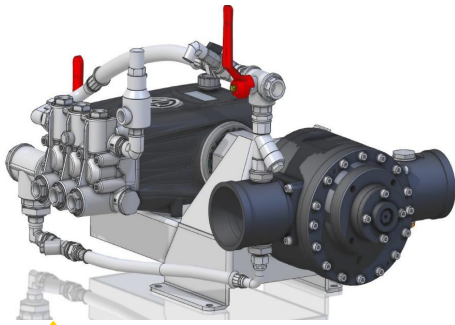
DATA SHEET

Dosing Rate Test System 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 concentrate pump that doses the correct amount of concentrate in the extinguishing water.

To be able to simply test and verify the correct proportioning the FIREMIKS unit needs to be ordered with the optional **Dosing/Return valve, DRV, (22a.)** that allows for testing the system without mixing the concentrate into the water flow. A **Pressure Relief valve PRV, (22b.)** is included to eliminate the risk for over-pressure if return line is closed/blocked by mistake.



FIREMIKS Piston pump model. Showing unit equipped with optional DRV (Dosing/Return valve) and PRV (Pressure Relief valve), both needed to be able to use the Dosing Rate Test System described in this Data sheet.

The FIREMIKS complete Dosing Rate Test System consist of **two Electromagnetic Flow meters; one Water flow meter (22c.) and one Concentrate flow meter (22e.)** The Concentrate flow meter is supplied as a kit complete with flanges and partly premounted with following accessories: **Concentrate testing line (22d.) a Damped pressure gauge (22f.), a Pressure regulating valve (22g.) to simulate the water system pressure and a Discharge hose (22h.) for concentrate back to tank.**



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:

$$\frac{\text{Add flow (Concentrate)}}{\text{Water flow} + \text{Add flow (Concentrate)}} \times 100 = \text{Dosing rate \%}$$

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.**

REVOLUTION COUNTING WITH HANDHELD TACHOMETER

An **estimated** water flow can simply 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. When requested we may supply our units with a handheld tachometer for this estimation purpose.



22c.) Electromagnetic Water flow meter MAG 5100W + Transmitter MAG 6000

Size	Optimal Flow range L/min (Overflow capacity)	Suitable for flow model
DN 40 - 1.5"	25 - 560 (675)	180, 450
DN 50 - 2"	40 - 700 (1.000)	450, 600
DN 65 - 2.5"	75 - 1.200 (1.800)	600, 800, 1000, 1200
DN 80 - 3"	120 - 2.000 (2.700)	800, 1000, 1200, 1800
DN 100 - 4"	200 - 3.200 (4.000)	1800, 2400, 3200
DN 125 - 5"	350 - 5.000 (6.750)	3200, 4500
DN 150 - 6"	500 - 7.000 (9.000)	4500, 6000
DN 200 - 8"	900 - 12.000 (18.000)	8000, 10000, 12000-skid
DN 250 - 10"	1.300 - 20.000 (24.000)	16000-skid, 20000-skid
DN 300 - 12"	1.800 - 28.000 (35.000)	20000-skid



SIEMENS SITRANS FM MAG 5100W - some benefits and specs at a glance

- Suitable for underground installation and permanent immersion (IP68) or underwater installation.
- Unique SensorProm technology - stores critical, sensor-specific data and passes it to the transmitter. This allows a simple, flexible commissioning of the sensor.
- Plug & Play - allows easy on-site replacement and commissioning of the transmitter in just minutes.
- "Hot swappable" - exchangeable during operation.
- **Mounting flexibility - compact or remote installation possible.**
- Validated calibration ensures accurate flow measurement. Each Siemens flowmeter is calibrated in facilities that are individually accredited to ISO / IEC 17025.
- Service and diagnostics - Designed for MAG on-site verification with traceable certification. Regular calibration of the SITRANS FM Verificator ensures accuracy in the field.

22e.) Electromagnetic Concentrate flow meter MAG 1100 + Transmitter MAG 6000

Size	Flow range L/min	Suitable for FIREMIKS model/skid
DN 3	0,2 - 3	180-1
DN 6	0,8 - 13	180-3, 450-1, 600-1, 800-1
DN 10	2 - 32	450-3, 600-3, 800-3, 1200-1, 1800-1, 2400-1
DN 15	4 - 80	1000-3, 1200-3, 1800-3, 3200-1, 4500-1, 6000-1
DN 25	8 - 240	2400-3, 3200-3, 4500-3, 6000-3, 8000-1, 10000-1, 12000-1-skid, 16000-1-skid, 20000-1-skid
DN 40	25 - 560	8000-3, 10000-3
DN 50	60 - 800	12000-3-skid, 16000-3-skid, 20000-3-skid



SIEMENS SITRANS FM MAG 1100 - some benefits and specs at a glance

- Compact wafer design meets EN 1092, DIN and ANSI flange standards.
- Same benefits as for MAG 5100W described above.

Transmitter MAG 6000 may be installed on the flow meters or remotely connected via cable. **Power supply: 115-230Vac 50-60Hz (standard) , 24V DC (optional)**

The above information is a short summary of the applications, benefits and technical data for the flow meters. For detailed Technical information consult website of: www.siemens.com/global/en/products.html

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).

Accessories included with Concentrate flow meter (22e.):



22f.) Damped pressure gauge

22g.) Pressure regulating valve

Above items incl Concentrate testing line (22d.) and Discharge hose for concentrate (22h.) is partly premounted together as a kit with Concentrate flow meter (22e.)

PRINCIPLE FLOW CHART for FIREMIKS units equipped with DRV, PRV, Water flow meter, Concentrate testing line, Concentrate flow meter, Damped pressure gauge, Pressure regulating valve for simulating system pressure and Discharge hose for concentrate.

○ NOT INCLUDED WITH FIREMIKS

● WATER

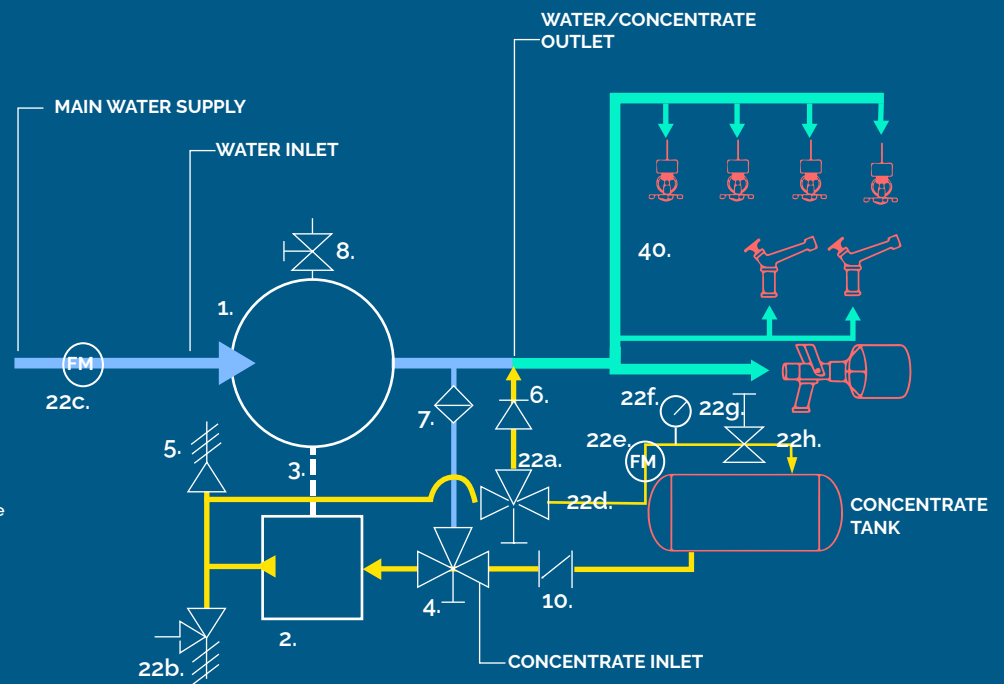
● CONCENTRATE

● WATER/CONCENTRATE SOLUTION

- 1. Water motor
- 2. Dosing pump
- 3. Drive gear (Not incl. on smaller models)
- 4. Selector valve: Dosing/Flushing
- 5. Air relief valve (Manual or Automatic)
- 6. Check valve
- 7. Filter flushing line
- 8. Drain valve (Not incl. on smaller models)
- 10. Flap check valve

- 22a. DRV - Dosing/Return valve
- 22b. PRV - Pressure Relief valve with relief hose
- 22c. Water flow meter
- 22d. Concentrate testing line
- 22e. Concentrate flow meter
- 22f. Damped pressure gauge
- 22g. Pressure regulating valve
- 22h. Discharge hose for concentrate

- 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. 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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