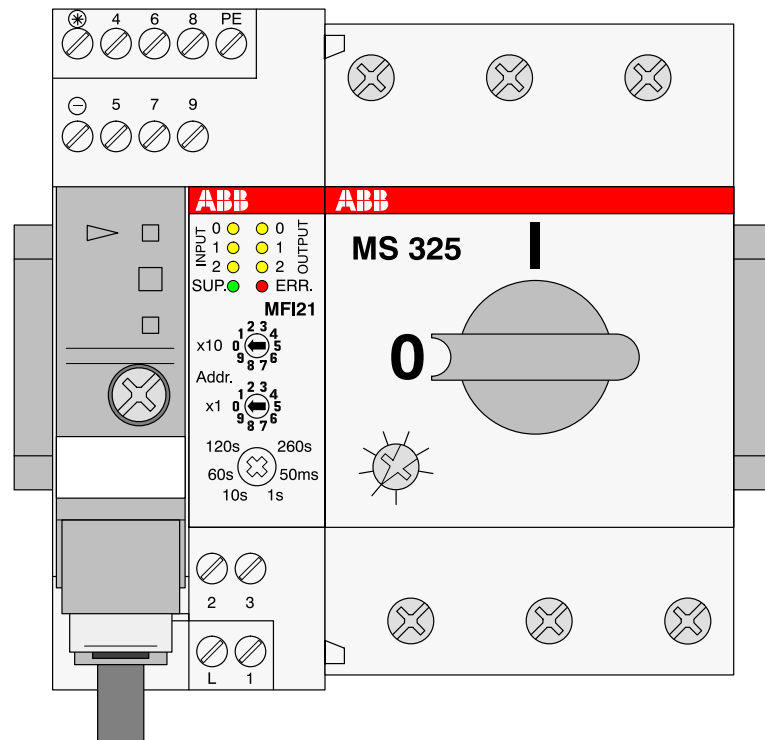




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Motor Starter Fieldbus Interface MFI21-FBP



Motor Starter Field Bus Interface

MFI21-FBP

Technical description

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FieldBus interface for coupling to an ABB motor protecting switch MS 325, motor controller with 3 digital inputs, 1 mechanically coupled input and 3 digital outputs

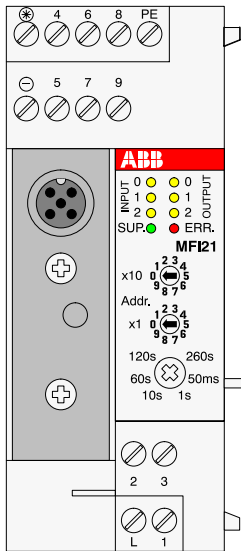


Fig. 1: Motor starter field bus interface MFI21-FBP

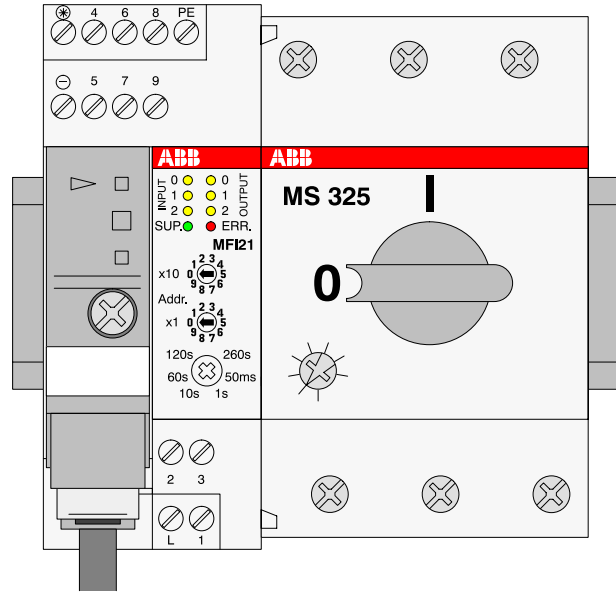


Fig. 2: MFI21-FBP with FieldBusPlug and motor protecting switch MS 325

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Motor Starter Field Bus Interface

MFI21-FBP

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Purpose

The Motorstarter Fieldbus Interface MFI21-FBP establishes together with the FieldBusPlug a connection between a fieldbus and the manual motor starter MS 325 in order to control a 3-phase AC motor.

The MFI21-FBP has three digital inputs, whose signal states are always forwarded to the fieldbus. The switching position (on/off) of the manual motor starter is mechanically detected and then also output to the fieldbus. The relay outputs are intended for performing control functions and thus only partly controllable by the fieldbus.

The functions of the MFI21-FBP, mainly the control functions, are set by parameters. If, for example, the star-delta start function is parameterized, the three outputs control the three motor contactors. After reception of a start command via the fieldbus, the MFI21-FBP automatically performs a star-delta start and uses the preset times here. The entire sequence is monitored by the device.

The MFI21-FBP is clipped to a manual motor starter MS 325. Then they are together mounted onto a DIN rail. The internal circuitries and - selectable - also the inputs are powered from the fieldbus (see also Digital Inputs).

Terminals, indicators and operating elements on the front plate

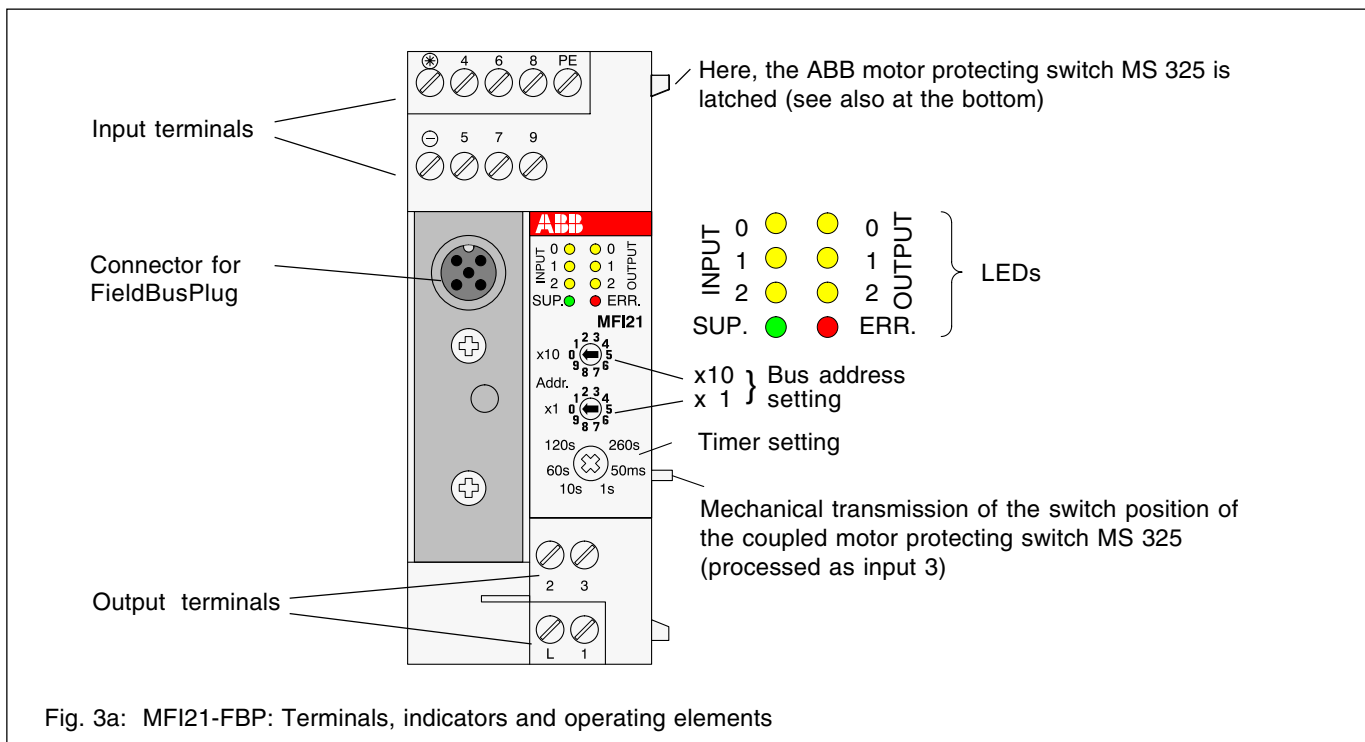


Fig. 3a: MFI21-FBP: Terminals, indicators and operating elements

Description of the elements

Digital inputs

Using the terminals 4 to 9, three digital input signals (e.g. feedback from contactors or position switches) can be connected. The power supply for the digital inputs is provided internally by the FieldBusPlug or by an external power supply 24 V DC (see external wiring in Fig. 3b). By using optical couplers the digital inputs group is potential-separated from the remaining parts of the unit. However, the inputs are not separated against each other.

Note:

If the power supply is provided internally via the bus, the 24 V DC voltage is directly routed to outside. Then the wiring of the inputs must be carried out very carefully. Otherwise dangerous voltages or different potentials can be distributed via the bus.

The following must be observed when planning with an external power supply:

The terminals 4, 6 and 8 are internally bridged (internal 24 V DC supply for the inputs) and may not be connected to the external power supply. When using an external power supply, the bridge between terminals (*) and (-) must be removed.



Motor Starter Field Bus Interface

MFI21-FBP

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Mechanically coupled input

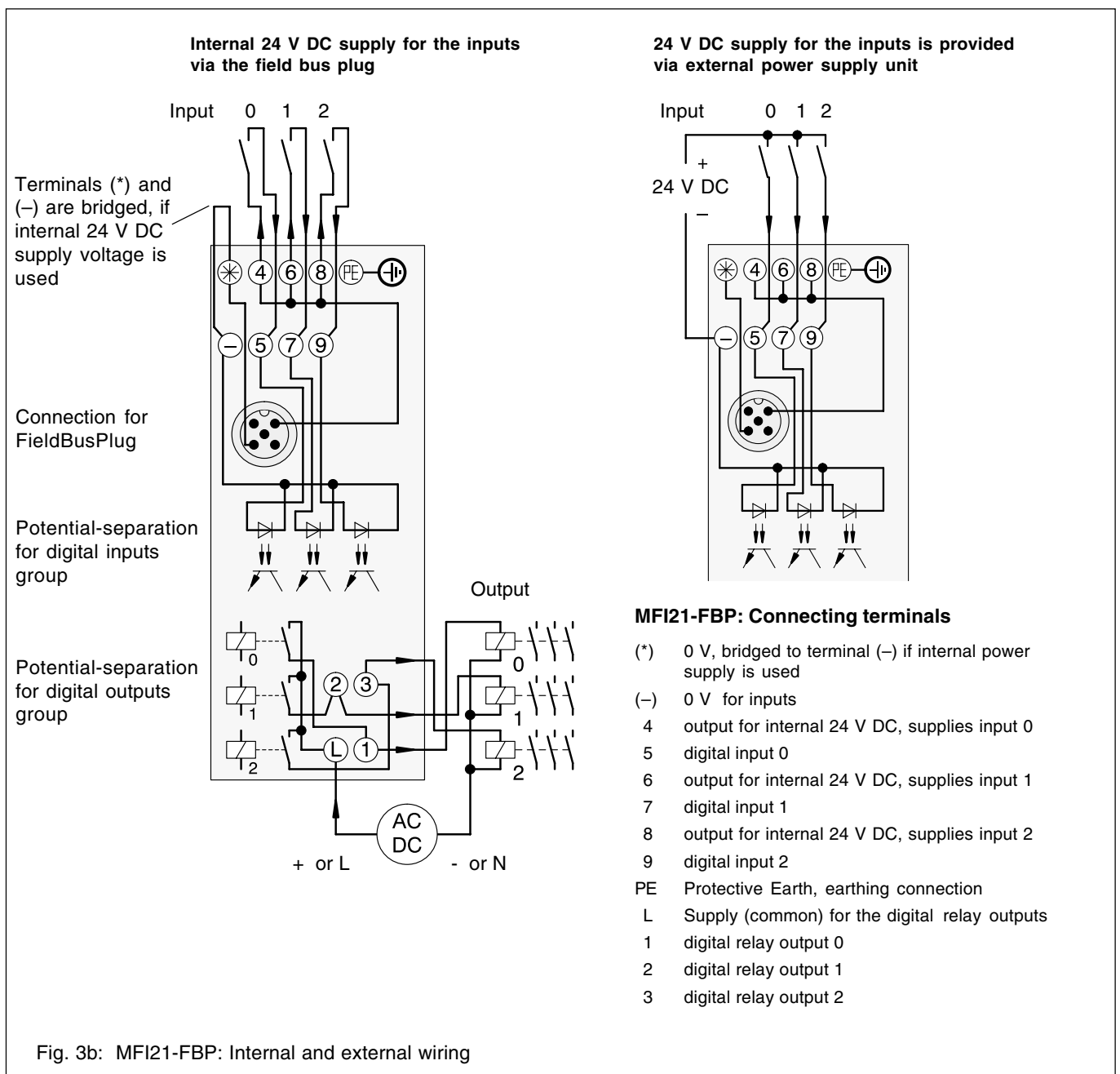
Using this input the switch position of the coupled motor protecting switch MS 325 is transmitted. The switch position of the motor protecting switch MS 325 is mechanically transmitted to the MFI-FBP and internally evaluated as digital input 3.

Earthing

Use terminal PE for connecting the unit to earth.

FieldBusPlug connector

The field bus plug is plugged into this connector and fixed using the supplied fixing screw.



When using an external 24 V DC power supply, the bridge between terminals (*) and (-) must be removed. The terminals 4, 6 and 8 are internally bridged (internal 24 V DC supply for the inputs) and may not be connected to the external power supply.



Motor Starter Field Bus Interface

MFI21-FBP

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Digital outputs

By using relays, the digital outputs group (terminals 1, 2 and 3) is potential-separated from the remaining parts of the unit. However, the outputs are not potential-separated against each other.

They have a common voltage supply via terminal L. The relay contacts are able to switch DC or AC voltages in the range of 24 V to 230 V. When switching inductive loads, additional measures for spark suppression are required. When switching contactor coils with diode rectifier, these diodes already represent a suitable measure for demagnetization.

LEDs

The digital inputs and outputs are indicated by yellow LEDs. LED on means "switched-on" or "1 signal".

The presence of the internally generated 5 V supply voltage is indicated by a green LED.

If the unit detects an error, this is indicated by a red LED.

Setting the bus address

An address must be set on every field bus plug. The possibilities for setting the address vary depending on the type of field bus. Once the address is set it is stored in the field bus plug, even in case of supply voltage breakdown.

On the MFI21-FBP, the bus address of the field bus plug can be set manually using two rotary switches. The upper rotary switch sets the tens of the bus address, the lower switch sets the units.

If supported by the field bus type, the field bus plug takes over the address which was set with the address switches on the MFI.

This method of setting the address is not supported by all field bus plug types (e.g. AS-i). In such cases the bus address of the field bus plug must be set using other methods (refer to chapter "Addressing").

Motor Starter Field Bus Interface MFI21-FBP

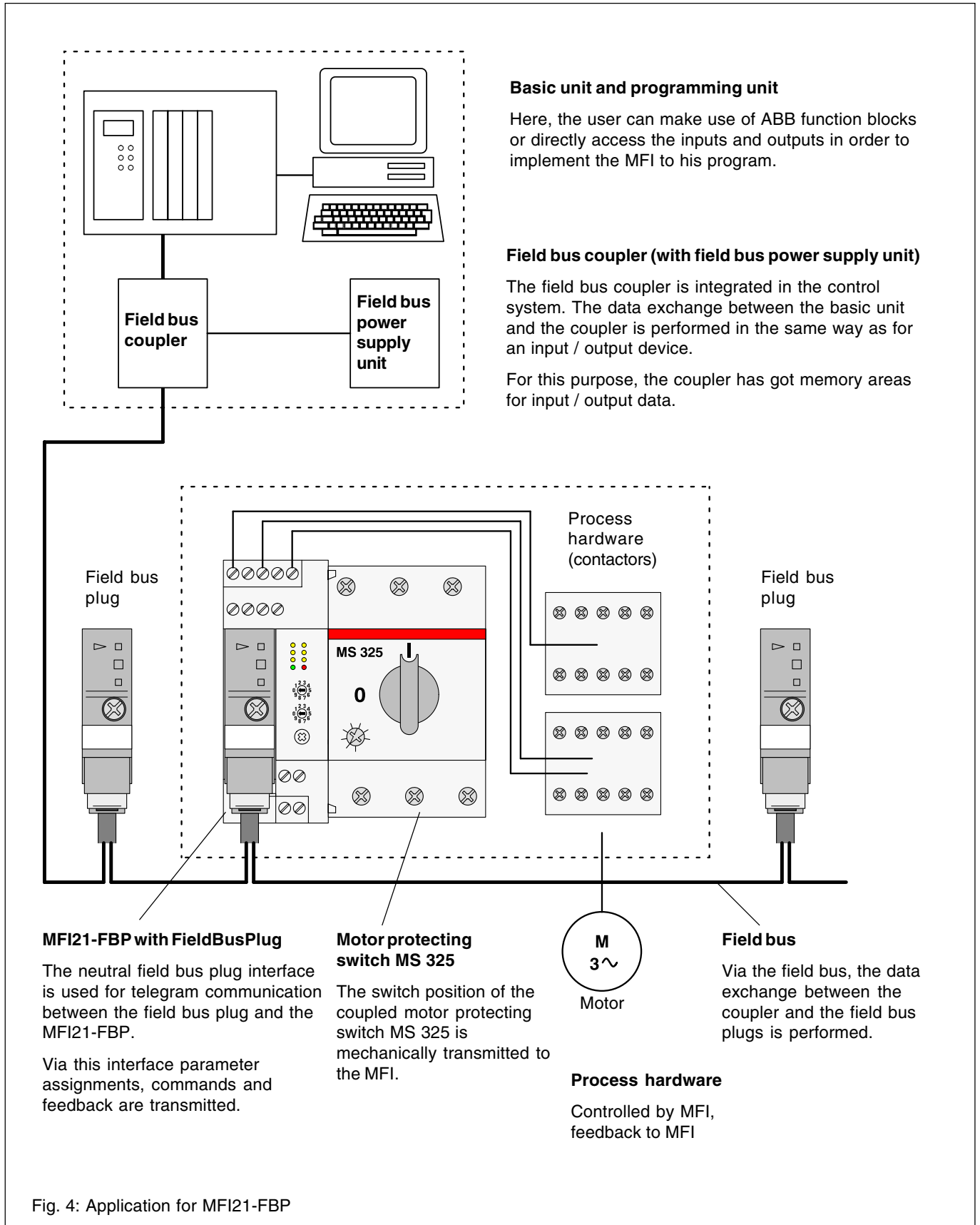
Technical description



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Electrical connection

Fig. 4 shows the position of the MFI21-FBP inside the control system.





Motor Starter Field Bus Interface

MFI21-FBP

Technical description

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Addressing

Addressing of the MFI21-FBP is performed at the connected field bus plug. In the field bus plug, the address is stored voltage breakdown-safe. Due to this, already addressed field bus plugs may not be plugged to other terminal devices.

The following methods can be used for addressing:

- **Addressing with the address switches of the MFI (not when used on AS-Interface bus)**

If supported by the field bus type, the field bus plug takes over the address which was set with the address switches on the MFI.

The bus address of the field bus plug is set manually using the two rotary switches. The upper rotary switch sets the tens of the bus address, the lower switch sets the units.

This setting always has priority and overrides other settings.

If addressing is not possible this way, the address can be set using the following methods:

- **Addressing via an infrared interface (only for AS-Interface)**

The infrared adapter is put directly onto the front plate of the field bus plug to transmit the desired address. The infrared interface is operated via a programming unit.

- **Addressing using a handheld programming unit**

The address is set on the field bus plug by means of the programming unit. For this purpose, the cable of the field bus plug is disconnected from the bus and then connected to the handheld programming unit. **(not when used on AS-Interface bus)**

- **Addressing via the field bus**

In this case, the address is transmitted from the controller to the field bus plug via the field bus (refer to corresponding FBP FieldBusPlug description).

Motor Starter Field Bus Interface

MFI21-FBP

Technical description



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Parameterization

By means of the parameter telegram, at the MFI21-FBP the following can be set:

- Control function, e.g. star-delta starter (parameter No. 0101)
- Behaviour of the relay outputs if the bus connection fails (0101)
- Start-up time for star-delta start or interlocking time for changing direction (0207)

The setting of the parameters is described in the bus-specific software descriptions (e.g. AS-Interface functions).

Setting the control functions and the behaviour when the bus fails (parameter No. 0101)

The MFI21-FBP can only operate and accept a switching command after it has been parameterized with a control function. Parameters are stored in the MFI21-FBP as long as the supply voltage is on. They must be set again via the fieldbus with every new power-on. With most of the fieldbus types, this will be done automatically.

The parameters “control function” and “behaviour when the bus fails” are combined under the parameter No. 0101.

| Parameter value | Control function |
|-----------------|---|
| 0 | No valid operating mode (default setting) |
| 1 | Direct starter. Fallback behavior: MFI21 outputs are switched off |
| 2 | Direct starter. Fallback behavior: MFI21 outputs remain in previous state |
| 3 | Reversing starter. Fallback behavior: MFI21 outputs are switched off |
| 4 | Reversing starter. Fallback behavior: MFI21 outputs remain in previous state |
| 5 | Star-delta starter. Fallback behavior: MFI21 outputs are switched off |
| 6 | Star-delta starter. Fallback behavior: MFI21 outputs remain in previous state |
| 7 | Transparent mode, not possible for AS-Interface bus |

Setting of the timer (parameter No. 0207)

The setting of the star-delta delay or the interlocking time when changing direction can be performed in the following ways:

- Adjusting the built-in potentiometer:
Left-most position 50 ms, right-most position 260 s, between in squared progression referred to the set angle.
- Parameterization via the fieldbus, parameter 0207:
Here, the potentiometer must be turned to the left-most position. Otherwise the value from the fieldbus is ignored.

In the control system, the time value of 260 s corresponds to the numerical value of 260'000. Greater values cause error messages which disappear with entering correct values.

The parameterization of time values is not possible with all fieldbusses.



Motor Starter Field Bus Interface

MFI21-FBP

Technical description

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Assembling and disassembling MFI21-FBP with ABB motor protecting switch MS 325

Assembling

- Switch the motor protecting switch MS 325 to position 0.
- Insert the MFI21-FBP from the front side and then press it downwards gently; pay attention that the dog of MFI21-FBP correctly locks at the MS 325.
- On the rear side, fasten the MFI21-FBP to the MS 325 using the two brackets supplied with the MFI21-FBP.
- Switch the MS 325 at least one time to position 1 and back to position 0.

Disassembling

- Switch the motor protecting switch MS 325 to position 0.
- Remove the two brackets from the rear sides of the devices.
- Put apart MFI21-FBP and MS 325 at their lower edges.
- Withdraw MFI21-FBP from MS 325 to the upper side.

Installing auxiliary contacts between the MFI21-FBP and the MS 325 is not allowed.

Replacement of a defective MFI21-FBP

A defective MFI21-FBP can be replaced without any problems. After disconnecting cables and the FieldBusPlug, the motor protecting switch can be dismantled.

The new combination of MS 325 and MFI21-FBP (see mounting hints on page 6) can now be connected to cables and FieldBusPlug.

After the FieldBusPlug and its address are detected by the master, the master loads the parameters for the slave.



Meaning of input/output signals of the MFI21-FBP

DO0, DO1, DO2

These signals (commands) are received by the MFI via the bus.

Output 0, output 1, output 2

These relay output signals are generated by the MFI. The output signals are derived from the commands DO0, DO1 and DO2 in dependence of the control function. These outputs are used for controlling the process (contactors, drives, etc).

DI0, DI1, DI2, DI3

These signals are generated by the MFI and sent back via the bus. The signals depend on the control function, the commands received via the bus and the feedback from the process.

Input 0, input 1, input 2, input 3:

Via the inputs the MFI receives the feedback from the process. The reaction of the MFI to the feedback depends on the control function. Input 3 mechanically acquires the switch position of the coupled motor protecting switch. The switch position is internally converted by the MFI into an electric signal.

Errors which cause the MFI21-FBP to switch-off the relay outputs

The MFI21-FBP can only be used together with the ABB motor protecting switch MS 325. All three relay outputs are simultaneously switched off, if the motor protecting switch MS 325 trips or is manually switched off.

When the mechanical connection to the ABB motor protecting switch MS 325 is missing, all outputs of the MFI21-FBP are permanently switched off.

The following cases also cause the relay outputs to be switched off:

- No feedback received from the contactor (within a set time period) although it was activated.
- Feedback from contactor = 1 although it is not activated.
- Feedback from contactor becomes 0 although it is still activated.
- Breakdown of the 24 V DC voltage on the bus.
- Breakdown of the 24 V DC voltage from external power supply unit (supply voltage for the inputs).
- Breakdown of the 24...230 V AC/DC control voltage (supply voltage for the output relays).
- Communication error between MFI21-FBP and the field bus plug (without fallback).
- Communication error between the field bus plug and the bus master (without fallback).



Motor Starter Field Bus Interface

MFI21-FBP

Technical description

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Control function

Direct Starter (1 motor, 1 direction of rotation)

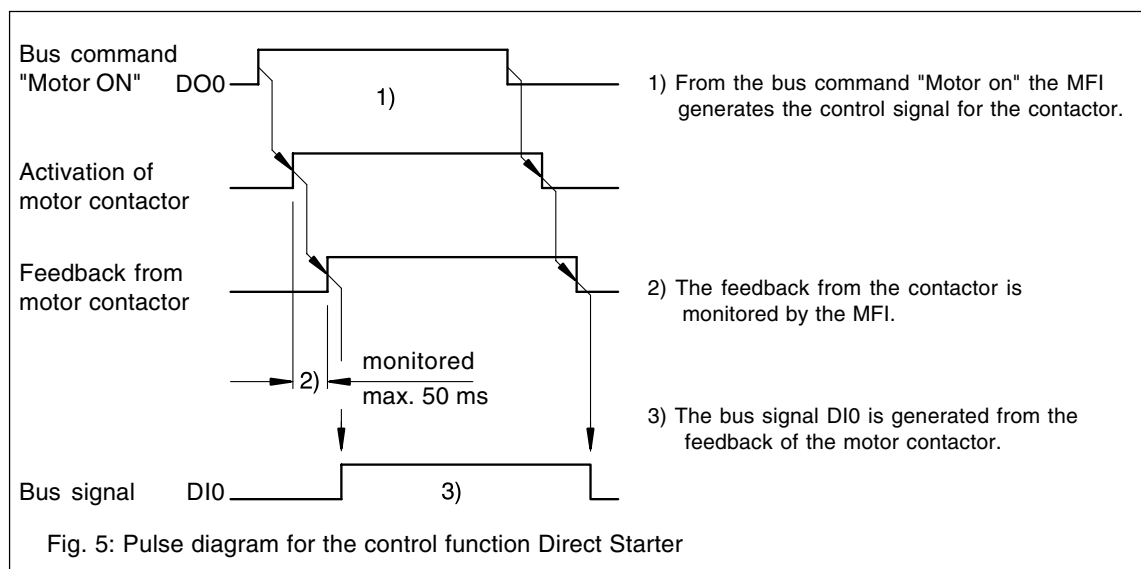
Description:

The command "Motor ON" is output via the bus. From this command the MFI generates the output signal to control the motor contactor.

The MFI monitors the feedback from the motor contactor. If the feedback is not plausible, the MFI detects an error. In case of an error the motor contactor is switched off by the MFI.

Please note, that all relay outputs of the MFI-FBP are always switched off, if the coupled motor protection switch MS 325 is switched off or has tripped.

When used in applications with additional thermal relays or position switches, it is possible that the feedback messages from the process are suddenly switched off because one of these elements has tripped. In this case, the motor is switched off from the process. The MFI then also switches off its relay outputs and generates an error message.



Commands to the MFI via the bus:

- DO0: Command "Motor ON"
- DO1: Digital signal for output 1
- DO2: Digital signal for output 2

Output signals from the MFI to the process:

- Output 0: Activation of motor contactor
- Output 1: Relay output 1
- Output 2: Relay output 2

Feedback from the process via the inputs of the MFI:

- Input 0: Feedback from motor contactor
- Input 1: Digital input 1
- Input 2: Digital input 2
- Input 3: Switch position of the motor protecting switch

Signals from the MFI to the bus:

- DI0: Switch position of the motor contactor
- DI1: Digital signal from input 1
- DI2: Digital signal from input 2
- DI3: Switch position of the motor protecting switch

Motor Starter Field Bus Interface MFI21-FBP

Technical description



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Possible applications:

- Switching a motor on and off.
- Other applications which can use the control function "Direct Starter" are also possible.

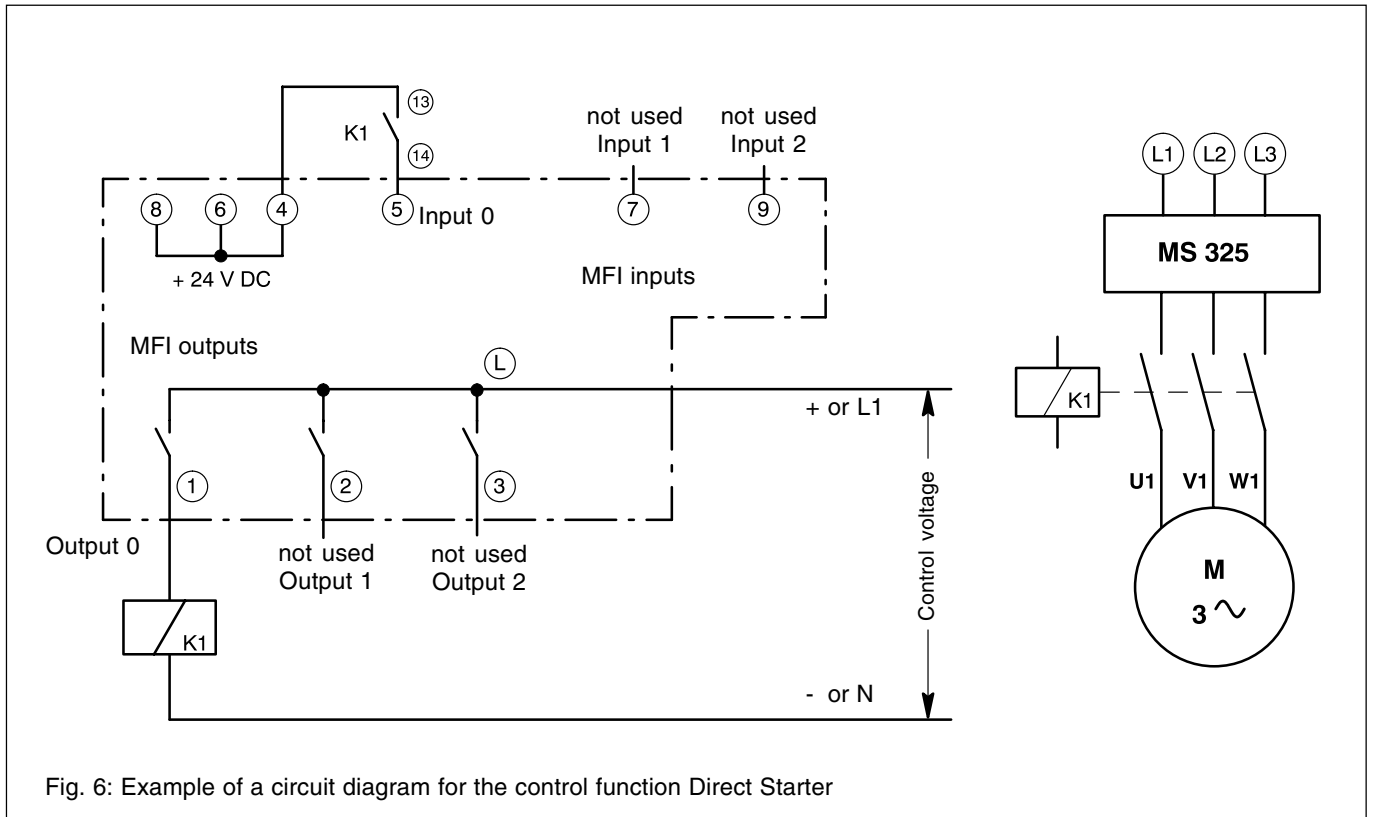


Fig. 6: Example of a circuit diagram for the control function Direct Starter

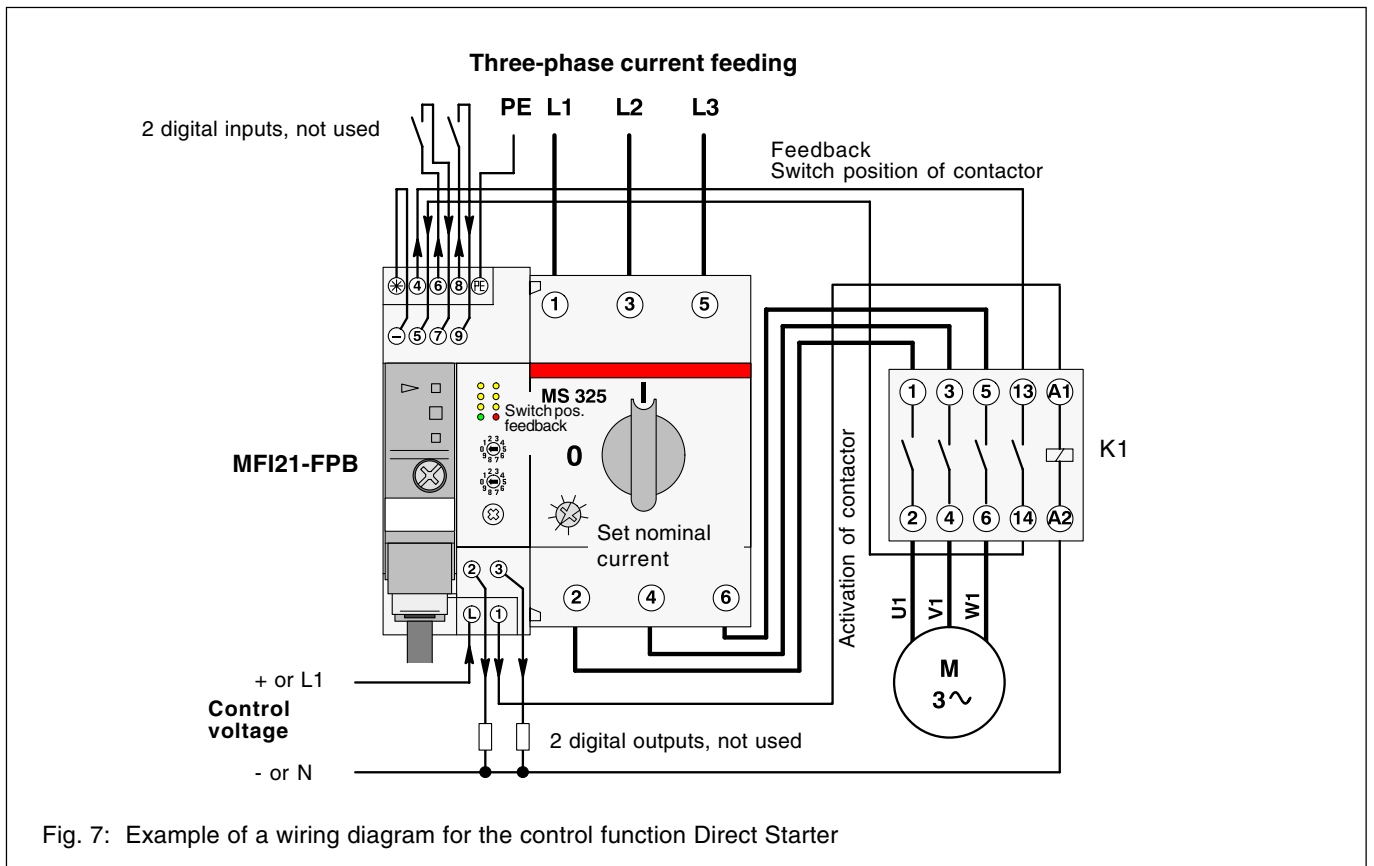


Fig. 7: Example of a wiring diagram for the control function Direct Starter



Motor Starter Field Bus Interface

MFI21-FBP

Technical description

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Control function

Reversing Starter (1 motor, left or right)

Description:

On the bus either the command "Motor ON right" or "Motor ON left" is output. From this command, the MFI generates the output signals for activating the motor contactors "right" or "left" with the required time delays. Depending on the field bus type, the off-time during a change of the rotational direction is derived either from the internal potentiometer or from a time value which was read before.

The MFI monitors the feedback of the motor contactors. If the feedback messages are not plausible, the MFI detects an error. In case of an error the contactors are switched off by the MFI.

Please note, that the relay outputs are always switched off, if the coupled motor protection switch MS 325 is switched off or has tripped.

When used in applications with additional thermal relays or position switches, it is possible that the feedback messages from the process are suddenly switched off because one of these elements has tripped. In this case, the motor is switched off from the process. The MFI then also switches off its relay outputs and generates an error message.

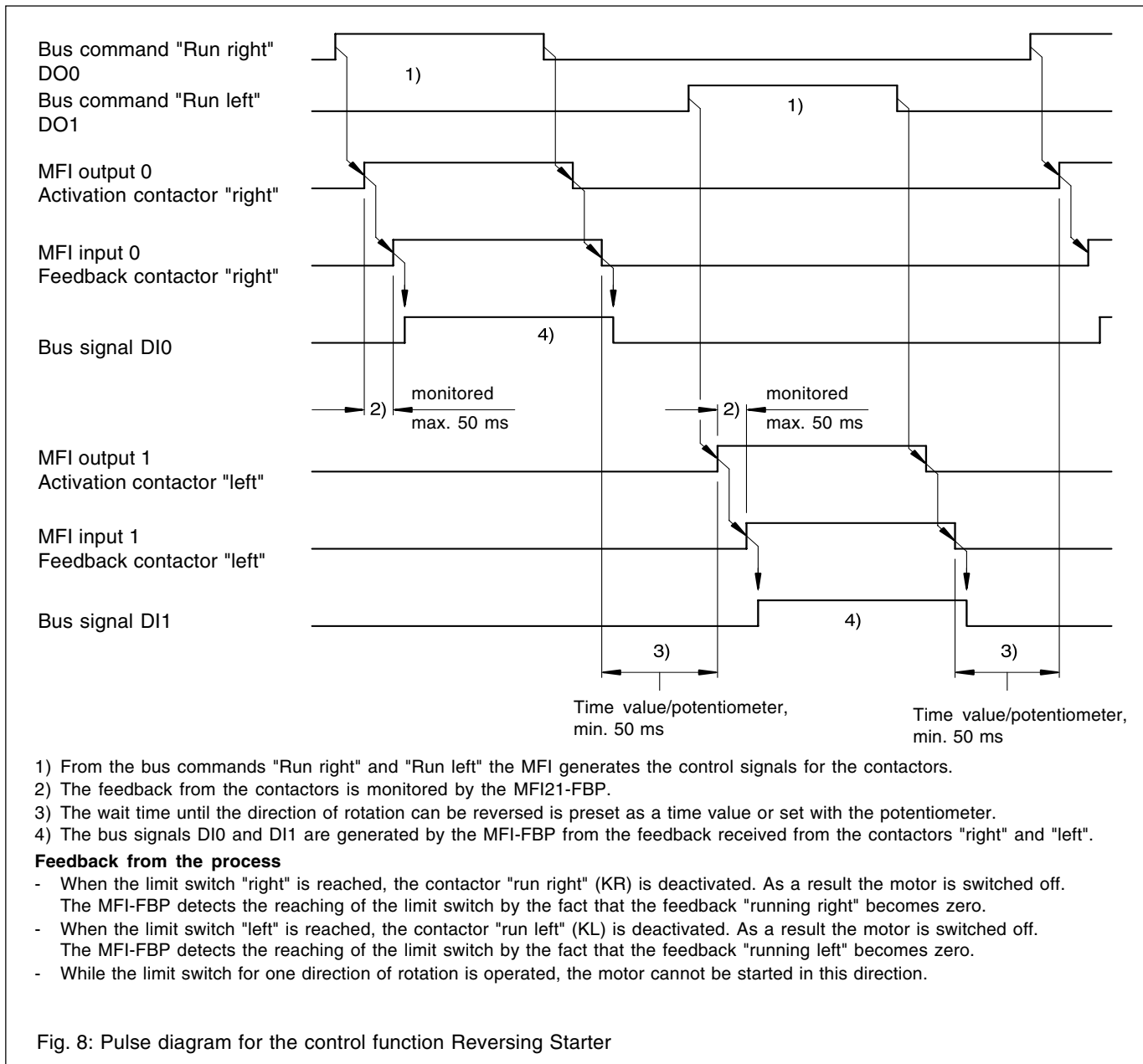


Fig. 8: Pulse diagram for the control function Reversing Starter

Motor Starter Field Bus Interface

MFI21-FBP

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Commands to the MFI via the bus:

DO0: Command "Motor right"
 DO1: Command "Motor left"
 DO1: Digital signal for output 2

Output signals from the MFI to the process:

Output 0: Activation of contactor "right"
 Output 1: Activation of contactor "left"
 Output 2: Relay output 2

Feedback from the process via the inputs of the MFI:

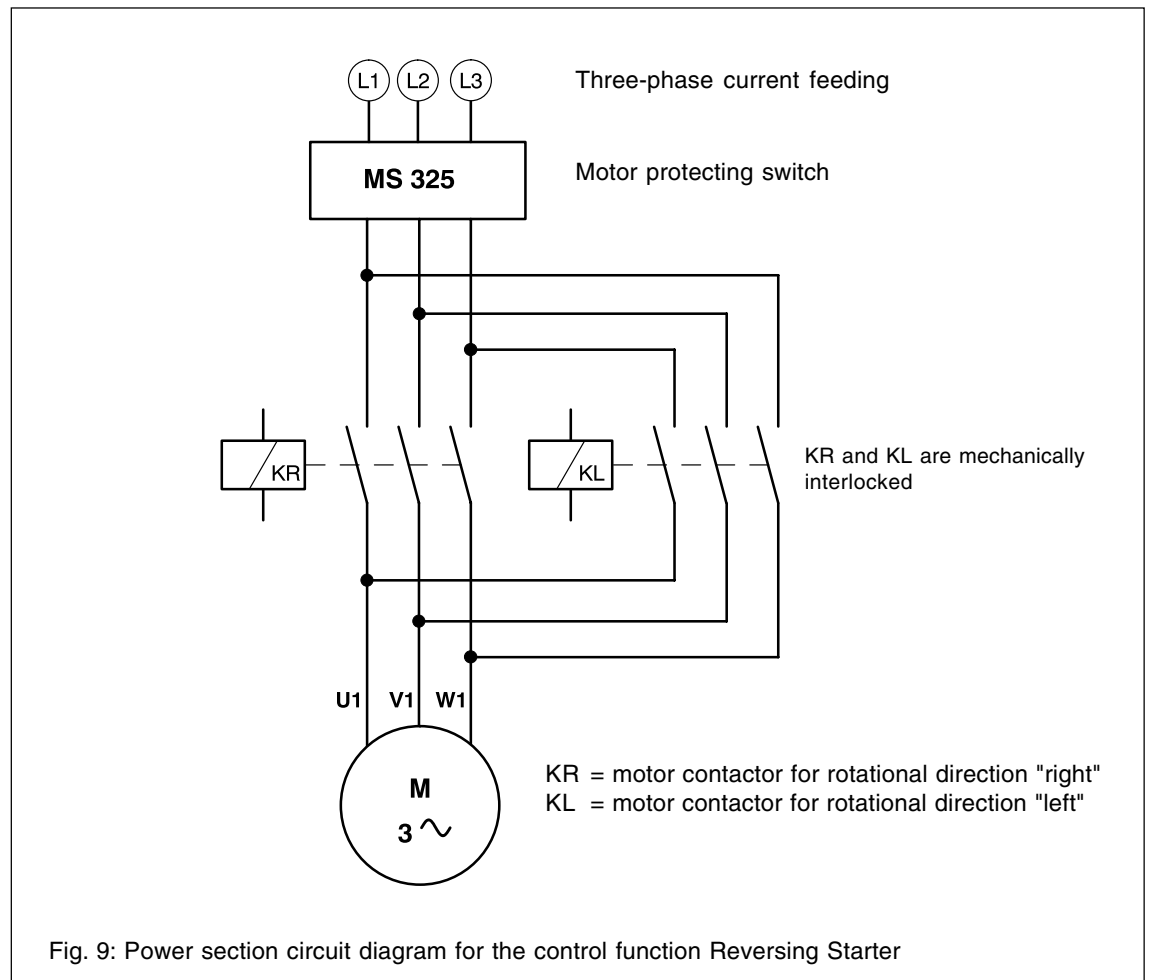
Input 0: Feedback from contactor "right"
 Input 1: Feedback from contactor "left"
 Input 2: Digital input 2
 Input 3: Switch position of the motor protecting switch

Signals from the MFI to the bus:

DI0: Switch position contactor "right"
 DI1: Switch position contactor "left"
 DI2: Digital signal from input 2
 DI3: Switch position of the motor protecting switch

Possible applications:

- Motor in reversing operation left/right
- Other applications which can use the control function "Reversing Starter" are also possible.





Motor Starter Field Bus Interface

MFI21-FBP

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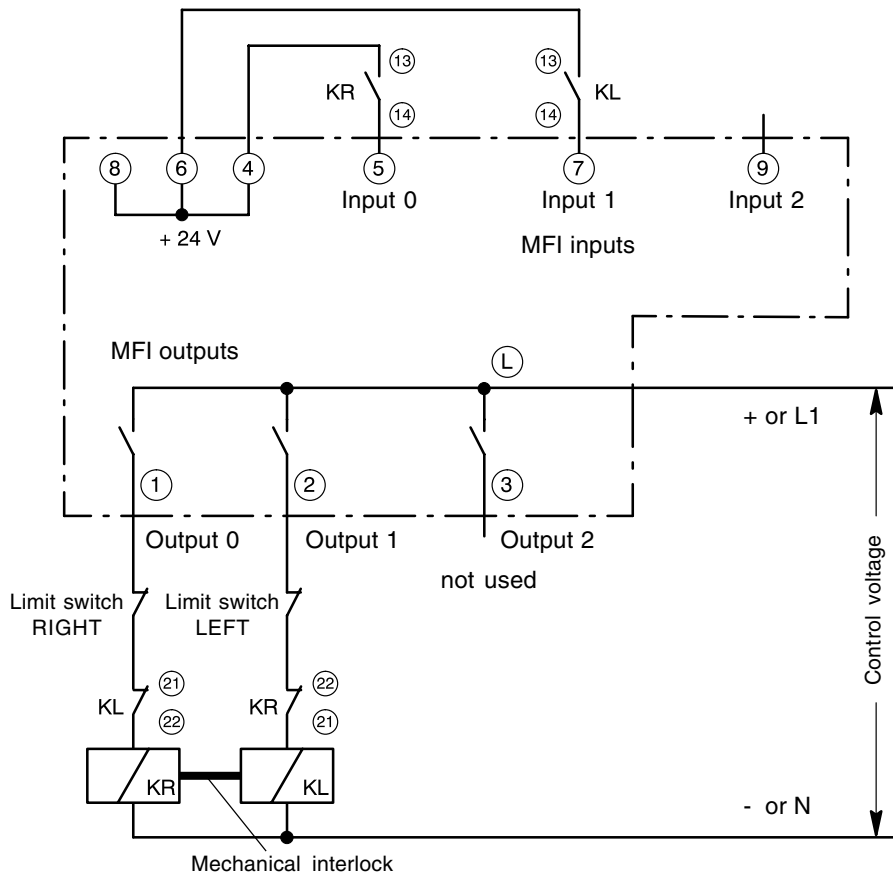


Fig. 10: Example of a circuit diagram for the control function Reversing Starter

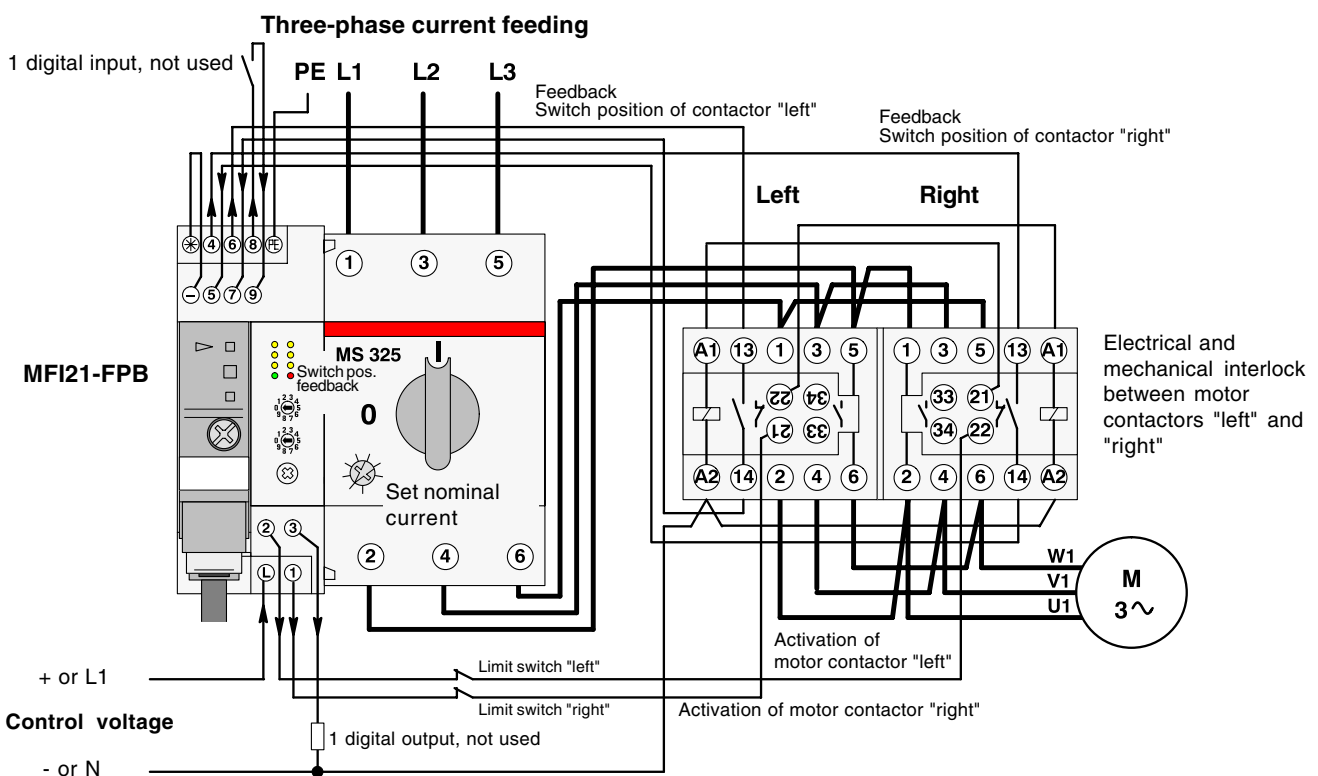


Fig. 11: Example of a wiring diagram for the control function Reversing Starter



Control function

Star-delta Starter (1 motor with star-delta starting)

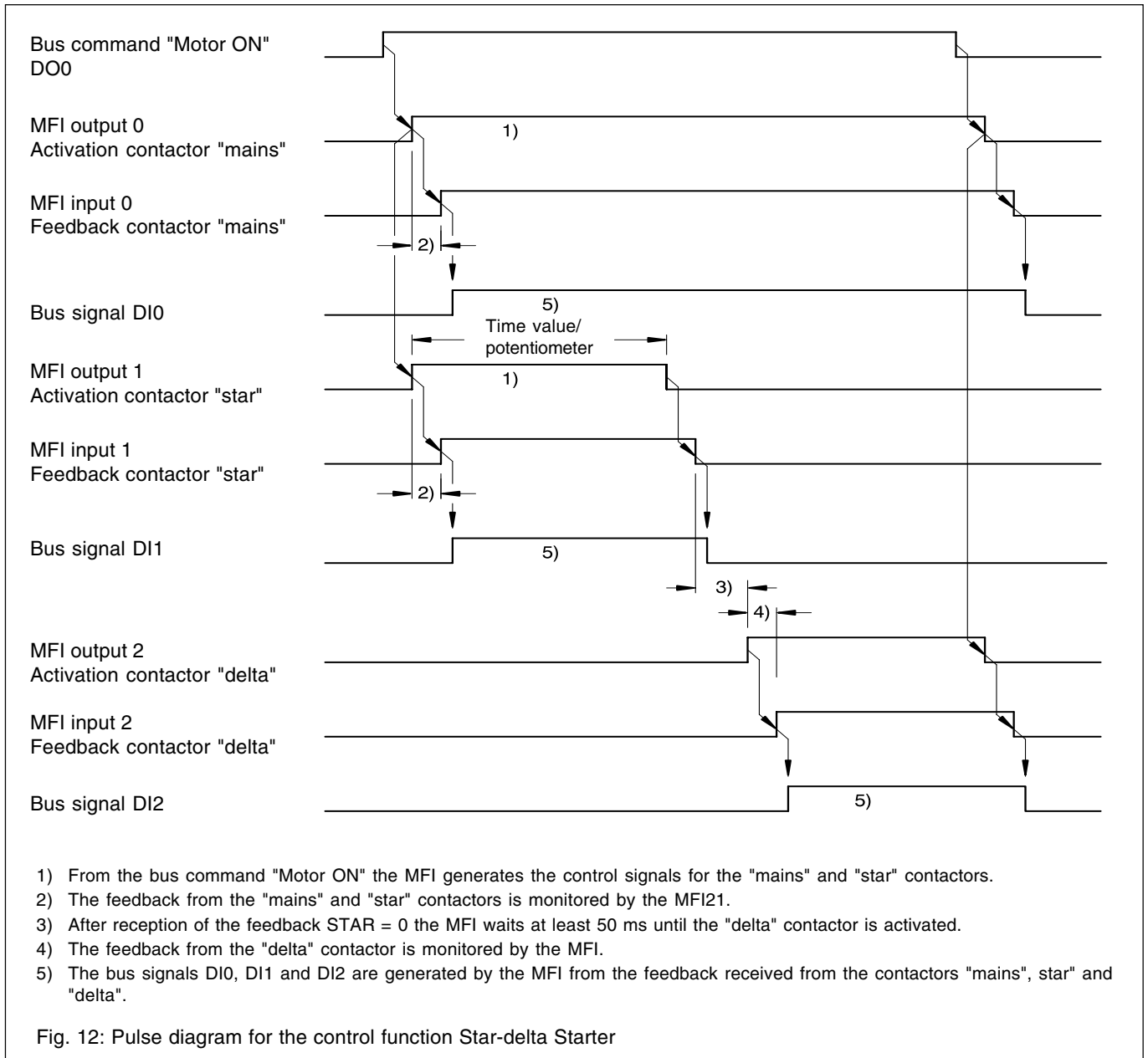
Description:

The command "Motor ON" is output on the bus. From this command, the MFI generates the output signals for activating the motor contactors "mains", "star" and "delta" with the required time delays. Depending on the field bus type, the on-time of the "star" contactor is derived either from the internal potentiometer or from a time value which was read before.

The MFI monitors the feedback. If the feedback messages are not plausible, the MFI detects an error. In case of an error the contactors are switched off by the MFI.

Please note, that the relay outputs are always switched off, if the coupled motor protection switch MS 325 is switched off or has tripped.

When used in applications with additional thermal relays or position switches, it is possible that the feedback messages from the process are suddenly switched off because one of these elements has tripped. In this case, the motor is switched off from the process. The MFI then also switches off its relay outputs and generates an error message.





Motor Starter Field Bus Interface

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Commands to the MFI via the bus:

DO0: Command "motor ON"
DO1: Reserved
DO2: Reserved

Output signals from the MFI to the process:

Output 0: Activation of "mains" contactor
Output 1: Activation of "star" contactor
Output 2: Activation of "delta" contactor

Feedback from the process via the inputs of the MFI:

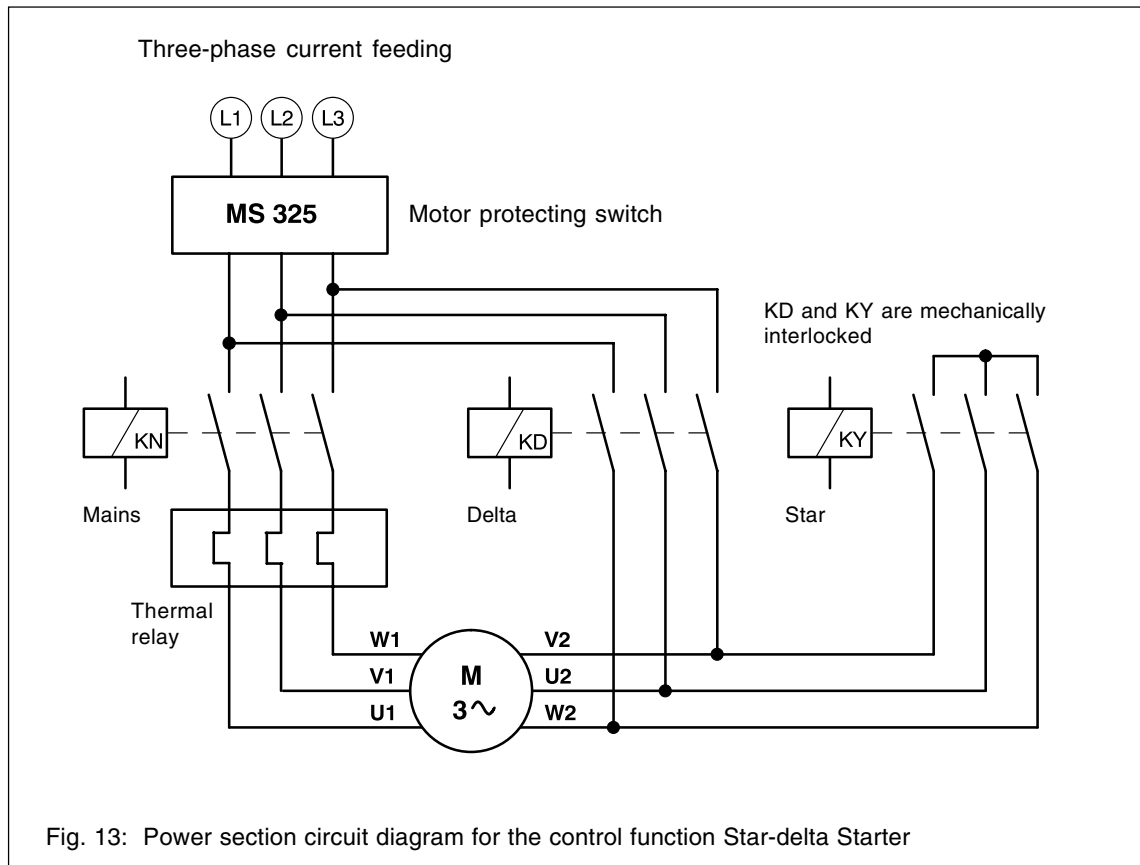
Input 0: Feedback from "mains" contactor
Input 1: Feedback from "star" contactor
Input 2: Feedback from "delta" contactor
Input 3: Switch position of the motor protecting switch

Signals from the MFI to the bus:

DI0: Switch position of the "mains" contactor
DI1: Switch position of the "star" contactor
DI2: Switch position of the "delta" contactor
DI3: Switch position of the motor protecting switch

Possible applications:

- Star-delta starting of an asynchronous motor.
- Other applications which can use the control function "star-delta starting" are also possible.



Motor Starter Field Bus Interface MFI21-FBP

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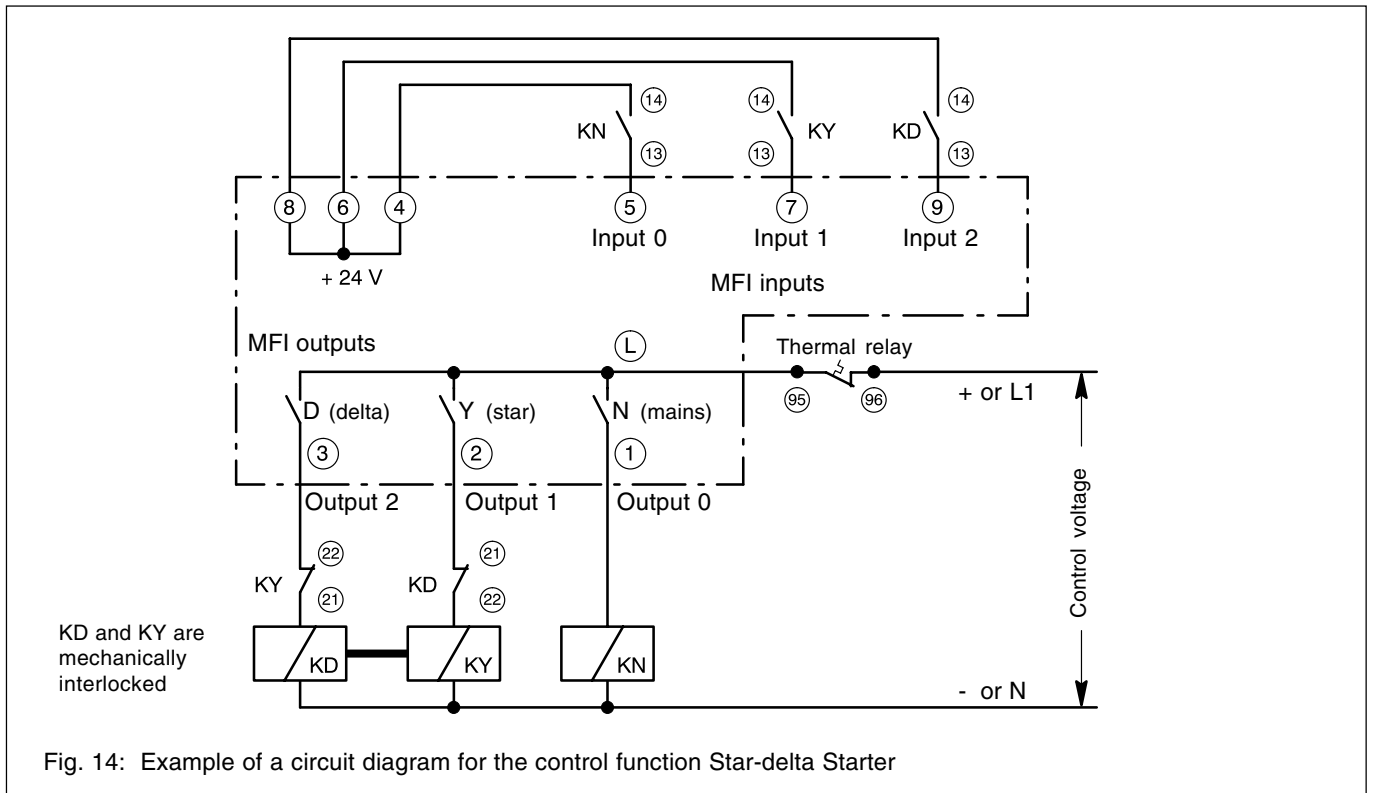


Fig. 14: Example of a circuit diagram for the control function Star-delta Starter

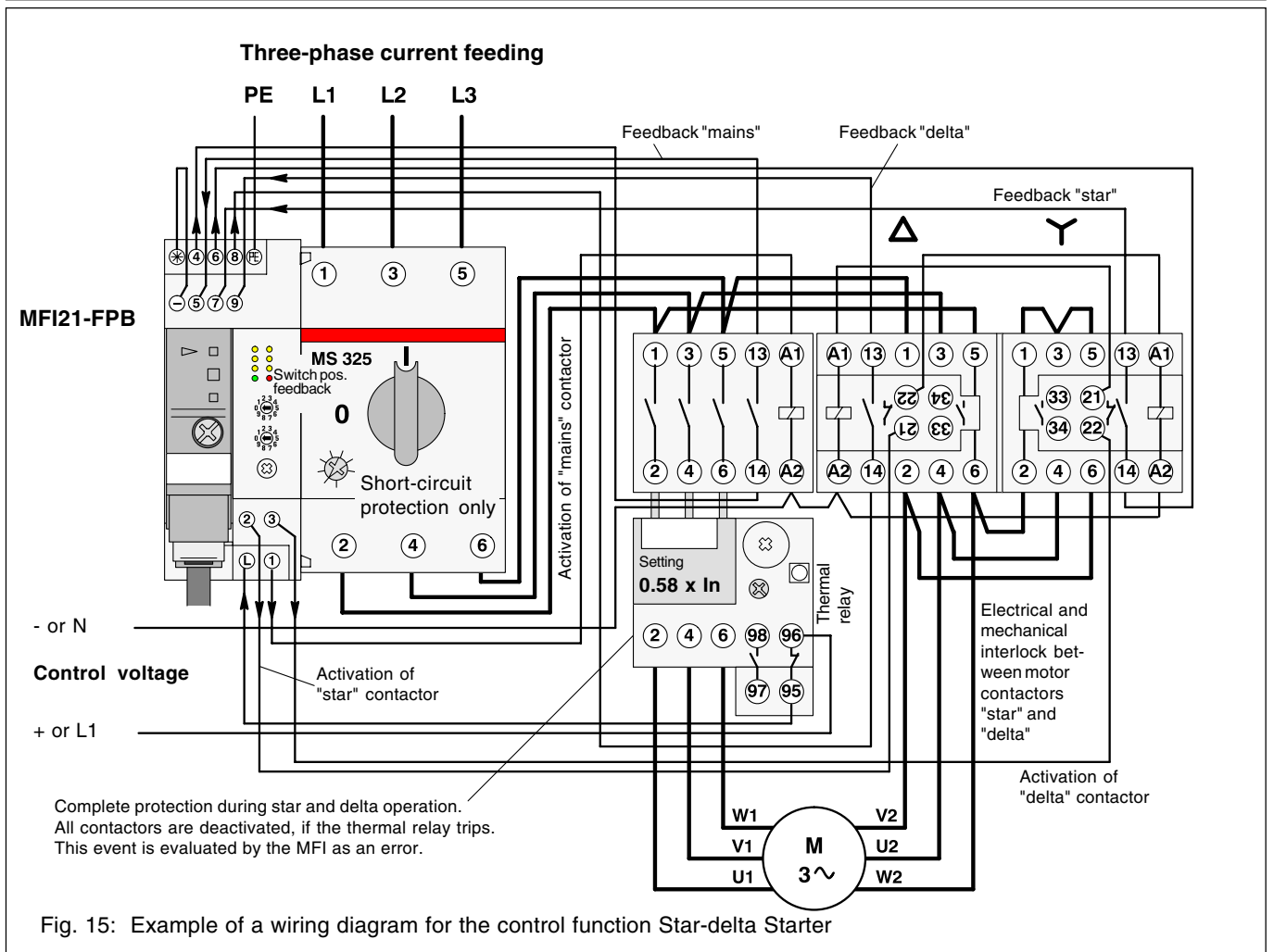


Fig. 15: Example of a wiring diagram for the control function Star-delta Starter



Motor Starter Field Bus Interface

MFI21-FBP

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Control function

Transparent (MFI21 used as I/O device), **not possible with AS-Interface bus**

Description:

The MFI switches the bus signals DO0 ... DO2 through to the relay outputs 0 ... 2. In the opposite direction, the inputs 0 ... 2 are switched through to the bus signals DI0 ... DI2.

Please note, that all relay outputs are always switched off, if the coupled motor protection switch is switched off or has tripped.

Commands to the MFI via the bus:

DO0: Digital signal for output 0
DO1: Digital signal for output 1
DO2: Digital signal for output 2

Output signals from the MFI to the process:

Output 0: Relay output 0
Output 1: Relay output 1
Output 2: Relay output 2

Feedback from the process via the inputs of the MFI:

Input 0: Digital input 0
Input 1: Digital input 1
Input 2: Digital input 2
Input 3: Switch position of the motor protecting switch

Signals from the MFI to the bus:

DI0: Digital signal from input 0
DI1: Digital signal from input 1
DI2: Digital signal from input 2
DI3: Switch position of the motor protecting switch

Possible applications:

- Input/output device with 3 inputs and 3 outputs depending on the switch position of the coupled motor protecting switch MS 325.

Motor Starter Field Bus Interface

MFI21-FBP

Technical description



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Technical data for MFI21-FBP

General data

| | |
|---|--|
| Number of digital inputs | 3 (+1 for switch position feedback of the coupled motor protecting switch) |
| Voltage supply of the digital inputs | internally via field bus plug or by external power supply unit 24 V DC |
| Number of digital relay outputs | 3 |
| Number of bus interfaces | 1 (for connection of an ABB field bus plug) |
| Internal signal processing and monitoring | by micro controller |
| Bus address setting | manually using the 2 built-in rotary switches or manually via the field bus using a programming unit or via infrared interface (only for AS-Interface bus) or via the field bus (not for AS-Interface bus). The method for setting the address depends on the type of the used field bus plug. |
| Setting the internal timer | manually by built-in potentiometer, parameter setting via field bus (not for AS-Interface bus) |
| Parameter assignment via field bus | <ul style="list-style-type: none">– control functions– reaction of MFI if the bus connection fails– star-delta start-up timer, reversing change-over blocking time |
| Diagnostics | The process feedback is monitored. |
| Indication of operating states and errors | 8 LEDs altogether |
| Total dissipation | max. 2.4 W |
| Conductor cross section of the connection terminals | max. 2.5 mm ² or max. 2 x 1.5 mm ² |

Power supply for MFI21-FBP

| | |
|---------------------|--------------------------------|
| Supply voltage | 24 V DC via field bus plug |
| Current consumption | via field bus plug max. 100 mA |



Motor Starter Field Bus Interface

MFI21-FBP

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Digital inputs

| | |
|--|---|
| Number of digital inputs | 3 (+1 for switch position feedback of the coupled motor protecting switch) |
| Voltage supply of the digital inputs | internally via field bus plug or by external power supply unit 24 V DC |
| Protection against reverse polarity of the external voltage supply | yes |
| Division of inputs in groups | 1 group with 3 inputs |
| Information for project planning | The terminals 4, 6 and 8 are internally bridged (internal 24 V DC supply for the inputs). |
| Potential separation | between input group and the remaining parts (by optical couplers) |
| Insulation voltage of potential separation | 500 V AC |
| Signal coupling of input signals | by optical couplers |
| Input delay | typ. 4 ms |
| Indication of input signals | one yellow LED per input, LED on = signal 1 |
| Input signal potentials | |
| signal 0 | -30 V...+ 5 V |
| signal 1 | 13 V...+ 30 V |
| residual ripple for signal 0 | within - 30 V...+ 5 V |
| for signal 1 | within +13 V...+ 30 V |
| Input current per channel | |
| input voltage = +24 V | typ. 8.0 mA |
| input voltage = + 5 V | > 0.2 mA |
| input voltage = +13 V | > 2.0 mA |
| input voltage = +30 V | < 10.0 mA |
| Max. line length unshielded | 600 m |
| Max. line length shielded | 1000 m |

Motor Starter Field Bus Interface MFI21-FBP



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Technical description

Digital outputs

| | |
|--|--|
| Number of digital outputs | 3 relay outputs |
| Division of outputs into groups | 1 group with 3 outputs |
| Common voltage supply for the contacts | terminal L |
| Potential separation | between output group and the remaining parts |
| Insulation voltage of the potential separation | 2500 V AC |
| Signal coupling of output signals | via relays |
| Indication of output signals | one yellow LED per output, LED on = signal 1 |
| Switching voltage (nominal range) | 12 V AC/DC ... 250 V AC/DC |
| Current switching capacity per relay | |
| 240 V AC (AC15 / EN 60947-5-1) | max. 1.5 A (AC15, electro-magnetic load) |
| 120 V AC (AC15 / EN 60947-5-1) | max. 3.0 A (AC15, electro-magnetic load) |
| 250 V DC (DC13 / EN 60947-5-1) | max. 0.11 A (DC13, electro-magnetic load) |
| 125 V DC (DC13 / EN 60947-5-1) | max. 0.22 A (DC13, electro-magnetic load) |
| 24 V DC (DC13 / EN 60947-5-1) | max. 1.0 A (DC13, electro-magnetic load) |
| Load current for common voltage supply of the contacts (terminal 10) | max. 3.0 A |
| Min. switching power | 1 W or 1 VA |
| Short-circuit protection (back-up fuse) | 6 A gL/gG |
| Switching of inductive loads | When switching inductive loads, additional measures for spark suppression are required. When switching contactor coils with diode rectifier, these diodes already represent a suitable measure for demagnetization. Otherwise it is recommended to wire DC contactor coils with free-wheeling diodes and AC contactor coils with varistors or RC elements. |
| Relay contact lifetime | |
| mechanical | 500 000 switching cycles |
| at 250 V AC, 0.5 A (AC15) | 100 000 switching cycles |
| at 250 V AC, 1.5 A (AC15) | 50 000 switching cycles |
| Internal clearance and creepage distances, between relay contacts and 24-V circuitry | > 5.5 mm (safety insulation up to 250 V AC, according to EN 60947-1, pollution degree 2) |



Motor Starter Field Bus Interface

MFI21-FBP

Technical description

V 6

Field bus plug connection

| | |
|------------------------------------|--|
| Mounting | Plug connection, fastening with supplied screw |
| Suitable ABB field bus plug types | AS-Interface-P yes AS-Interface-D no DeviceNet yes PROFIBUS DP yes |
| Parameter assignment via field bus | |
| – Control functions | - Direct starter (1 motor, 1 direction of rotation) - Reversing starter (1 motor, left or right) - Star-delta starter (1 motor with star-delta starting) - Transparent (MFI21 only used as an I/O device), not possible on AS-Interface bus Other applications which can use this control function are also possible (e.g. Dahlander operation). |
| – Behaviour when the bus fails | - All outputs are switched off (0 signal) if the bus connection fails - The outputs remain in the actual state if the bus connection fails |
| – Timer | in effect, when potentiometer is turned to the left most position (50 ms ... 260 s). |

LED displays

LEDs for indication:

| | |
|---|--------------------------|
| – digital inputs state | 1 yellow LED per channel |
| – digital outputs state | 1 yellow LED per channel |
| – internal supply voltage 5 V DC present | 1 green LED |
| – error | 1 red LED |

Mechanical data

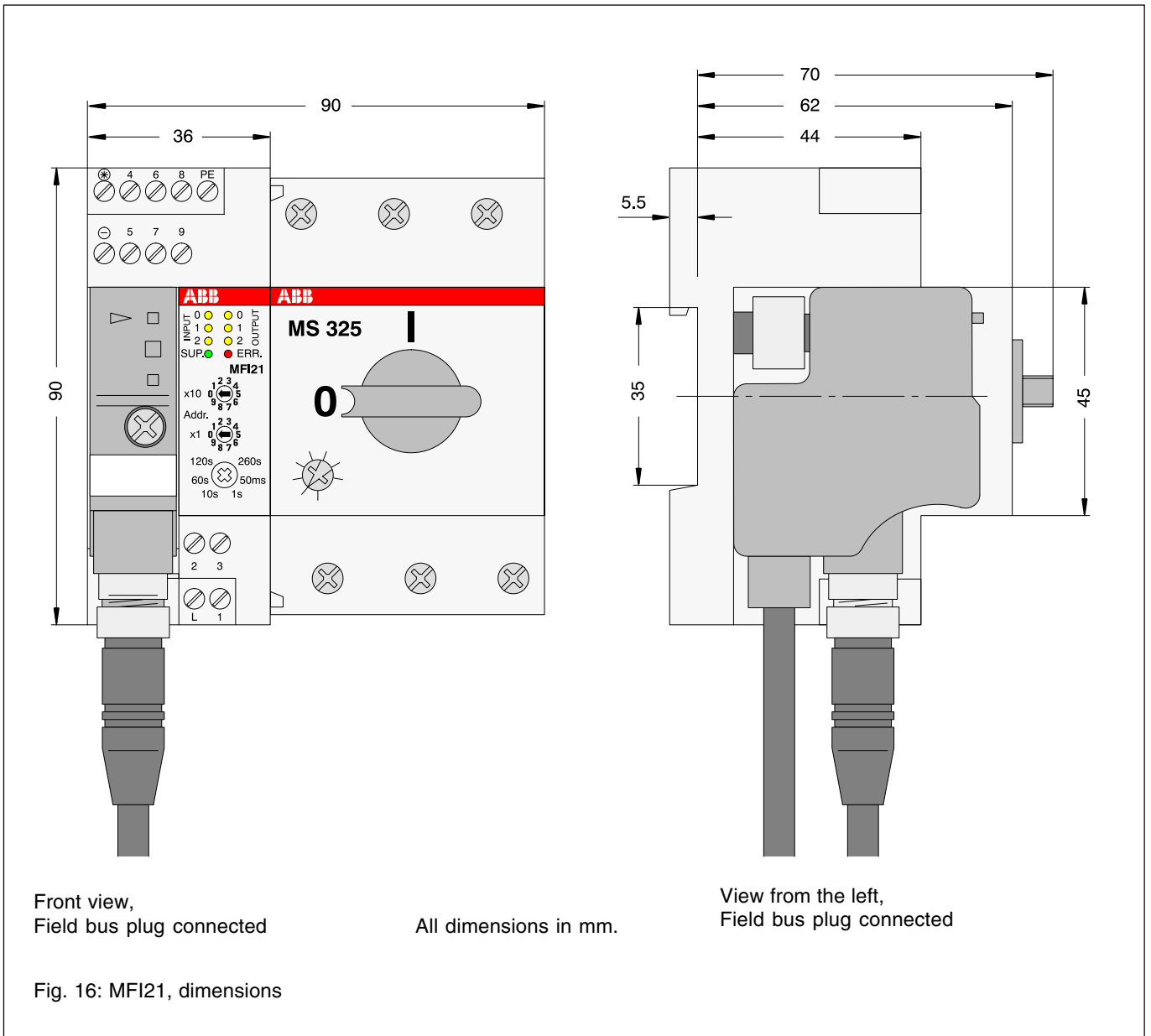
| | |
|-------------------------|---|
| Mounting on DIN rail | according to DIN EN 50022-35 The DIN rail is positioned aligned between the top edge and the lower edge of the unit. |
| Width x Height x Depth | 36 x 90 x 67.5 mm |
| Wiring method | screw terminals |
| Mounting position | preferred orientation of connecting terminals up- and downwards |
| Conductor cross section | max. 1 x 2.5 mm ² or max. 2 x 1.5 mm ² |
| Weight | 0.12 kg |
| Dimensions for mounting | refer to the following figure |

Motor Starter Field Bus Interface MFI21-FBP

Technical description



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Ordering data:
Scope of delivery:

Order No. 1SAJ 4100 00 R0100
MFI21-FBP incl. fastening screw



Motor Starter Field Bus Interface

MFI21-FBP

Technical description

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