

# UNDERGROUND MODULES

MIF - MIC - MIR Series



# MIF - MIC - MIR Series Underground Modules

## Underground Modules

Underground Modules are designed to reduce environmental impact that is not provided by traditional cabinet installations or masonry structures.

This solution reduces noise pollution and environmental impact, provides protection against impact and damage due to acts of vandalism or accidents.

The module consists of two main parts:

- Metal underground container
- Gas control unit

The metal container is a non-pressurized type and supplies with connections suitable for direct welding to inlet and outlet piping.

The gas control unit is contained inside the metal container, consisting of a regulating line complete with by-pass (MIR/ series excluded) assembled with standard version equipment. The gas control unit is easily accessible for maintenance or replacement purposes.

Main advantages compared to traditional installations:

- ***Only ventilation ducts installed above-ground***
- ***Environmental impact reduction***
- ***Noise pollution reduction***
- ***Protection against impact and damage***
- ***Reduced administrative installation procedures***



# MIF - MIC - MIR Series Underground Modules

## Available Models

In order to offer a very versatile product, we have designed three series of underground module available in different models according to the flow rate required:



### MIF Series

This series is composed by two models MI-F/40 and MI-F/65, employs pilot-operated pressure regulators type MLF-BP and slam shut valve type BM5.

Inlet and outlet valves together with the regulating line system by-pass and the relief valve are placed inside the container.

All control devices (gauges - pilots - differential gauge) are placed on the container cover inside.

Metal container cover opening by means of a stress reducing unit.

To remove the gas control unit a built-in hydraulic lifting system is available, for system maintenance no extra lifting is required.



### MIC Series

This series is composed by three models MIC/25, MIC/50 and MIC/80, employs pilot operated pressure regulators type Cronos with regulator, monitor and slam-shut functions.

Inlet and outlet valves together with the regulating line system by-pass and the relief valve are placed inside the container.



### MIR Series

This series is composed by one model MIR/65, employs spring loaded pressure regulators type MBN/ and slam shut valve type BM5/.

Inlet and outlet valves together with the relief valve are placed inside the container.

# MIF - MIC - MIR Series Underground Modules

## MIF Series



### Technical Features

|                                      |                      |
|--------------------------------------|----------------------|
| Permissible inlet pressure           | $P_{u,max}$ : 19 bar |
| Design temperature                   | : -10 °C +60 °C      |
| Min. operating differential pressure | : 0.3 bar            |
| Accuracy class                       | AC : up to 2.5       |
| Lock-up pressure class               | SG : up to 10        |

### Construction Features

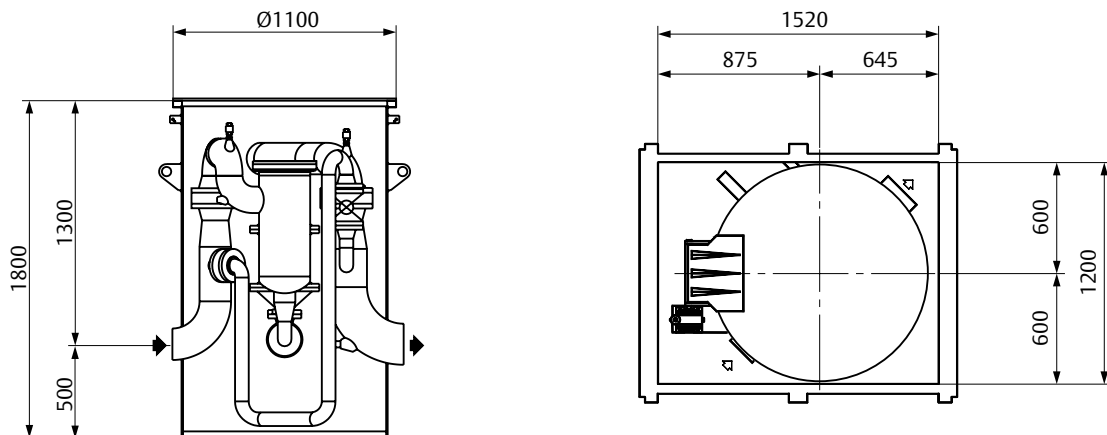
| Parts                 | MIF/40       | MIF/65        |
|-----------------------|--------------|---------------|
| Inlet pipe            | DN 150       | DN 150        |
| Inlet valve           | DN 125       | DN 125        |
| Filter cartridge      | G 2.5        | G 2.5         |
| Slam-shut valve       | BM5/40       | BM5/65        |
| Regulator and monitor | MFL-BP/40x80 | MFL-BP/65x150 |
| Outlet valve          | DN 150       | DN 150        |
| Outlet pipe           | DN 200       | DN 200        |
| By-pass               | DN 65        | DN 65         |
| Relief valve          | 1"           | 1"            |

### Flow Rate Table (Stm<sup>3</sup>/h)

| Pd ▼ | Pu ► | MIF/40 |      |      | MIF/65 |      |      |
|------|------|--------|------|------|--------|------|------|
|      |      | 0.5    | 1.5  | 5    | 0.5    | 1.5  | 5    |
| 0.02 |      | 600    | 1200 | 2900 | 1500   | 2900 | 2900 |
| 0.15 |      | 600    | 1200 | 2900 | 1400   | 3000 | 3000 |
| 1    |      | -      | 850  | 2900 | -      | 2200 | 5600 |
| 3    |      | -      | -    | 2550 | -      | -    | 6000 |

Pu= Inlet pressure bar - Pd= Outlet pressure bar

### Overall Dimensions (mm)



# MIF - MIC - MIR Series Underground Modules

## MIC Series



### Technical Features

|                                      |                     |
|--------------------------------------|---------------------|
| Permissible inlet pressure           | $P_{u,max}$ : 6 bar |
| Design temperature                   | : -10 °C +60 °C     |
| Min. operating differential pressure | : 0.3 bar           |
| Accuracy class                       | AC : up to 2.5      |
| Lock-up pressure class               | SG : up to 10       |

### Construction Features

| Parts                            | MIC/25        | MIC/50        | MIC/80        |
|----------------------------------|---------------|---------------|---------------|
| Inlet pipe                       | DN 50         | DN 100        | DN 150        |
| Inlet valve                      | DN 50         | DN 100        | DN 150        |
| Filter cartridge                 | G 1           | G 2           | G 3           |
| Regulator, monitor and slam-shut | Cronos CCB/25 | Cronos CCB/50 | Cronos CCB/80 |
| Outlet valve                     | DN 80         | DN 150        | DN 250        |
| Outlet pipe                      | DN 80         | DN 150        | DN 250        |
| By-pass*                         | DN 25         | DN 50         | DN 80         |
| Relief valve                     | 1"            | 1"            | 1"            |

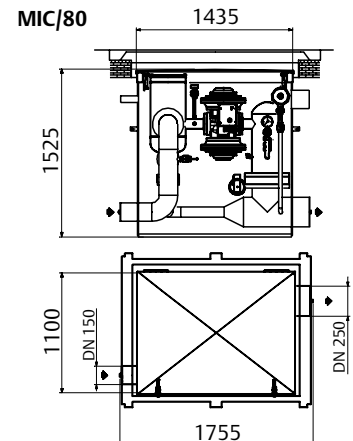
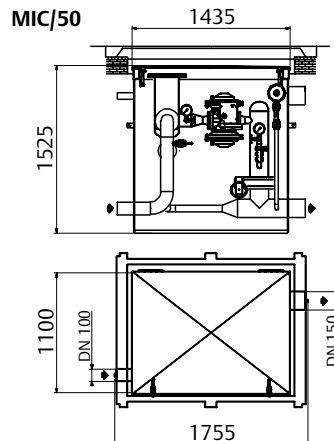
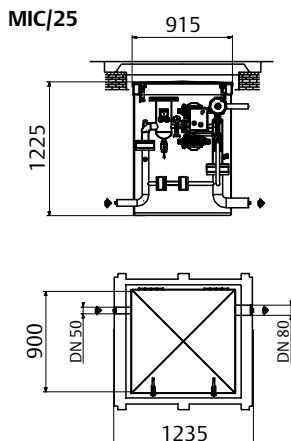
(\*) Second reducing line available on request.

### Flow Rate Table (Stm<sup>3</sup>/h)

| Pd ▼ | MIC/25 |     |     | MIC/50 |      |      | MIC/80 |      |      |      |
|------|--------|-----|-----|--------|------|------|--------|------|------|------|
|      | Pu ►   | 0.5 | 1.5 | 5      | 0.5  | 1.5  | 5      | 0.5  | 1.5  | 5    |
| 0.02 |        | 345 | 390 | 390    | 1300 | 1300 | 1300   | 2900 | 3750 | 3750 |
| 0.15 |        | 320 | 415 | 415    | 1300 | 1430 | 1430   | 2900 | 3960 | 3960 |
| 1    |        | -   | 450 | 700    | -    | 1700 | 2600   | -    | 4100 | 5850 |
| 3    |        | -   | -   | 700    | -    | -    | 2750   | -    | -    | 7500 |

Pu= Inlet pressure bar - Pd= Outlet pressure bar

### Overall Dimensions (mm)



# MIF - MIC - MIR Series Underground Modules

## MIR Series



### Technical Features

|                                      |                     |
|--------------------------------------|---------------------|
| Permissible inlet pressure           | $P_{u,max}$ : 6 bar |
| Design temperature                   | : -10 °C +60 °C     |
| Min. operating differential pressure | : 0.3 bar           |
| Accuracy class                       | AC : up to 2.5      |
| Lock-up pressure class               | SG : up to 10       |

### Construction Features

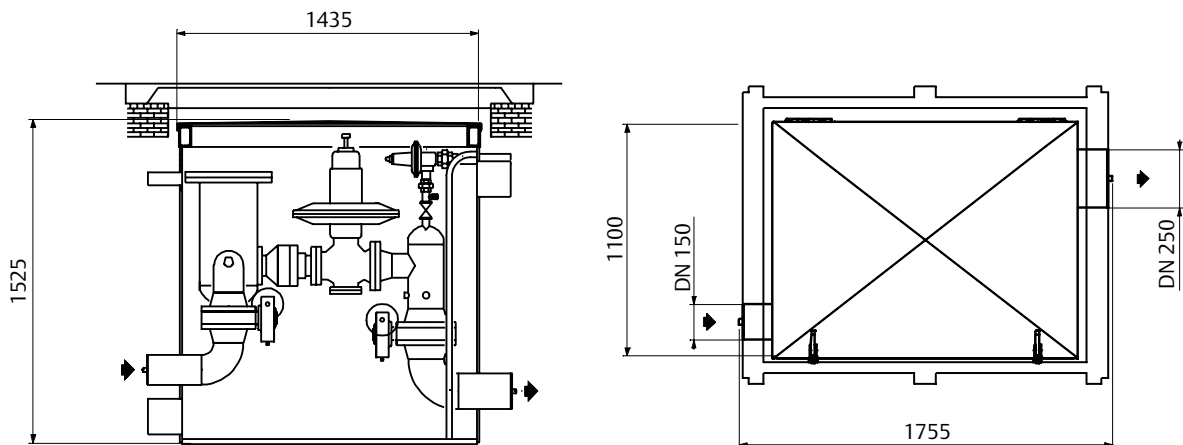
| Parts            | MIR/65     |
|------------------|------------|
| Inlet pipe       | DN 125     |
| Inlet valve      | DN 125     |
| Filter cartridge | G 2.5      |
| Slam-shut valve  | BM5/65     |
| Regulator        | MBN/65x100 |
| Outlet valve     | DN 150     |
| Outlet pipe      | DN 150     |
| Relief valve     | 1"         |

### Flow Rate Table (Stm<sup>3</sup>/h)

| Pd ▼ | MIR/65 |      |      |      |
|------|--------|------|------|------|
|      | Pu ►   | 0.5  | 1.5  | 5    |
| 0.02 |        | 1400 | 1600 | 1600 |
| 0.15 |        | 1300 | 1700 | 1700 |
| 1    |        | -    | 2000 | 3200 |
| 3    |        | -    | -    | 4000 |

Pu= Inlet pressure bar - Pd= Outlet pressure bar

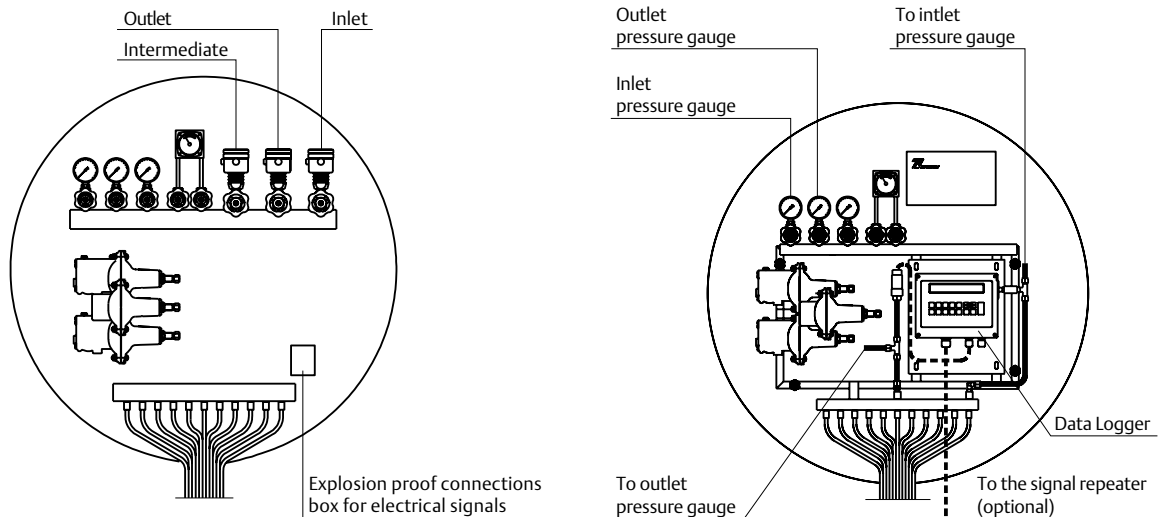
### Overall Dimensions (mm)



# MIF - MIC - MIR Series Underground Modules

## Accessories

### Remote Control



The underground module series MIF/ are arranged, by means of transducers and indicators, for tele-reading of the data which indicates the system functioning.

An integrated version equipped with a “Data Logger” is available. It states and records the following functioning data:

Inlet pressure - Intermediate pressure between monitor and regulator - Outlet pressure - Outlet temperature - Filter clogging - Travel indicator - Instant flow rate

### Proportional travel indicator

In the series MIF/ and MIC/ like a regulator accessory, in order to communicate the valve position, a potentiometer-type straightaway position transmitter is used connected to the regulator travel indicator.

Thanks to this transducer, it is possible to know accurately the valve position and thus have correct information on the regulator operating condition.



### Proximity Switch

In order to send the shut off or the regulator/monitor opening/closing signal, a proximity switch suitable for installation in hazardous area is used.

The use of this switch foresees the application of an intrinsic safety separation barrier which should be installed in safe area.

On request it is possible to supply the shut off device in the version with two proximity switches in order to indicate extreme positions of valve opening/closing.



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