

Technical Description for Multiplexer MPX



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Translation

If the device is sold to a country in the European Economic Area (EEA) this manual must be translated into the language of the country in which the device is to be used.

Should the translated text be unclear, the original manual (German) must be consulted or the manufacturer contacted for clarification.

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Names

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General



Important note

READ CAREFULLY BEFORE USE.

KEEP IN A SAFE PLACE FOR LATER REFERENCE.

This manual is an original instruction for Multiplexer MPX and is for the intended use (see chapter “5 Intended use”) of the device. This manual is oriented exclusively to qualified expert personnel.

Read this instruction manual carefully and completely prior to installation and connection since it contains relevant information on this product. Observe the notes and particularly follow the warning notes and safety instructions.

Keep this manual in a safe place and make sure it is available for the users of this product at any time.

If you should have problems to understand information contained within this manual either contact the manufacturer or one of the distributors for further support.

The manufacturer cannot be held responsible for damage to persons or material due to incorrectly understood information in this instruction.

Detailed information on how to operate the complete system can be found in the accompanying instruction manuals of the concerning NIVUS transmitters, sensors etc.



Name/Term

The Multiplexer MPX in this technical instruction is hereinafter called MPX.

1 Applicable documentation

For the installation and operation of the complete system extra instruction manuals or technical descriptions may be required apart from this manual.

- Instruction manual for the flow measurement units NivuFlow 750
- Technical Instructions for correlation sensors and Electronic box
- Installation Instruction for correlation and Doppler sensors
- Technical and Installation Instruction for Radar sensors OFR

These manuals are provided with the auxiliary units or sensors and/or are available as download on the NIVUS homepage.

2 Signs and definitions used

Image	Meaning	Remark
	(Action) Step	Action to be performed by you. Note the numbering of action steps. Observe the order of the working steps!
	Cross-reference	Reference to further or detailed information.
>Text<	Parameter or Menu	Indicates a parameter or a menu that is selected or described.
	Reference to document	Refers to an accompanying documentation.

Table 1 Documentation structure

3 Colour code for wires and single conductors

The abbreviations of colours, wire and components follow the international colour code according to IEC 757.

BK	black	RD	red	TR	transparent
BU	blue	WH	white	GNYE	green/yellow
GN	green	YE	yellow	BN	brown
GY	grey	PK	pink		

Safety instructions

4 Used signs and definitions



The general warning symbol indicates the risk of personal injuries or death. In the text section the general warning symbol is used in conjunction with the signal words described below.

DANGER

Hazard warnings



Indicates an immediate high risk which may result in death or severe personal injury if not avoided.

WARNING

Warning of danger to persons



Indicates a possible danger with moderate risk which may result in death or (severe) personal injury if not avoided.

CAUTION

Warning of personal injuries or material damage



Indicates a possible danger with moderate risk which may result in minor or moderate personal injury or material damage if not avoided.

DANGER

Danger of electrical shock



Indicates a possible danger by electrical power with high risk which may result in death or severe personal injury if not avoided.



Important Note

Indicates situations that may result in damage to property and/or loss of data, if not avoided.

Contains information that needs to be highlighted.



Note

Indicates situations that do not result in personal injury.

4.1 Safeguards and precautions

WARNING**Germ contamination**

Please note that due to the operation in the waste water field the measurement system and cables may be loaded with dangerous disease germs. Respective precautionary measures must be taken to avoid damage to one's health.

Wear protective clothing.

WARNING**Observe regulations for health and safety at work**

Before starting installation work, observing the work safety regulations need to be checked.

Failure to do so may cause personal injury.

WARNING**Do not disable safety devices!**

It is strictly prohibited to disable the safety devices or to change the way they work.

Failure to observe may cause personal injury as well as to system damage.

WARNING



Check hazards due to explosive gases

Prior to beginning mounting works observe to follow any regulations on safety at work and check possible risks due to explosive atmospheres.

While working in channel systems observe to avoid electrostatic charge:

- Avoid unnecessary movement to reduce the risk of building up electrostatic charge.*
- Discharge possible electrostatic charge from your body before you begin to install the sensor.*

Disregarding may lead to personal injury or damage your facilities.

4.2 Personnel requirements

Installation, commissioning and maintenance shall be executed only by personnel meeting the demands as follows:

- Expert personnel with relevant training and appropriate qualification
- Personnel authorised by the plant operator



Qualified personnel

within the context of this documentation or the safety notes on the product itself are persons who are sufficiently familiar with installation, mounting, starting up and operation of the product and who have the relevant qualifications for their work; for example:

- I. Training, instruction or authorisation to activate/deactivate, isolate, ground and mark electric circuits and devices/systems according to the safety engineering standards.*
 - II. Education and instruction according to the standards of safety engineering regarding the maintenance and use of adequate safety equipment.*
 - III. First aid training*
-

5 Intended use



Important Note

The Multiplexer MPX is exclusively intended to be used for purposes as described below.

Modifying or using the devices for other purposes without the written consent of the manufacturer will not be considered as use in accordance with the requirements.

Damages resulting from this are left at user's risk.

The MPX is for the connection of NIVUS sensors (specified in chapter "11 Functional descriptions").

The MPX is engineered and manufactured according to the current state of the art as well as to recognised safety regulations. Danger to persons or material, however, cannot be completely ruled out.

Strictly observe the maximum permissible limit values of the MPX as specified in chapter "8 Specifications".

Any applications deviating from the aforementioned limit values without the written authorisation by NIVUS GmbH are left at user's risk.

CAUTION



Device failure caused by damages

Protect the MPX from shocks, drops or other damage.



Note

For installation and commissioning observe the following points:

- EU Declaration of Conformity*
 - Test certificates of the respective authorities*
 - Applicable local regulations*
-

5.1 User's responsibilities



Important Note

In the EEA (European Economic Area) national implementation of the framework directive 89/391/EEC and corresponding individual directives, in particular the directive 2009/104/EEC concerning the minimum safety and health requirements for the use of work equipment by workers at work, as amended, are to be observed and adhered to.

The customer must (where necessary) obtain any local **operating permits** required and observe the provisions contained therein.

In addition to this, he must observe local laws and regulations on

- personnel safety (accident prevention regulations)
- safety of work materials and tools (safety equipment and maintenance)
- disposal of products (laws on wastes)
- disposal of materials (laws on wastes)
- cleaning (cleansing agents and disposal)
- environmental protection

Connections

As an operator make sure prior to activating the MPX that during installation and initial start-up, if executed by the operator himself, the local regulations (such as regulations for electrical connection) are observed.

5.1.1 Keep the manual

Keep this manual in a safe place and make sure it is available for the users of this product at any time.

5.1.2 Provide the manual

In case of selling the instrument this manual shall be provided to the purchaser since it is a part of the standard delivery.

6 Liability disclaimer

The manufacturer reserves the right to change the contents of this document including this liability disclaimer without prior notice and cannot be held responsible in any way for possible consequences resulting from such changes.

For connection, initial start-up and operation as well as maintenance of the unit the following information and higher legal regulations of the respective country (in Germany e. g. VDE regulations) such as applicable Ex regulations as well as safety requirements and regulations in order to avoid accidents shall be observed. The safety-related values of the connected MPX shall comply with the technical specifications or the specifications contained in the according EC type examination certificate.

Interconnecting several active devices within an intrinsically safe circuit may result in different safe maximum values. In such cases the intrinsic safety may be impaired!

All operations on the device which go beyond installation or connection measures in principle shall be carried out by NIVUS staff or personnel authorised by NIVUS due to reasons of safety and guarantee.

Operate the MPX only in technically perfect working order.

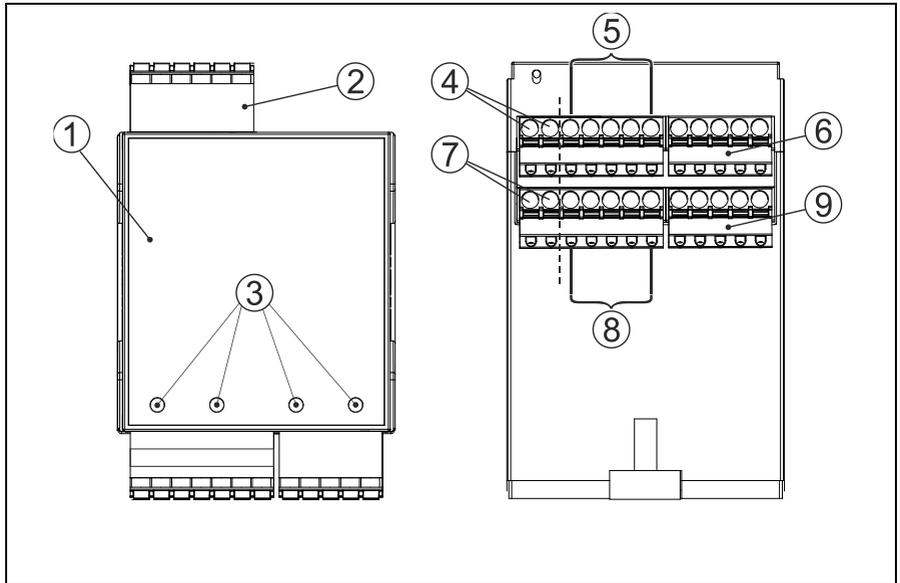
Improper Use

Not being operated in accordance with the requirements may impair the safety. The manufacturer is not responsible for failures resulting from improper use.

Product description

7 Overview and intended use

7.1 Overview



- 1 Device enclosure
- 2 Connection to the transmitter NivuFlow
- 3 LEDs Sensors (optical voltage signal)
- 4 Connection 2-wire-sensor 1 (HART)
- 5 Connection air ultrasonic sensor type OCL
- 6 Connection v-sensor 1 (water-cross correlation or surface radar OFR)
- 7 Connection 2-wire sensor 2
- 8 Connection v-sensor 2
- 9 Connection v-sensor 3

Fig. 7-1 Overview of Multiplexer MPX

7.2 Device identification

All information in this technical instruction is valid only for the type of unit indicated on the title page.

A type label is indicated on the housing and contains the following:

- Name and address of manufacturer
- CE label
- Type labelling and series identification (serial number)
- Year of manufacture

It is important for queries and replacement part orders to specify type, year of manufacture and serial number (article no. if necessary). This ensures correct and quick processing.



Note

Check the device nameplate to ensure that the device is delivered according to your order.

Check if the correct supply voltage is printed on the nameplate.

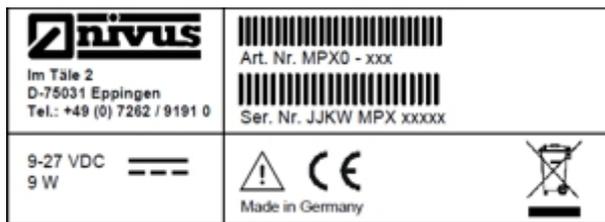


Fig. 7-2 Nameplate of Multiplexer MPX

8 Specifications

Power supply	12...24 V DC (from transmitter NivuFlow or via an external adapter)
Power consumption (total)	max. 9 W
Power consumption	max. 1.5 W (typical 1.2 W)
Protection degree	IP20, for installation in areas up to maximum pollution degree 2
Operating temperature	-20...+70 °C
Storage temperature	-20...+85 °C
Max. humidity	95 %, non-condensing
Inputs (incl. options)	<ul style="list-style-type: none"> - 2x analog 4-20 mA loop-powered sensor connection, one of them HART-compatible - 4x sensor connection with RS485 interface Isolation voltage $U_m = 253 \text{ V AC}$
Outputs	1x transmitter connection RS485 interface

Table 2 Specifications

Storing

When storing, protect the MPX from corrosive or organic solvent vapours, radioactive radiation and strong electromagnetic radiation.

9 Equipment

9.1 Delivery

The standard delivery of the MPX contains:

- One Multiplexer MPX - according to delivery note
- Technical Instruction with the EC Declaration of Conformity - where all necessary steps to correctly install and to operate the MPX are listed

Check additional accessories depending on your order and by using the delivery note.

9.2 Receipt

Check the delivery according to the delivery note for completeness and intactness immediately after receipt. Report any damage in transit to the carrier instantly.

Send an immediate, written report to NIVUS GmbH in Eppingen as well.

Incomplete delivery shall be directly reported to the headquarters in Eppingen or your local distributor in written form within two weeks.



Note

Mistakes cannot be rectified later.

9.3 Transport

Protect the MPX from shock and impact loads and vibrations. The transportation must be carried out in the original packaging.

9.4 Return

The units must be returned at customer cost to NIVUS Eppingen in the original packaging free of charge.

Returns with insufficient postage will not be accepted.

9.5 Installation of spare parts and parts subject to wear and tear

We herewith particularly emphasize that replacement parts or accessories, which are not supplied by us, are not certified by us, too. Hence, the installation and/or the use of such products may possibly be detrimental to the device's ability to work.

Damages caused by using non-original parts and non-original accessories are left at user's risk.

Construction and functions

10 Enclosure dimensions

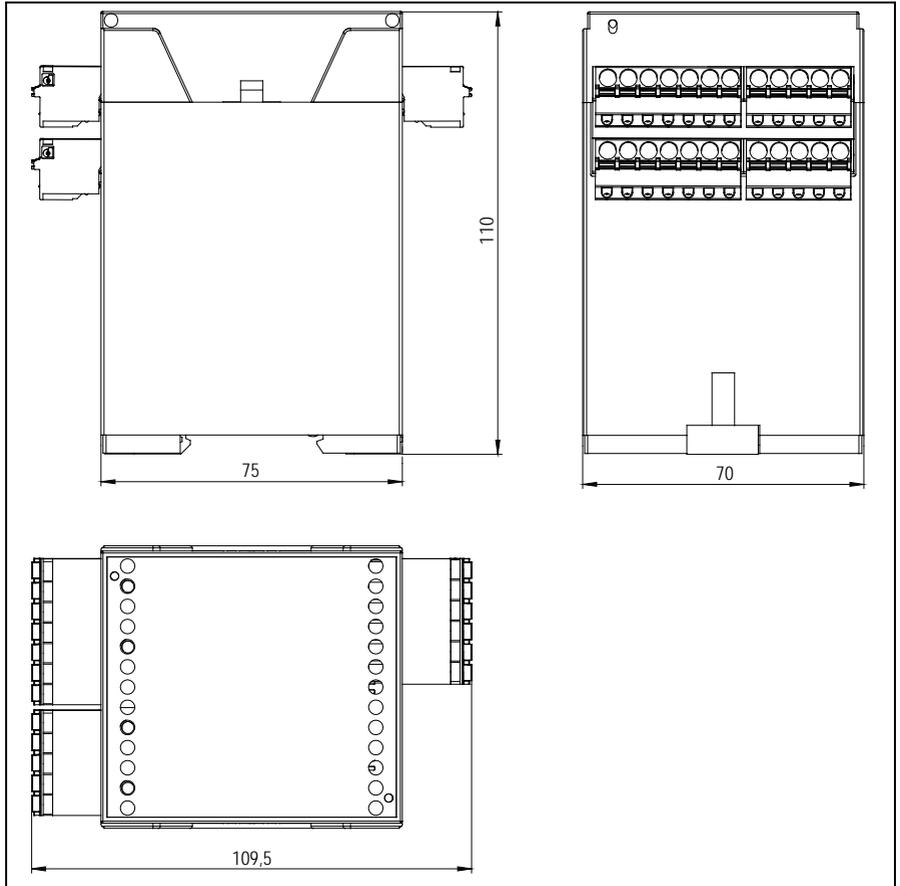


Fig. 10-1 **Dimensions DIN rail enclosure**

11 Functional descriptions

The MPX is an intelligent electronic module between one or more sensors and a type NF750 transmitter.

If used in connection with multiple sensors the MPX on site or in proximity to the sensor serves as multiplexer. Therefore, the MPX reduces the number of required sensor cables between sensors and transmitter to merely one cable.

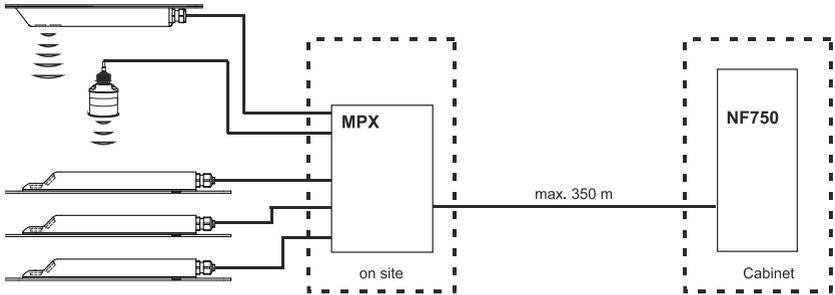


Fig. 11-1 Using MPX for less cables

Up to three flow velocity sensors (water-cross correlation or surface radar OFR), one OCL air-ultrasonic sensor and two 4-20 mA sensors (one using HART protocol) (or two 4-20 mA signals from external level transmitters) can be connected to a MPX.

Connected with an auxiliary relay and external power supply on site, the MPX serves as line driver. This combination in connection with an appropriate cable allows cable lengths of up to 1000 m between MPX and NF750 transmitter.

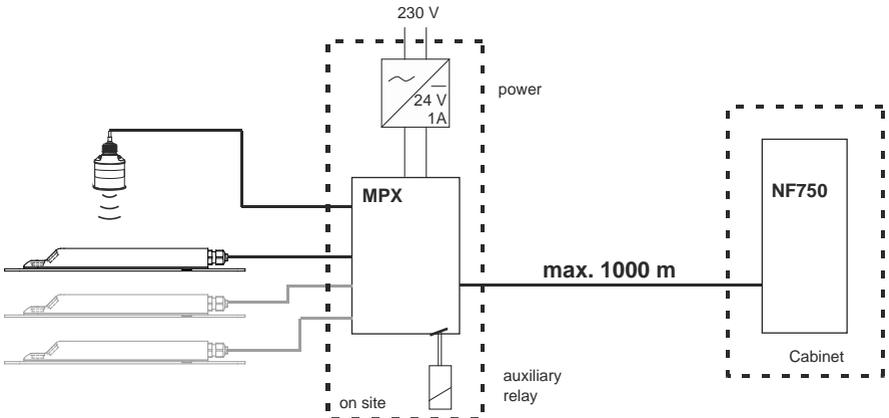


Fig. 11-2 Using MPX as line driver

If you wish to use more than 3 flow velocity sensors with a NivuFlow 750 type M9 transmitter simultaneously it is necessary to use sufficient multiplexers.

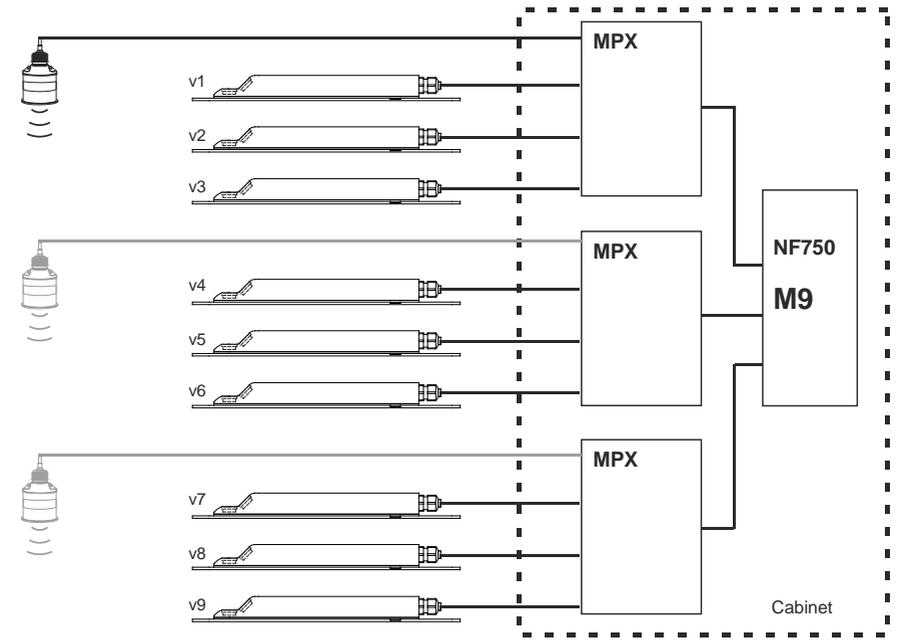


Fig. 11-3 MPX with more than 3 v-sensors

11.1 Connectable sensors to a MPX

NIVUS velocity sensors:

- POA-V2
- CS2
- EBM-Box (Electronic box Mini)
- OFR-EV

NIVUS level sensors:

- OCL-L1
- i-series sensor
- NivuCompact
- NivuBar

The MPX intrinsically safe supplies the sensors mentioned above with power and ensure reliable data transmission between sensors and the type NF750 transmitter within the limits of its technical specifications.

Depending on the wiring, the MPX is either supplied by the NivuFlow 750 transmitter or by an external power adapter (see also Fig. 11-2).

Installation and connection

12 Installation instructions

- Observe appropriate installation.
- Follow applicable legal or operational guidelines.

Inappropriate use may result in injuries and/or damage on instruments.

12.1 Hints to avoid electrostatic discharge (ESD)

ATTENTION *ESD Risks*



Maintenance procedures which do not require power supply of the instrument shall not be executed before the unit has been disconnected from mains power in order to minimise danger and ESD risks.

Disconnect the MPX from mains power!

The sensitive electronic components inside the unit may get damaged by static electricity. The manufacturer recommends the following steps to prevent the device from getting damaged due to electrostatic discharge.

- Discharge static electricity from your body before touching the instrument's electronic components.
- Avoid unnecessary movements to reduce the risk of building up static electricity.

12.2 Installation place

The MPX with DIN rail fastening is conceived for installation in switching cabinets.

- Observe adequate ventilation at the installation place e. g. by using a fan or a heat exchanger.

12.3 Installation guidelines

For safe installation the measures below must be taken:

- Do not subject the MPX to excessive vibration or shock.
- Do not install the MPX close to footpaths or travel ways.
- Do not install the MPX close to objects with strong electromagnetic fields (frequency converters, high voltage power lines or similar).

Strictly avoid when installing the device:

- corrosive chemicals or gases
- radioactive radiation
- objects radiating strong heat

12.4 Fastening the MPX



Note

*Mounting materials and tools are **not** parts of the standard delivery.*

- For fastening use a DIN rail type TS35 according to EN 60715 with a minimum length of 70 mm.
- Fasten the rail horizontally in the intended enclosure/switching cabinet by using at least two screws.
- Hook the MPX into the DIN rail from above and then is snapped into place diagonally downwards by exerting slight pressure from the front.

13 Electrical installation

WARNING



Disconnect the unit from mains power

All work on electrical connections may only be carried out with the supply voltage turned off.

Observe electrical data specified on the nameplate.



Note

Observe the national installation instructions.

- For electric installation the regulations in the respective countries must be referred to.
- For installation in wet environments or in areas featuring the risk of flooding it may be necessary to install extra protective measures such as a residual current device (RCD) if required.
- Check if the power supply of the units must be integrated into the facility's emergency shutdown conception.
- Transmitters and sensors shall be installed completely before feeding the supply voltage.
- Make sure that the installation is correct.
- The installation shall be carried out by qualified personnel only.
- Legal standards, provisions and technical regulations need to be observed.

13.1 Connection cable

Between sensor and MPX

Maximum cable lengths between sensors and MPX if using the NIVUS standard cable LiYC11Y 2x1.5 mm² + 1x2x0.34 mm² + PA:

- 150 meters (see Fig. 13-1)
- Use of overvoltage protection elements:
 - Single-side: 135 meters
 - Double-side: 120 meters

Between MPX and transmitter

When installing the MPX directly in a switching cabinet or a field enclosure with a connection to NivuFlow using individual wires (in a cable duct or similar) note the following:

- Observe to lay power lines and frequency-conducting signal lines separated from each other.
- Use a 2-wire, commonly twisted and shielded telecommunications line with a min. cross section of 0.34 mm^2 for RxTx-connections.
- Use individual wires with a minimum cross section of 0.75 mm^2 for power supply.

The maximum cable length in this case is 5 m (see Fig. 13-1).

Use the NIVUS cable LiYC11Y $2 \times 1.5 \text{ mm}^2 + 1 \times 2 \times 0.34 \text{ mm}^2 + \text{PA}$

- for distances longer than 5 m in switching cabinets/field enclosures
- in case of expected signal interferences

When using a cable type LiYC11Y $2 \times 1.5 \text{ mm}^2 + 1 \times 2 \times 0.34 \text{ mm}^2 + \text{PA}$ the maximum distance between MPX and the transmitter is

- 100 m (see Fig. 13-2)
- Use of NIVUS overvoltage protection elements at one or both ends of the line:
 - no influence

For distances up to maximum 350 m between MPX and the NivuFlow transmitter use a telecommunications cable type A2Y(L)2Y $12 \times 2 \times 0.8$ (or higher wire pair) or technically adequate types (see Fig. 13-2).

In such cases observe to extend both RxTx signal cables using one common twisted wire pair.

To supply MPX and sensors with power several wires shall be connected parallel. The number of wires required depends on the distance between MPX and the NivuFlow transmitter.

Note the table below:

Cable length [m]	Min. number of wires required for power supply and ground	Total number of wires required for extension (without reserve)
0 – 50	2 each	6
51 – 75	3 each	8
76 – 100	4 each	10
101 – 150	5 each	12
151 – 200	6 each	14
201 – 250	7 each	16
251 – 300	8 each	18
301 - 350	9 each	20

Table 3 Number of wires when using A2Y(L)2Y XXx2x0.8

Higher numbers of individual wires need to be combined electrically in a short distance before entering MPX and NivuFlow and shall be laid as individual wire with a maximum cross section of 2.5 mm² (clamp or solder connection).



Note

Do not connect more than one wire per cage clamp terminal on MPX and NivuFlow.

For distances of more than 350 m up to a maximum of 1000 m between MPX and NivuFlow transmitter it is necessary to have an additional power supply with 24 V/min. 1 A DC or 230 V AC as well as an appropriate power adapter in addition to the MPX available.

Moreover an appropriate coupling relay is required (see chapter “17 Accessories (option)”).

For such connections either a telecommunications cable type A2Y(L)2Y 10x2x0.8 (or even more wires) or technically adequate types can be used.

In this case observe to extend both RxTx signal cables sharing one twisted pair cable.

The Fig. 13-5 shows how to wire MPX if used as line driver.

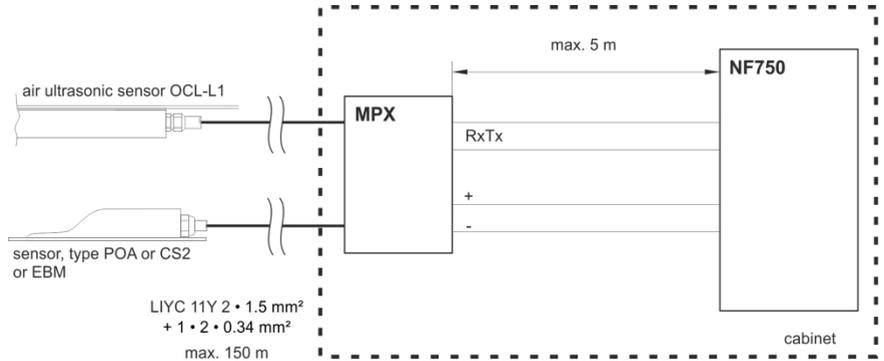


Fig. 13-1 Connection velocity sensor – MPX in cabinet

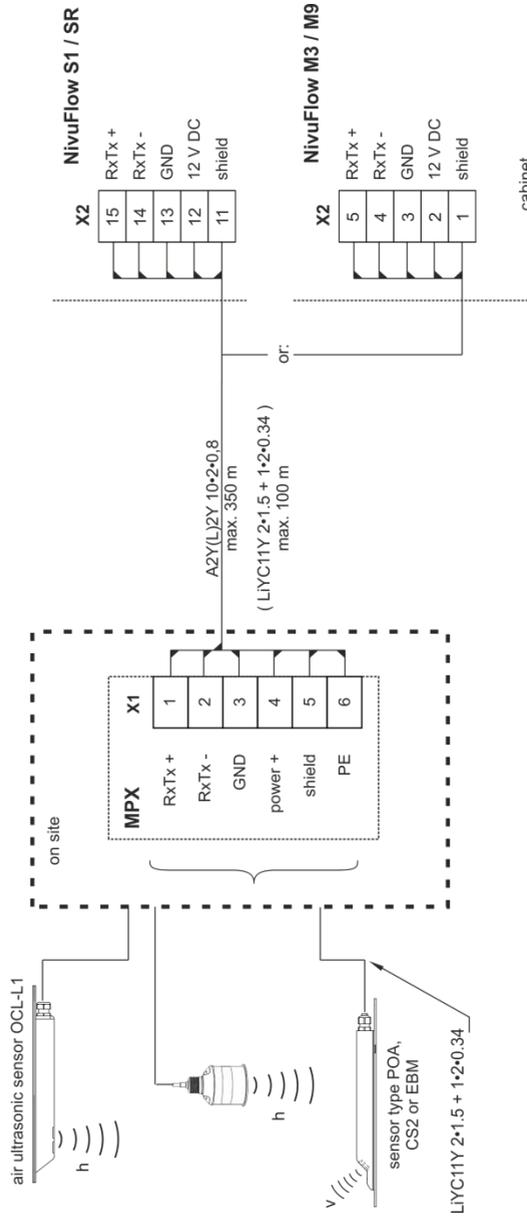


Fig. 13-2 Connection MPX without external power supply to NivuFlow

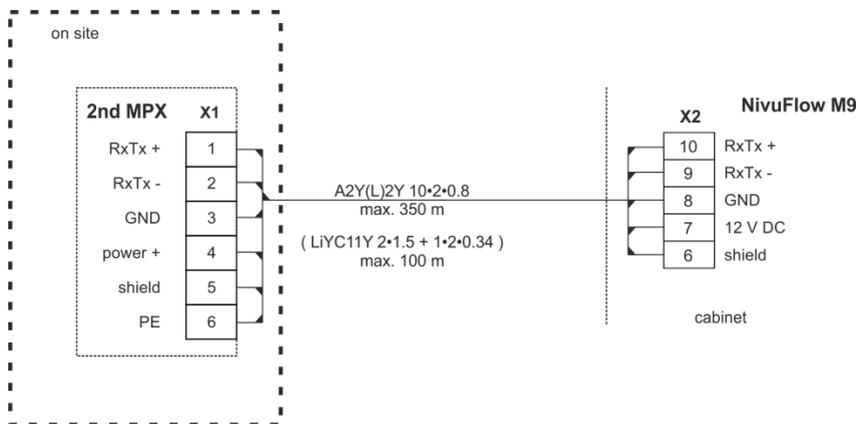


Fig. 13-3 Connection 2nd MPX without power supply to type M9

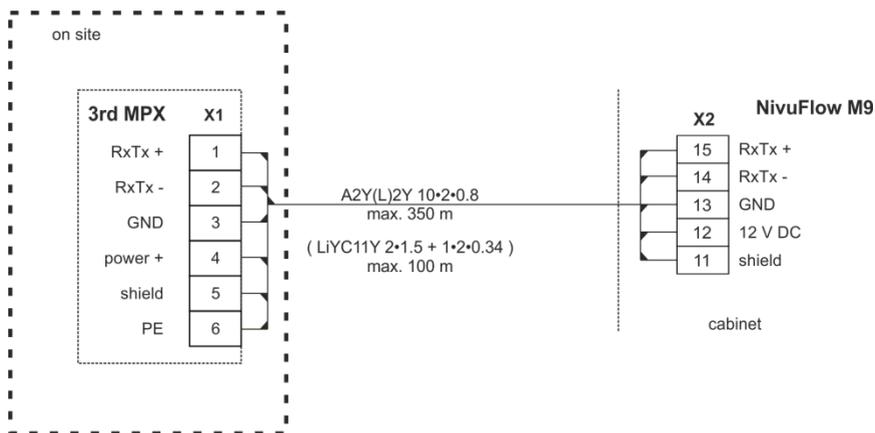
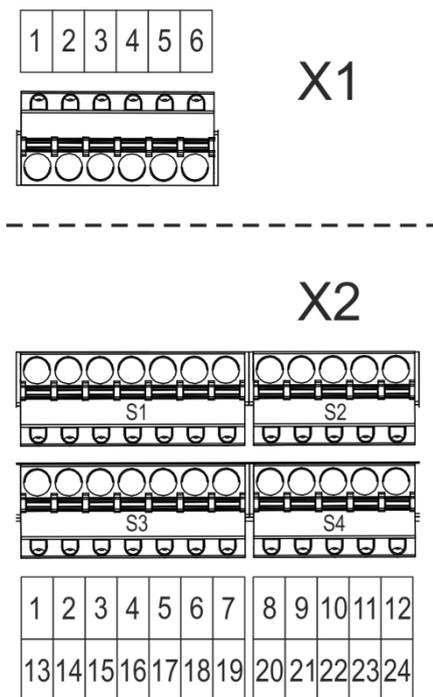


Fig. 13-4 Connection 3rd MPX without power supply to type M9

13.2 Wiring diagram



Terminal block X1 (green)

- 1 Rx/Tx +
- 2 Rx/Tx -
- 3 GND
- 4 12 V DC
- 5 Shield
- 6 PE (Ground)

Terminal block X2 (blue)

- | | |
|---------------|---------------|
| 1 mA 1 + | 13 mA 2 + |
| 2 mA 1 - | 14 mA 2 - |
| 3 Shield | 15 Shield |
| 4 S1 PWR + | 16 S3 PWR + |
| 5 GND | 17 GND |
| 6 S1 Rx/Tx - | 18 S3 Rx/Tx - |
| 7 S1 Rx/Tx + | 19 S3 Rx/Tx + |
| 8 Shield | 20 Shield |
| 9 S2 PWR + | 21 S4 PWR + |
| 10 GND | 22 GND |
| 11 S2 Rx/Tx - | 23 S4 Rx/Tx - |
| 12 S2 Rx/Tx + | 24 S4 Rx/Tx + |

Fig. 13-6 Terminal wiring diagram for MPX

The X1 terminal block section is designed for connection to a NIVUS transmitter. How to connect the six sensors is described in the X2 terminal block section.



Note

For electrical connection observe the device configuration. One copper wire with a maximum cross section of 2.5 mm² can be connected per clamp.

Connection is made by using spring plug terminal clamps.

13.3 Sensor connection to Multiplexer MPX

The sensor cable is connected to the MPX in the terminal block section X2.

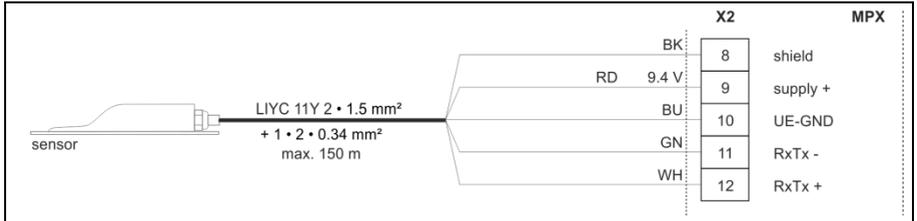


Fig. 13-7 Flow velocity or water-ultrasonic-combi sensor

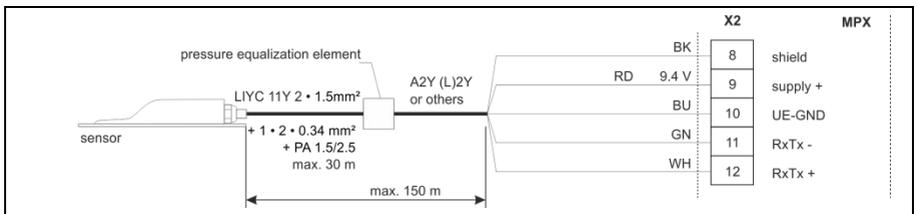


Fig. 13-8 Flow velocity sensor with pressure measurement cell

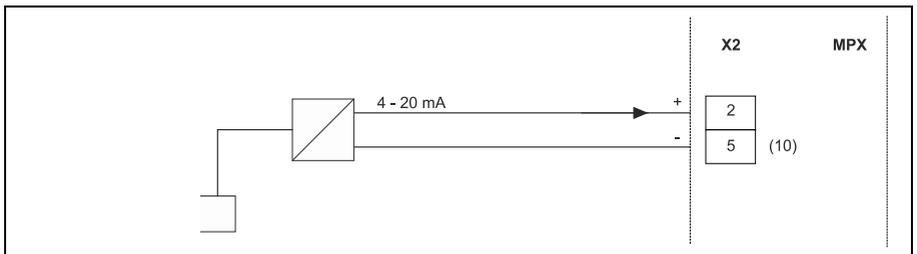


Fig. 13-9 1st external 4-20 mA signal

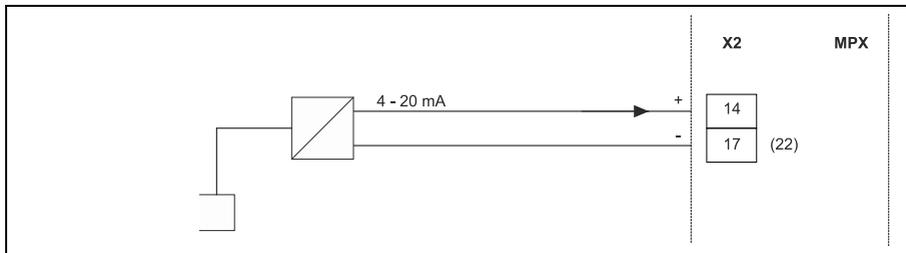


Fig. 13-10 2nd external 4-20 mA signal

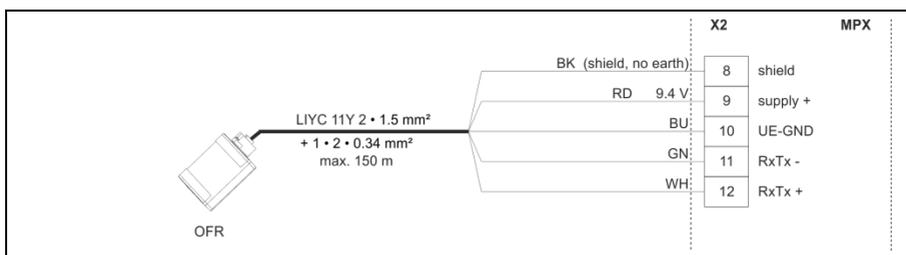


Fig. 13-11 Radar sensor type OFR

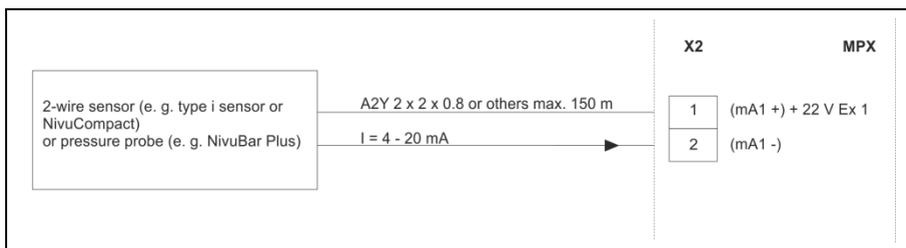


Fig. 13-12 1st 2-wire probe for level measurement

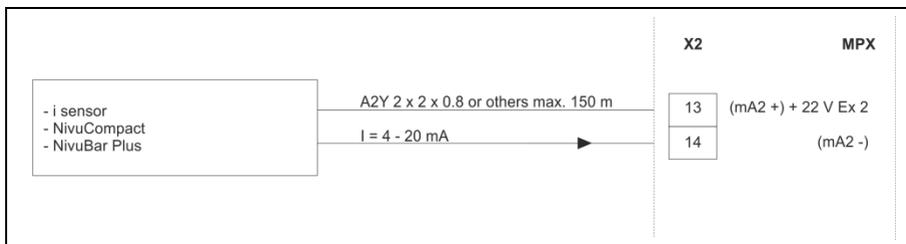


Fig. 13-13 2nd 2-wire probe for level measurement

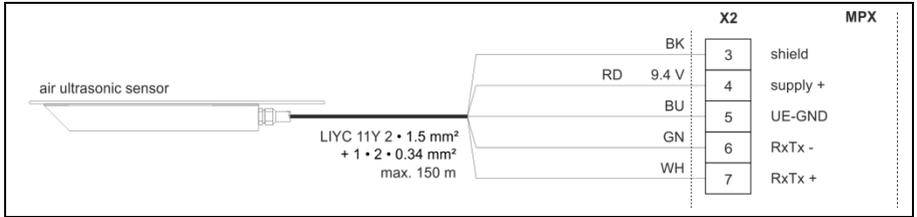


Fig. 13-14 Air-ultrasonic sensor type OCL

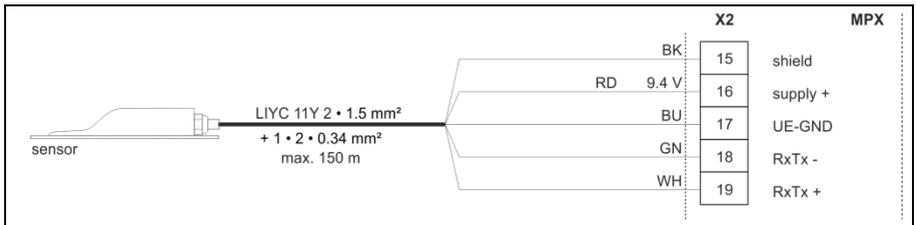


Fig. 13-15 2nd flow velocity sensor

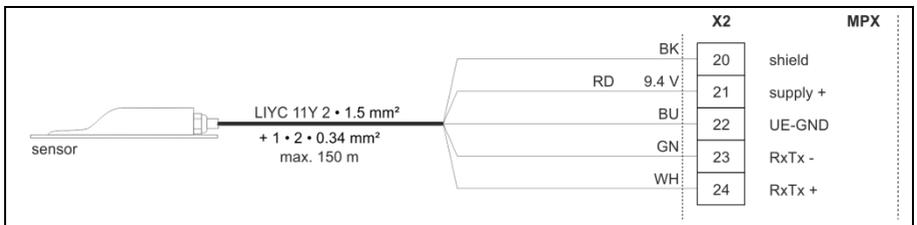


Fig. 13-16 3rd flow velocity sensor

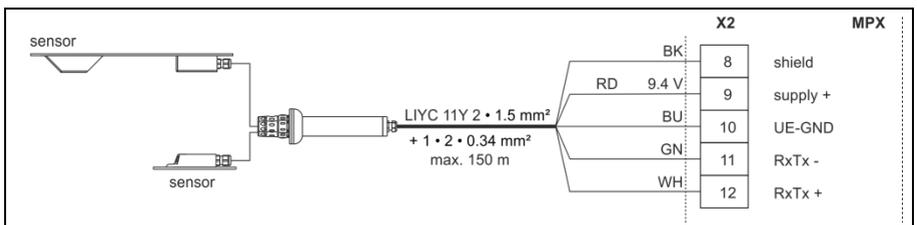


Fig. 13-17 Electronic Box EBM with water-ultrasonic sensor CSM and air-ultrasonic DSM

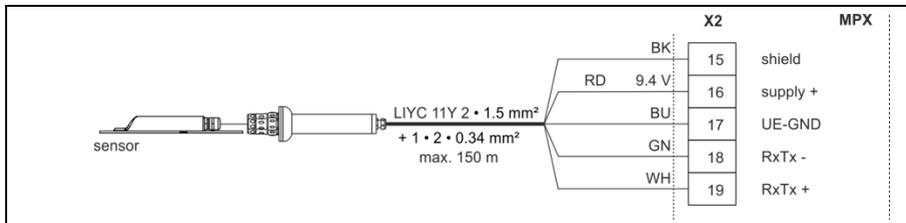


Fig. 13-18 2nd Electronic Box EBM with water-ultrasonic sensor CSM-D

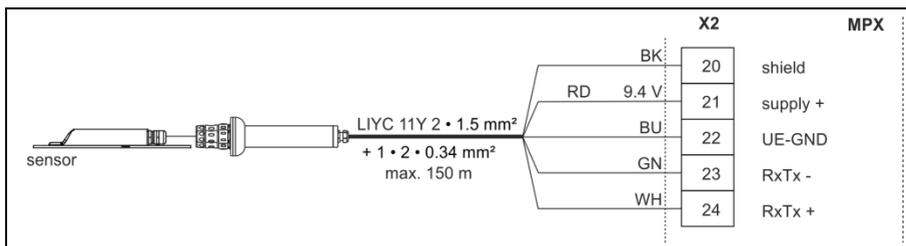


Fig. 13-19 3rd electronic Box EBM with water-ultrasonic sensor CSM-D

13.4 Connection of MPX to NivuFlow transmitter

To connect cables observe the notes in chapter "13.1 Connection cable" as well as Fig. 13-1 to Fig. 13-5.

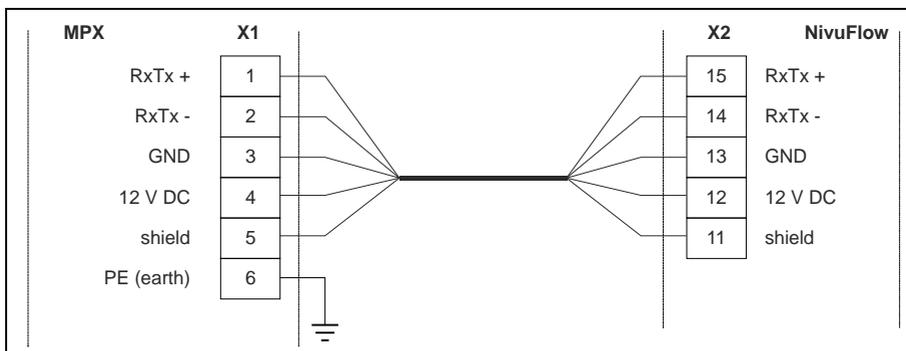


Fig. 13-20 MPX to NF750 type S1 / SR

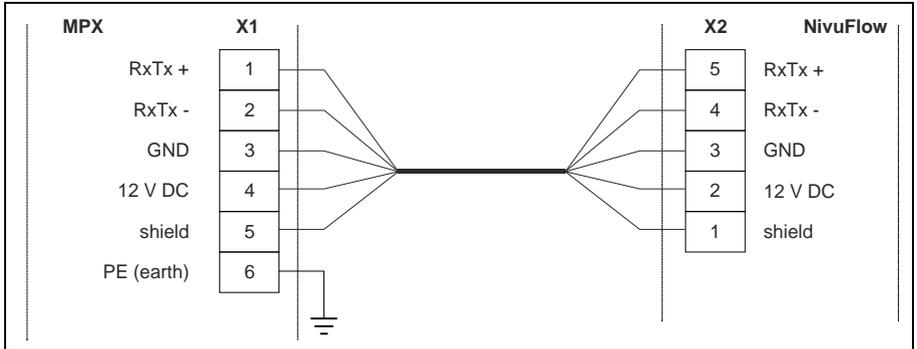


Fig. 13-21 1st MPX to NF750 type M3 / M9

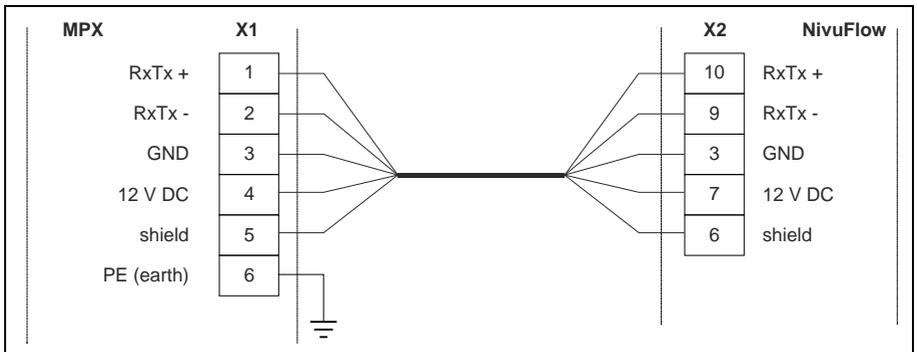


Fig. 13-22 2nd MPX to NF750 type M9

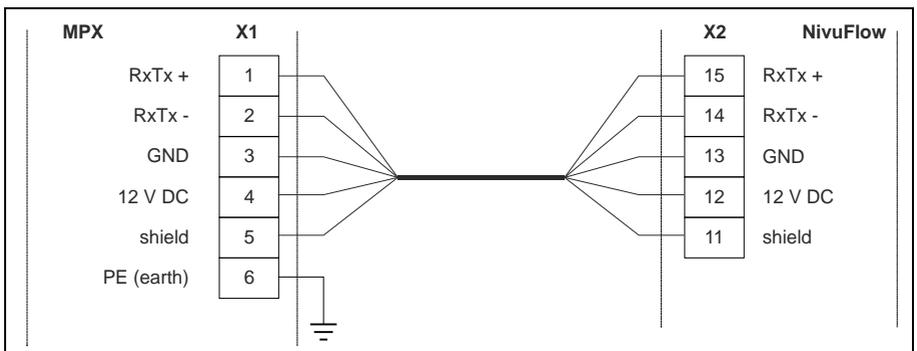


Fig. 13-23 3rd MPX to NF750 type M9

14 Overvoltage protection

For effective protection of the Multiplexer MPX it is necessary to protect power supply as well as mA-inputs and mA-outputs using overvoltage protection devices. NIVUS recommend:

- 2-wire connection:
DataPro 2x1 24/24
- RS485-Sensors (POA, CS2, OCL and OFR):
DataPro 2x1 12/12
SonicPro 3x1 24/24

The flow velocity sensors, the OCL air-ultrasonic sensors and the radar sensor are internally protected against overvoltage within the usual EMC limits. Should you expect higher risk potentials protect the sensors by using the following combination:

- DataPro 2x1 12/12 in connection with SonicPro 3x1 24/24



Note

Observe the non-reversed connection (p-side to transmitter) as well as a correct, straight wiring supply.

Ground (earth) must lead to the unprotected side.

- *Wrong connection suspends the function of the overvoltage protection!*
-

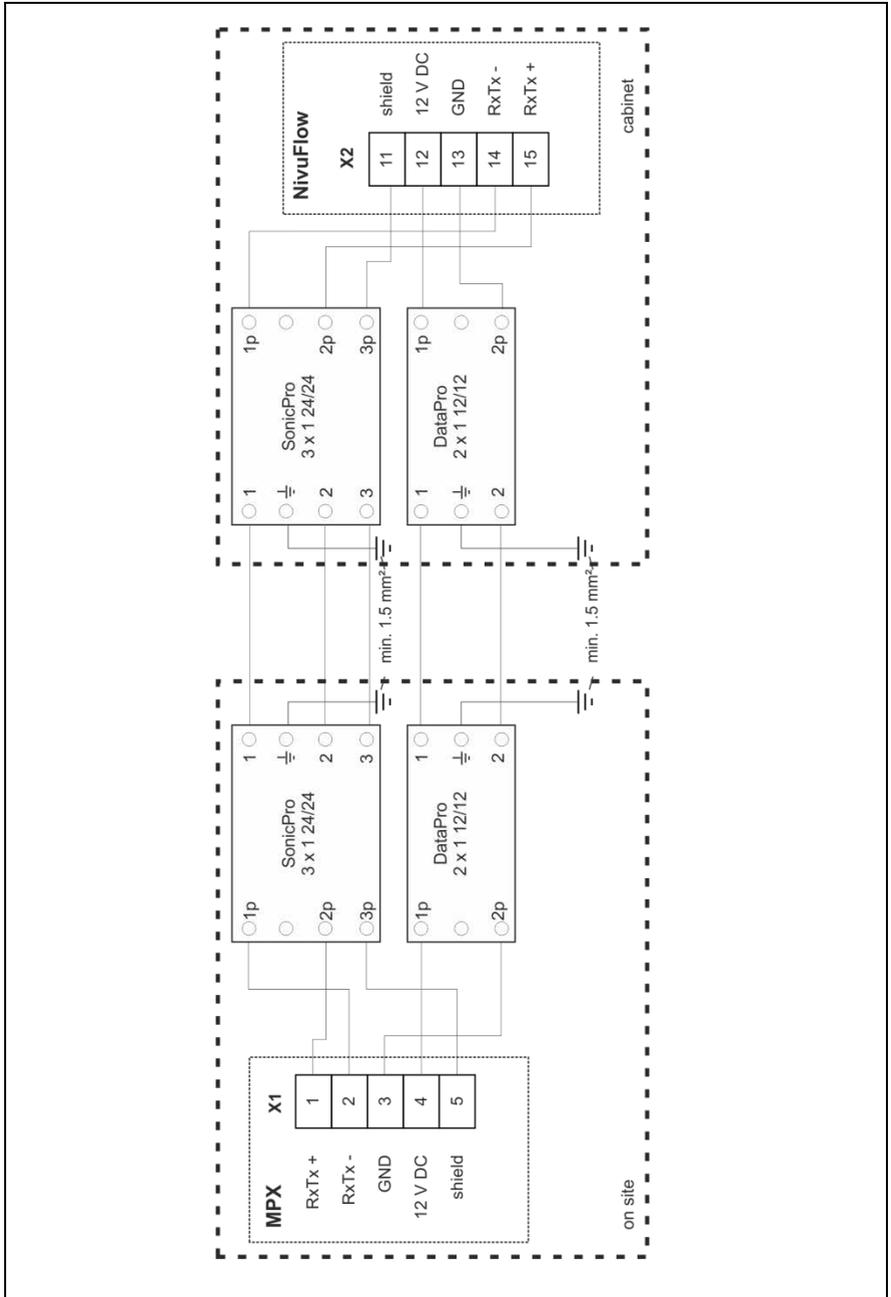


Fig. 14-1 Double-side overvoltage protection MPX - NF 750-S1 / SR

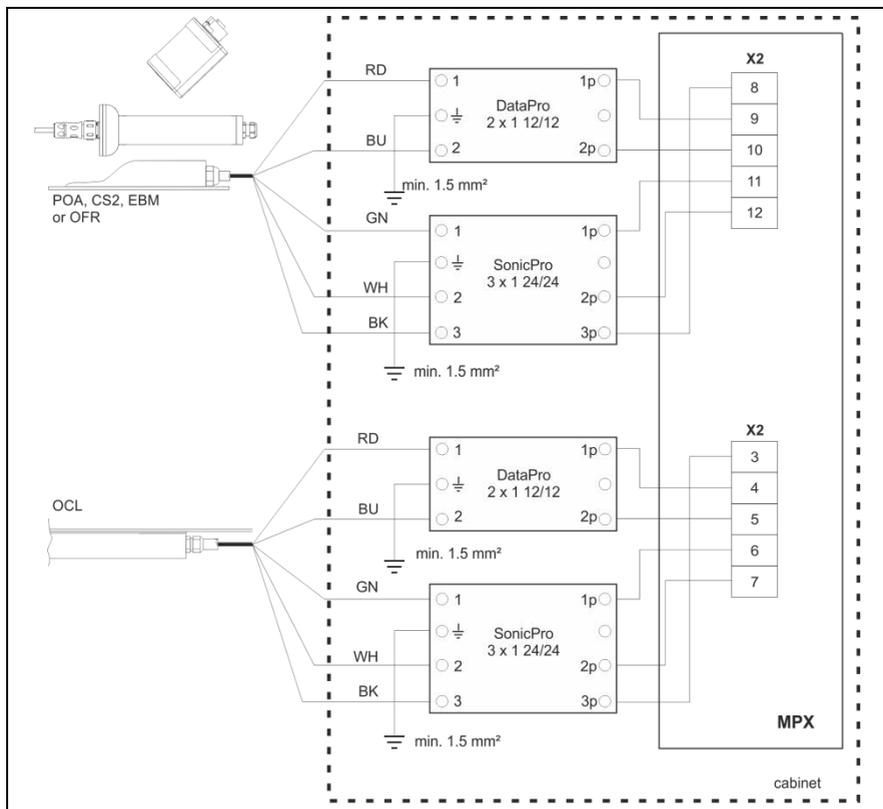


Fig. 14-2 Overvoltage protection sensors - MPX

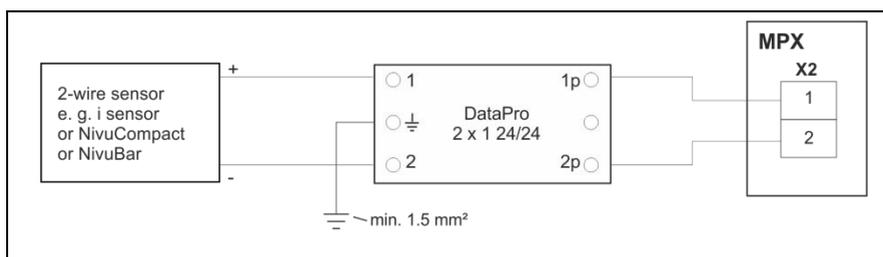


Fig. 14-3 Overvoltage protection 2-wire sensor - MPX

Maintenance and cleaning

15 Maintenance, material wear and cleaning



Disconnect instrument from mains

Disconnect the instrument from power supply before you begin to execute maintenance, cleaning and/or repair works. Repair works shall be executed solely by expert personnel.

Disregarding may lead to electrical shocks.

The MPX is designed to be virtually maintenance-free and free of material wear. If required clean the enclosure with a dry antistatic cloth. Do not use any abrasive cleansing agents.

16 Dismantling/disposal

Improper disposal may be harmful to the environment.

Always dispose equipment components and packaging materials according to applicable local regulations on environmental standards for electronic products.

- Disconnect the MPX from mains power.
- Use appropriate tools to remove the connected cables of the MPX.
- Remove the MPX from the DIN rail.



EC WEEE-Directive

This symbol indicates that the Directive 2012/19/EU on waste electrical and electronic equipment requirements shall be observed on the disposal of the equipment.

17 Accessories (option)

Power adapter OCP0 ZNT GPRS	DIN rail power adapter for MPX; 230 V AC / 24 V AC; 25 VA; IP43
Coupling relay ZUB0 REL 12V	DIN rail relay 21 V DC, 1 SPDT 6 A / 250 V

Emergency

In case of emergency press the **emergency-off button** of the main system.

EU Konformitätserklärung

EU Declaration of Conformity

Déclaration de conformité UE

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Telefax: +49 07262 9191-999
E-Mail: info@nivus.com
Internet: www.nivus.de

Für das folgend bezeichnete Erzeugnis:

For the following product:

Le produit désigné ci-dessous:

Bezeichnung:	Multiplexer für Sensoren im Nicht-Ex-Bereich
<i>Description:</i>	<i>Multiplexer for sensors in non ex area</i>
<i>Désignation:</i>	<i>Multiplexeur pour capteurs en zone non Ex</i>
Typ / Type:	MPX0xxx

erklären wir in alleiniger Verantwortung, dass die auf dem Unionsmarkt ab dem Zeitpunkt der Unterzeichnung bereitgestellten Geräte die folgenden einschlägigen Harmonisierungsvorschriften der Union erfüllen:

we declare under our sole responsibility that the equipment made available on the Union market as of the date of signature of this document meets the standards of the following applicable Union harmonisation legislation:

nous déclarons, sous notre seule responsabilité, à la date de la présente signature, la conformité du produit pour le marché de l'Union, aux directives d'harmonisation de la législation au sein de l'Union:

- 2014/30/EU
- 2011/65/EU

Bei der Bewertung wurden folgende einschlägige harmonisierte Normen zugrunde gelegt bzw. wird die Konformität erklärt in Bezug die nachfolgend genannten anderen technischen Spezifikationen:

The evaluation assessed the following applicable harmonised standards or the conformity is declared in relation to other technical specifications listed below:

L'évaluation est effectuée à partir des normes harmonisées applicable ou la conformité est déclarée en relation aux autres spécifications techniques désignées ci-dessous:

- EN 61326-1:2013

Diese Erklärung wird verantwortlich für den Hersteller:

This declaration is submitted on behalf of the manufacturer:

Le fabricant assume la responsabilité de cette déclaration:

NIVUS GmbH
Im Täle 2
75031 Eppingen
Allemagne

abgegeben durch / *represented by / faite par:*

Marcus Fischer (Geschäftsführer / *Managing Director / Directeur général*)

Eppingen, den 20.04.2016

Gez. *Marcus Fischer*