

**Shaft encoding system KSK**  
Technical description

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## 1 The Components

The shaft encoding system consists of:

- the pre-fabricated mounting plates for the magnets (including the magnets)
  - Zone and level UP / DOWN
  - Impulse UP / DOWN
  - Correction TOP / BOTTOM
  - Pre-limit TOP / BOTTOM
- The accessories for fixing the magnet plates to the guide rails
- 2 magnet switch module systems
  1. A magnet switch module with 6 (MB6), 4 (MB4) or 2 (MB2) magnet switches for mounting on the right or left side of the guide rail
  2. A magnet switch module with 4 (MB4 FS) or 2 (MB2 FS) magnet switches for guide rail mounting
- A magnet switch module with 2 magnet switches for extension of the magnet switch modules (MB2 - 6)
- A pluggable connection cable (10 poles), length: 2, 3 or 5m

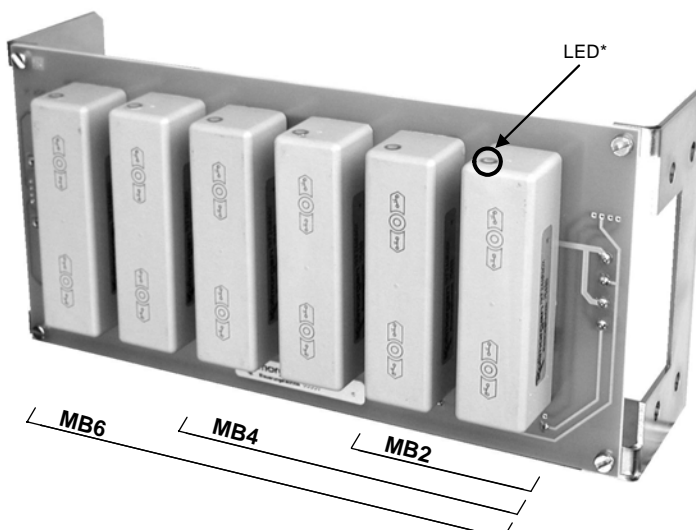


The chapter contains examples for

- Simple shaft encoding, Digital shaft encoding, Standard shaft encoding.

## 2 Magnet Switch Modules MB6, MB4, MB2

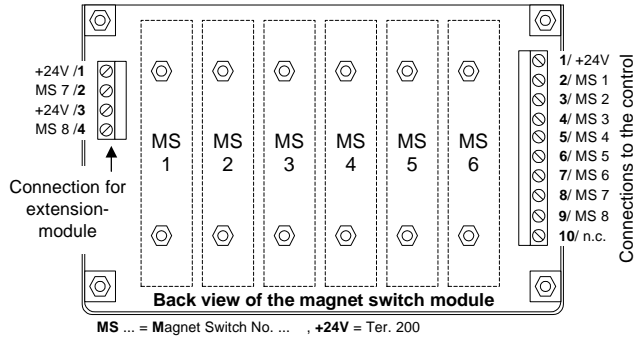
All magnet switch modules are provided with the same dimensions.  
The setup is with 2, 4 or 6 magnet switches.



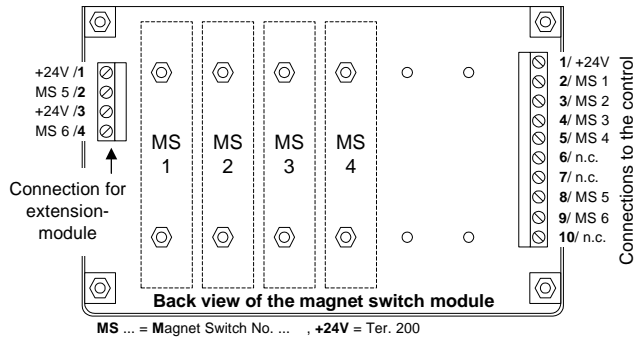
\* The LED is dependent on the type of magnet switches!  
Notice: The LED lights up, if the switch is closed and a current flows.

## 2.1 Terminal arrangement

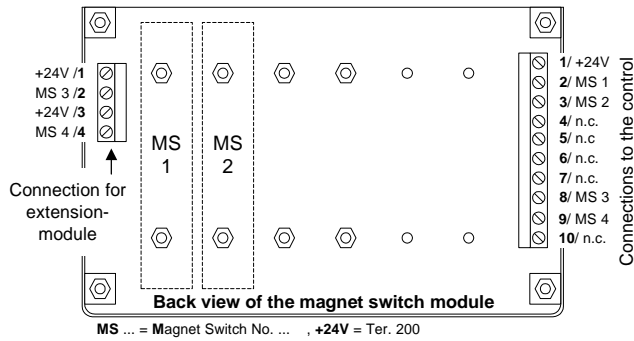
### MB 6:



### MB 4:



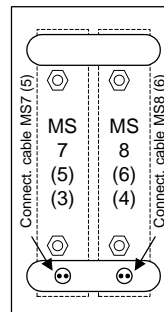
### MB 2:



## 2.2 Extension for MB6, MB4, MB2



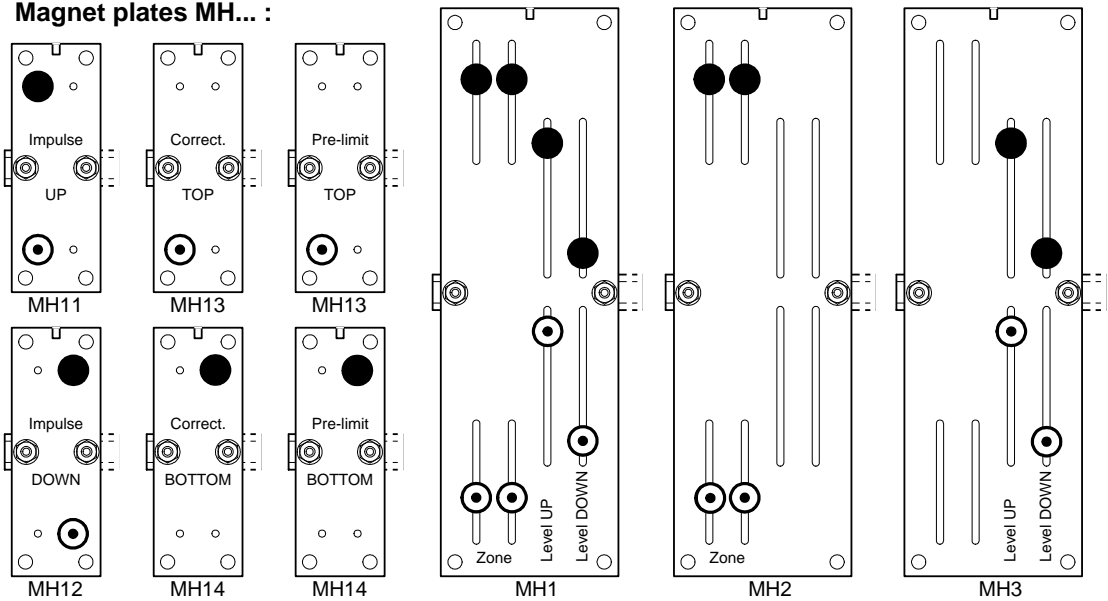
### Terminal arrangement



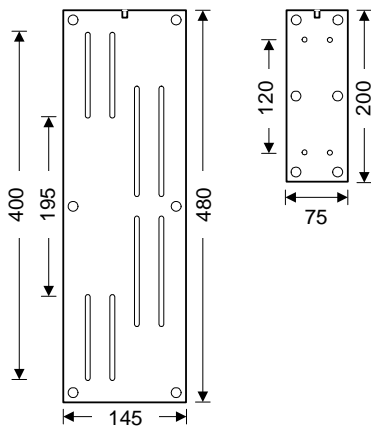
Back view of the magnet switch module

### 2.3 Magnet Plates and Fixing Rail Overview

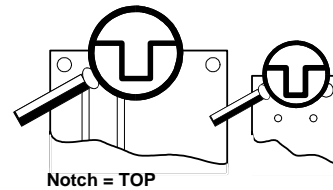
#### Magnet plates MH... :



#### Magnet plates diameters



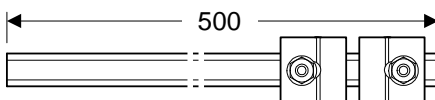
#### Marking of the magnet plates



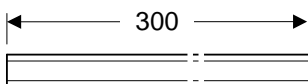
#### Marking of the magnets



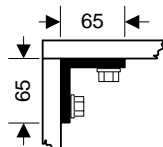
#### Fixing rail (for Führungsschiene):



#### Fixing rail (for 90° mounting of the magnet plates):

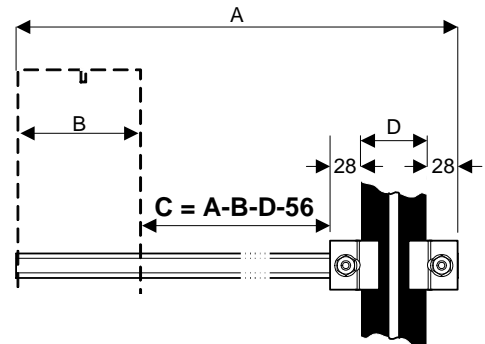


#### Angle for 90° mounting:



(All dimensions in [mm])

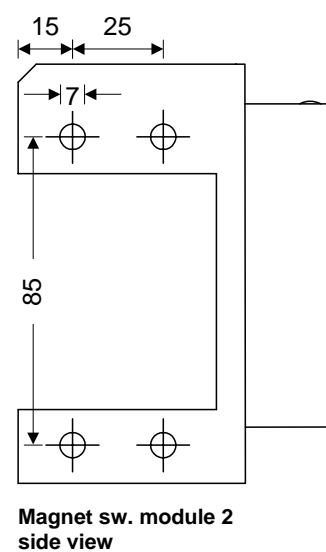
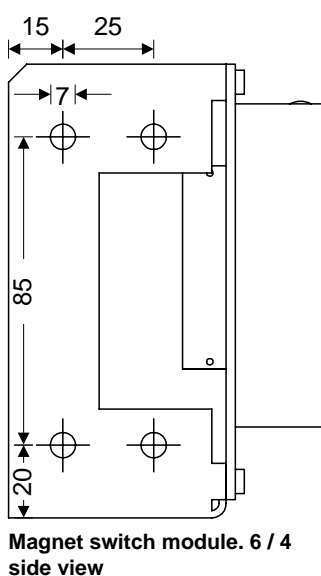
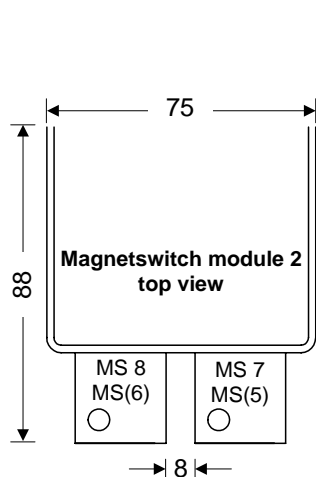
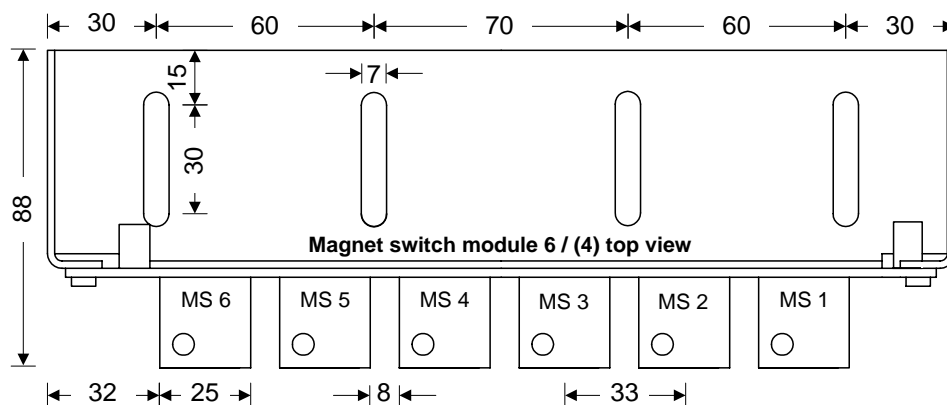
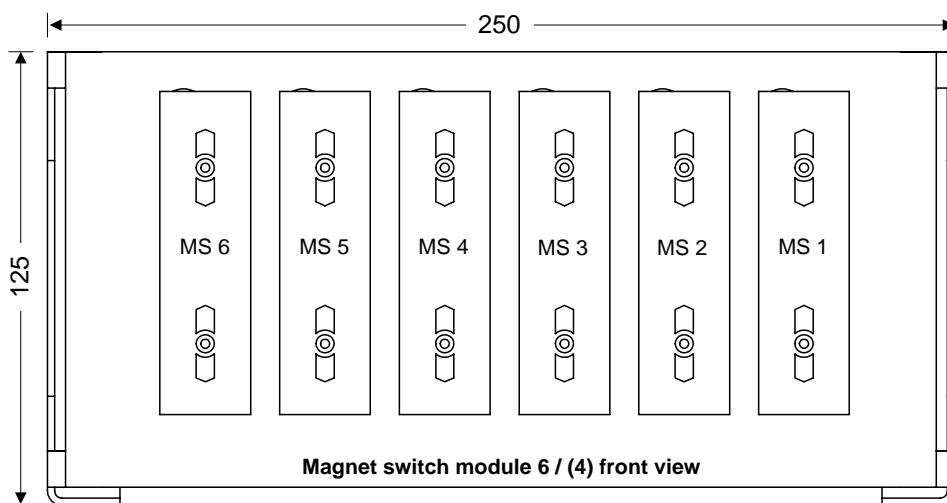
#### Horizontal setting range (C) of the magnet plates:



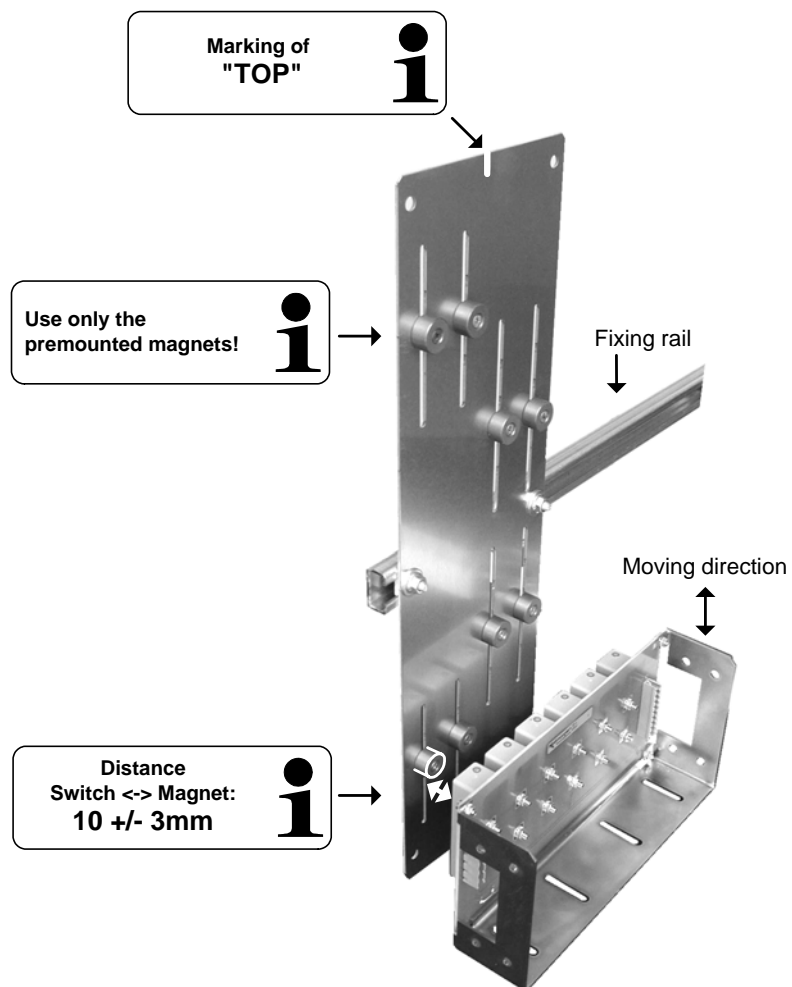
Example MH1-3:  
 $C = 500 - 145 - 90 - 56 = \underline{209}$

Example MH11-14:  
 $C = 500 - 75 - 90 - 56 = \underline{279}$

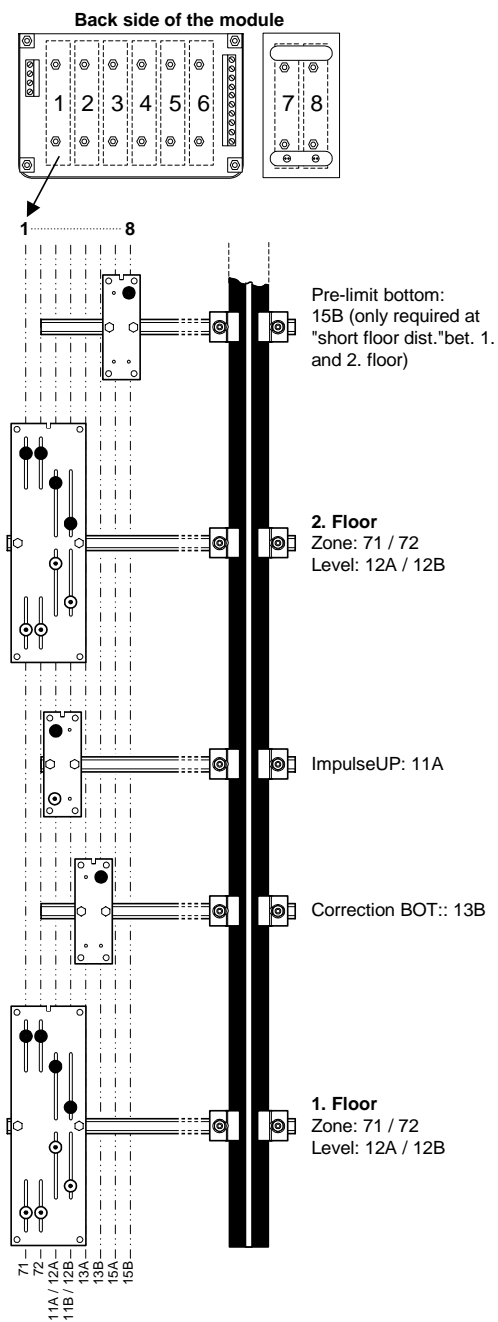
2.4 Schematic Drawings of the Magnet Switch Modules



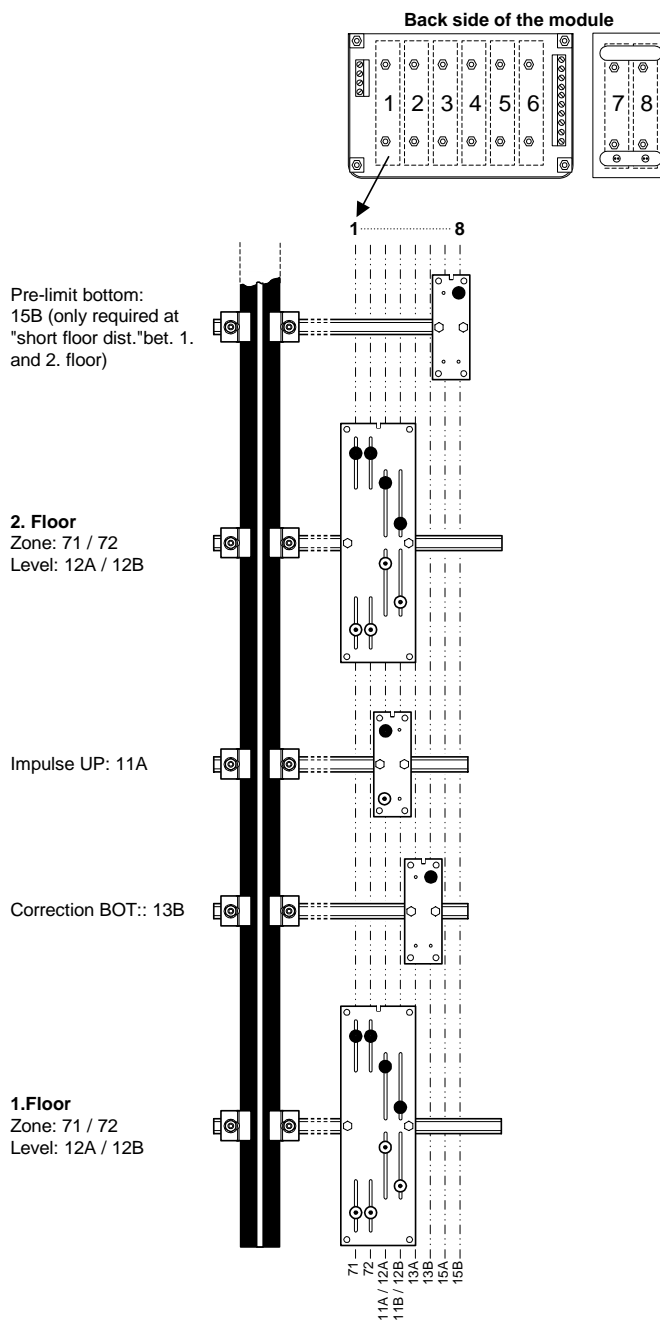
## 2.5 Mounting



**Mounting on the left side of the guide rail**



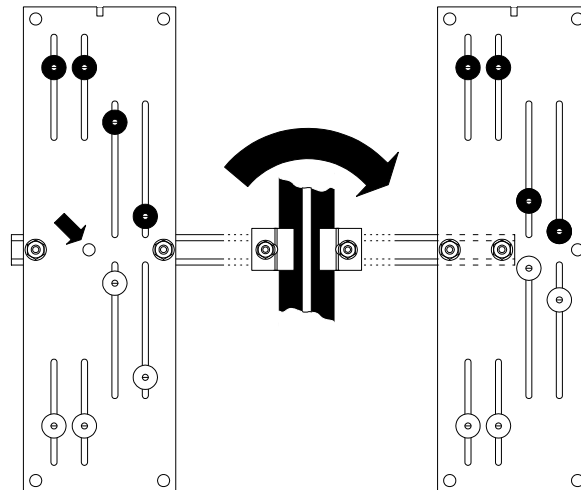
**Mounting on the right side of the guide rail**





### 2.5.1 Changing of mounting the magnet plates

The fixing rails limit the distance of the level magnets. If you need the minimum distance of the level magnets, change the mounting position of the magnet plates from the left to the right side of the guide rail. Please use now the left and the middle screw hole for fixing.

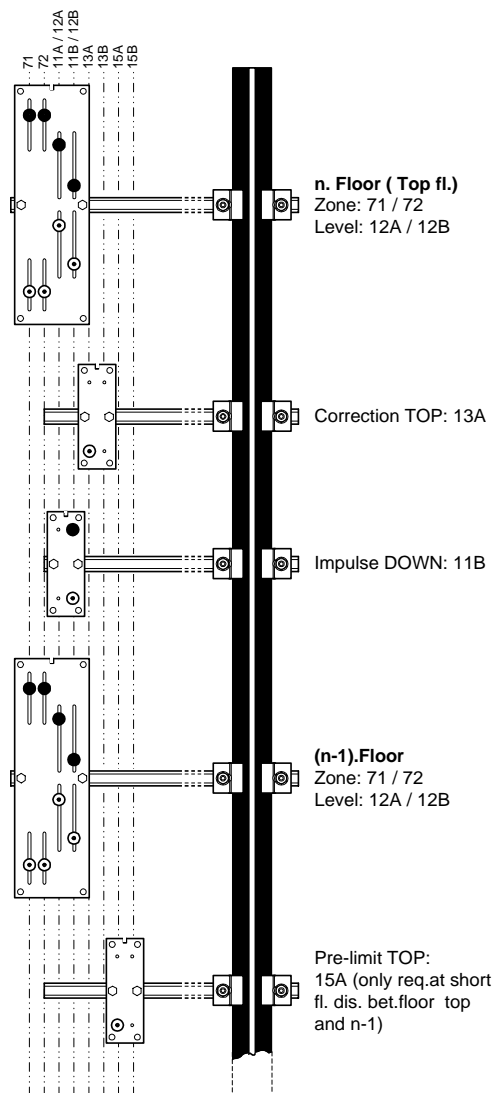
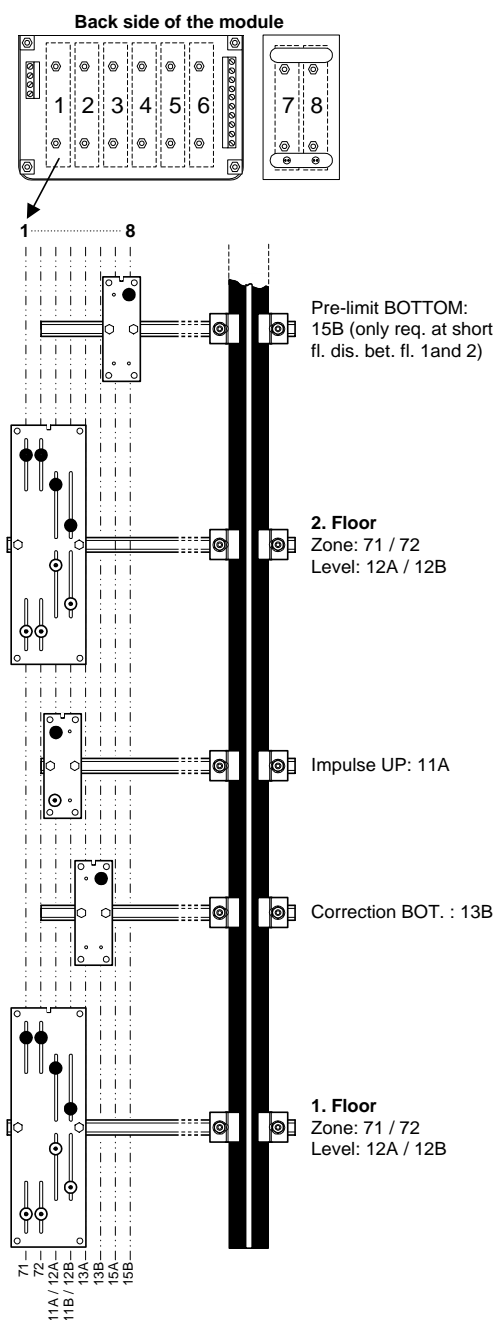


2.6 Example „Simple Encoding with zone-signal“



**i** The example shows an installation with short floor distances between floor 1 and 2. (s. magnet plate 15A/B)

This is only a schematic drawing!

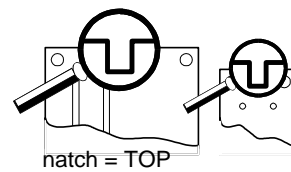
See the mounting hints in the controlmanual!



Marking of the magnets

-  Red = South pole
-  Black = North pole

Marking of the magnet plates

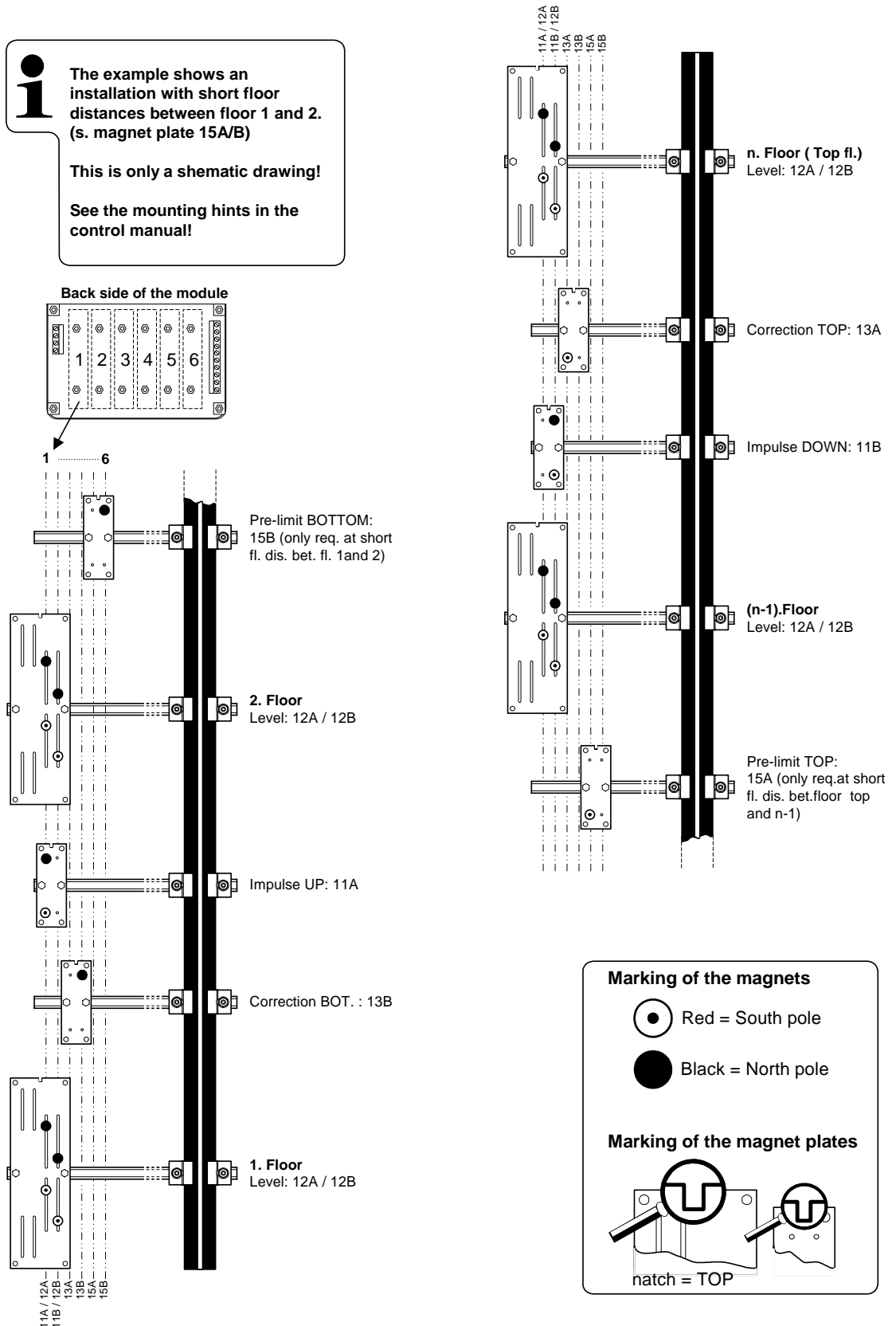


**2.7 Example „Simple Encoding without zone-signal“**

**i** The example shows an installation with short floor distances between floor 1 and 2. (s. magnet plate 15A/B)

This is only a schematic drawing!

See the mounting hints in the control manual!



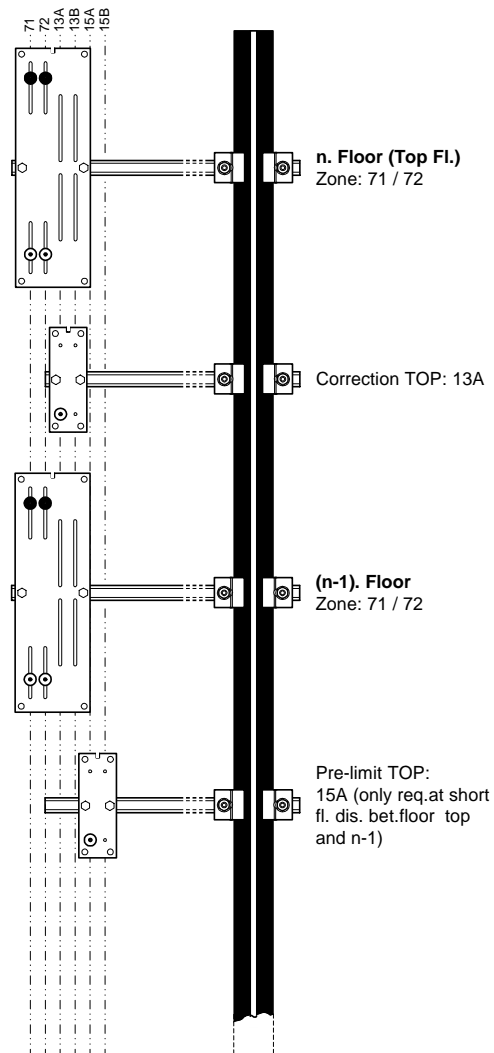
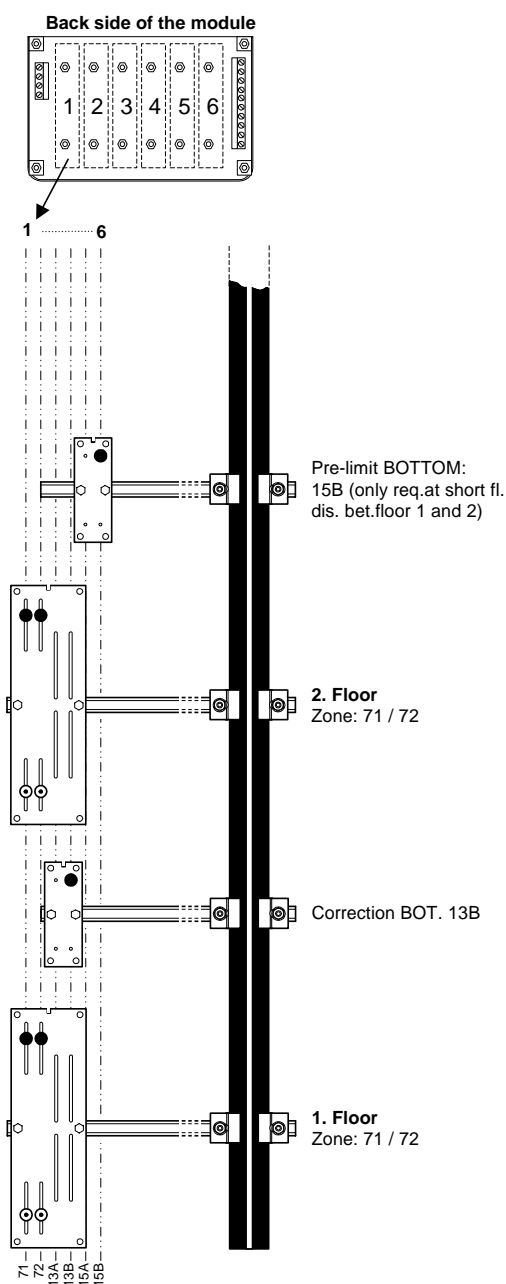
## 2.8 Example „Digital Shaft Encoding“

(with 2 zone-switches for safety circuit)


**i** The example shows an installation with short floor distances between floor 1 and 2. (s. magnet plate 15A/B)


This is only a schematic drawing!

See the mounting hints in the control manual!

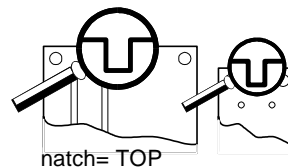


### Marking of the magnets

 Red = South pole

 Black = North pole

### Marking of the magnet plates

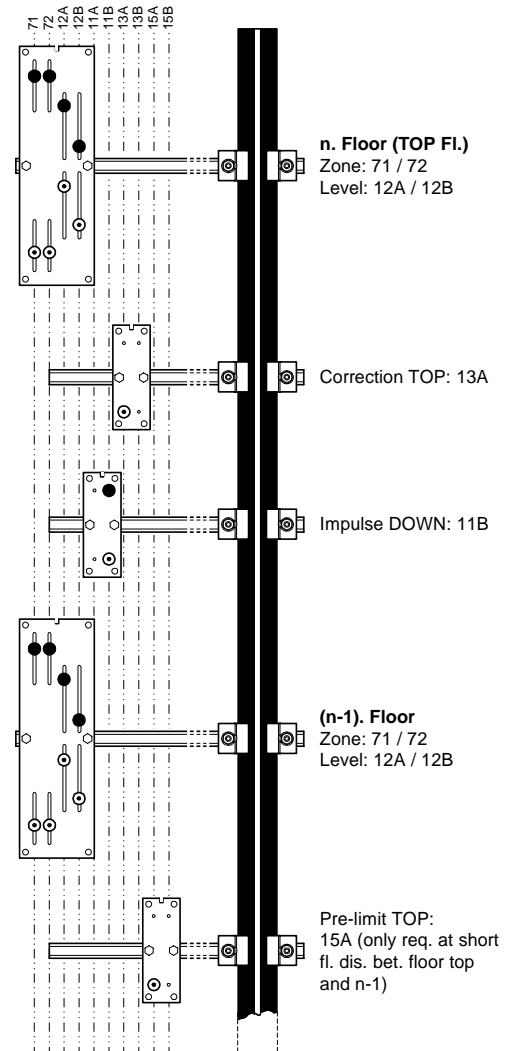
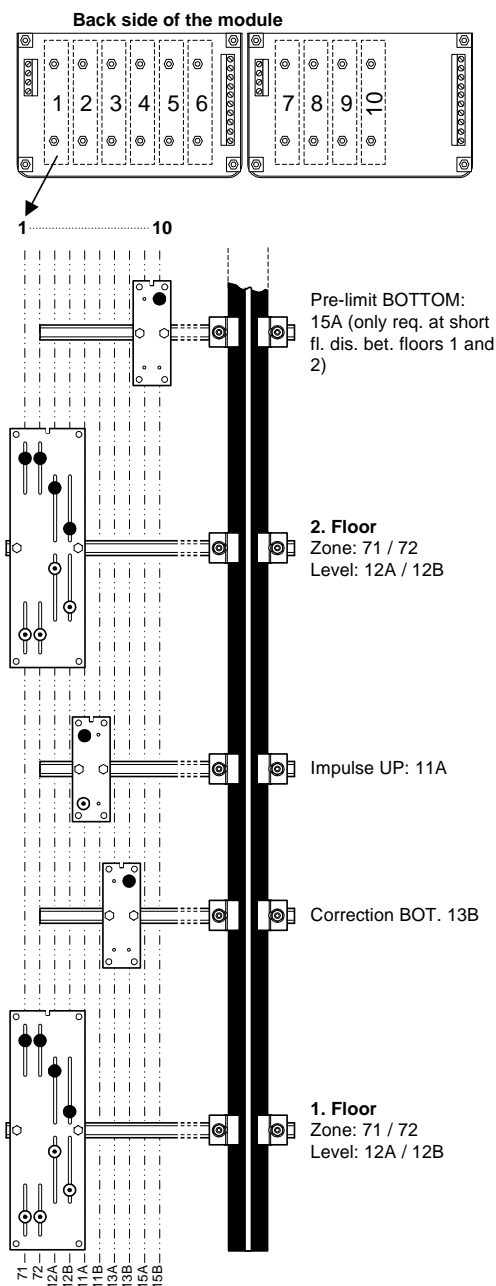


**2.9 Example „Standard Encoding“**

**i** The example shows an installation with short floor distances between floor 1 and 2. (s. magnet plate 15A/B)

This is only a schematic drawing!

See the mounting hints in the control manual!



**Marking of the magnets:**

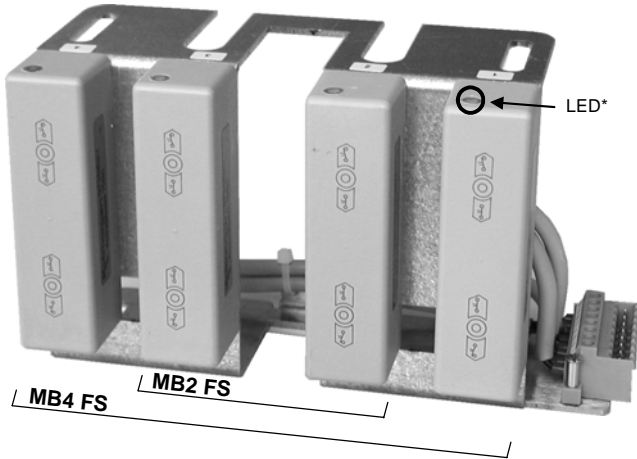
- Red = South pole
- Black = North pole

**Marking of the magnet plates**

natch = TOP

### 3 Magnet switch modules MB4 FS, MB2 FS

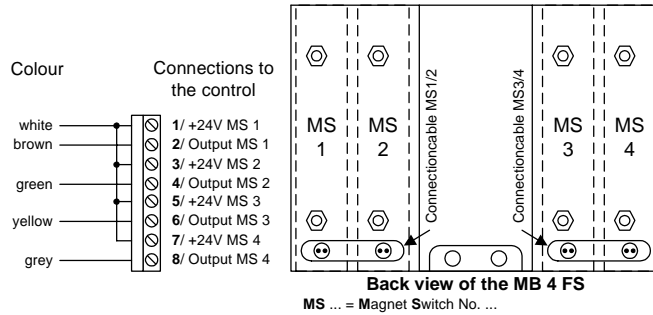
The magnet switch modules are constructed for using in the area of the guide rail.  
You can use the module with 2 or 4 magnet switches.



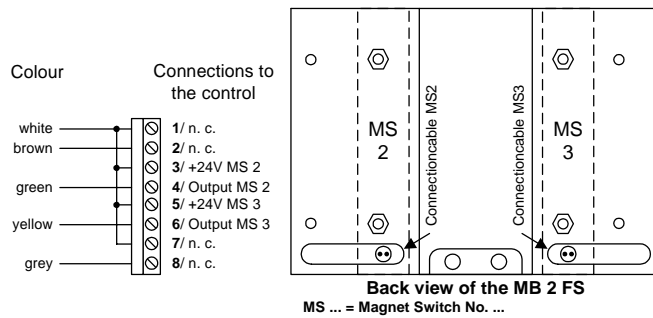
\* The LED is dependent on the type of magnet switches!  
Notice: The LED lights up, if the switch is closed and a current flows.

#### 3.1 Terminal arrangement

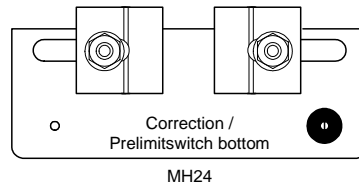
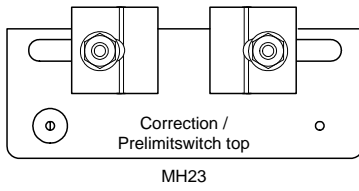
##### MB 4 FS:



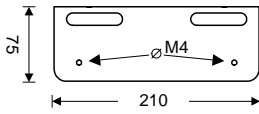
##### MB 2 FS:



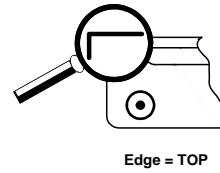
### 3.2 Diameters and overview Magnet Plates



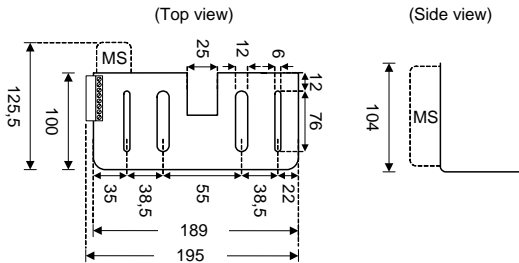
#### Diameters magnet plate:



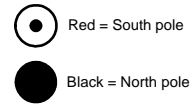
#### Marking magnet plate:



#### Diameters magnet switch plate:



#### Marking of the magnets:



### 3.3 Example „Simple Encoding“

**i** The example shows an installation with short floor distances between floor 1 / 2 and floor top / n-1

**\*Pre limit switch top (15A):** only req. at short floor distances between floor top and floor n-1 .

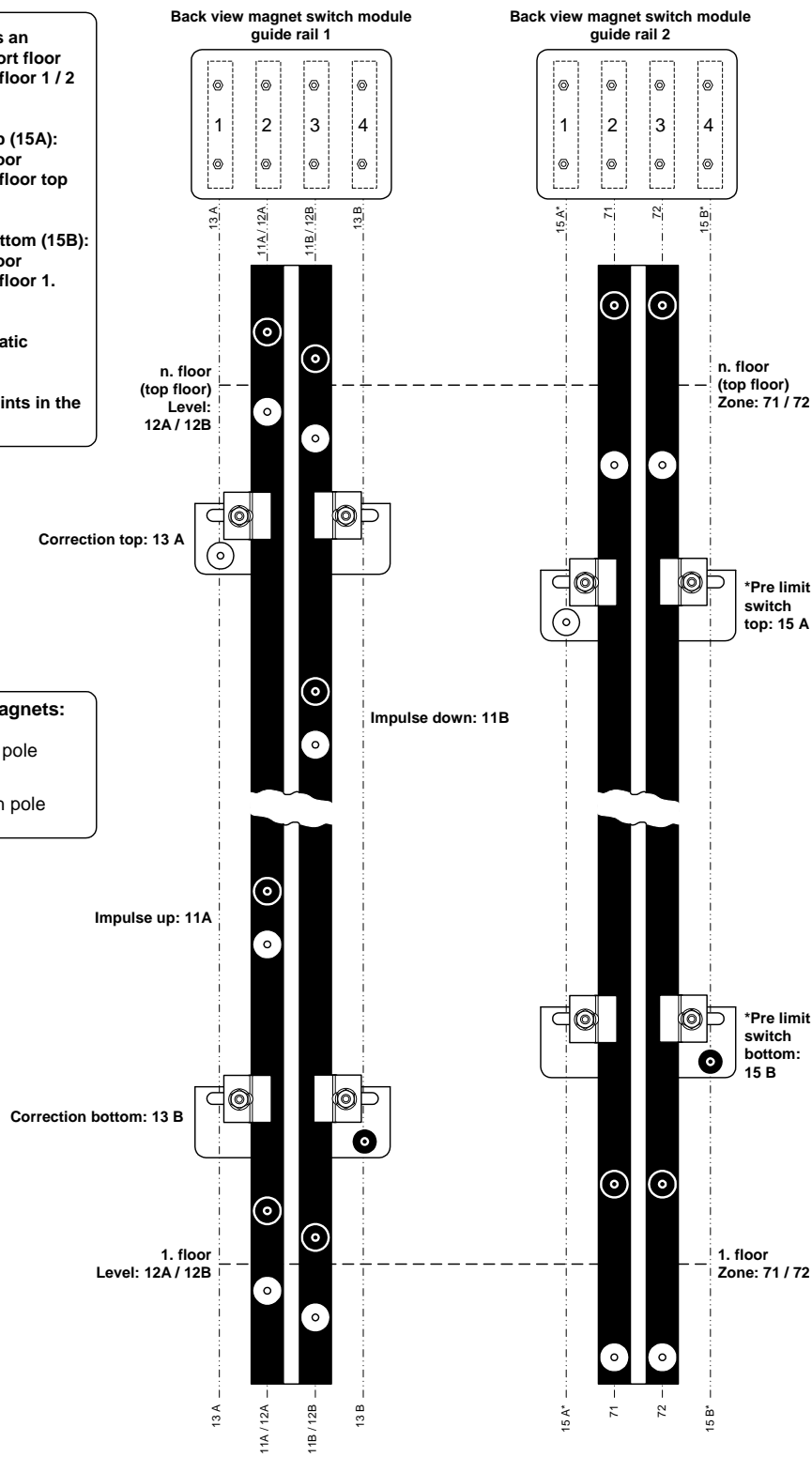
**\*Pre limit switch bottom (15B):** only req. at short floor distances between floor 1. and 2.

This is only a schematic drawing!

See the mounting hints in the control manual!

**Marking of the magnets:**

- Red = South pole
- Black = North pole





### 3.4 Example „Digital Shaft Encoding (DSC)“

**i** The example shows an installation with short floor distances between floor 1 / 2 and floor top / n-1



**\*Pre limit switch top (15A):**  
only req. at short floor distances between floor top and floor n-1 .

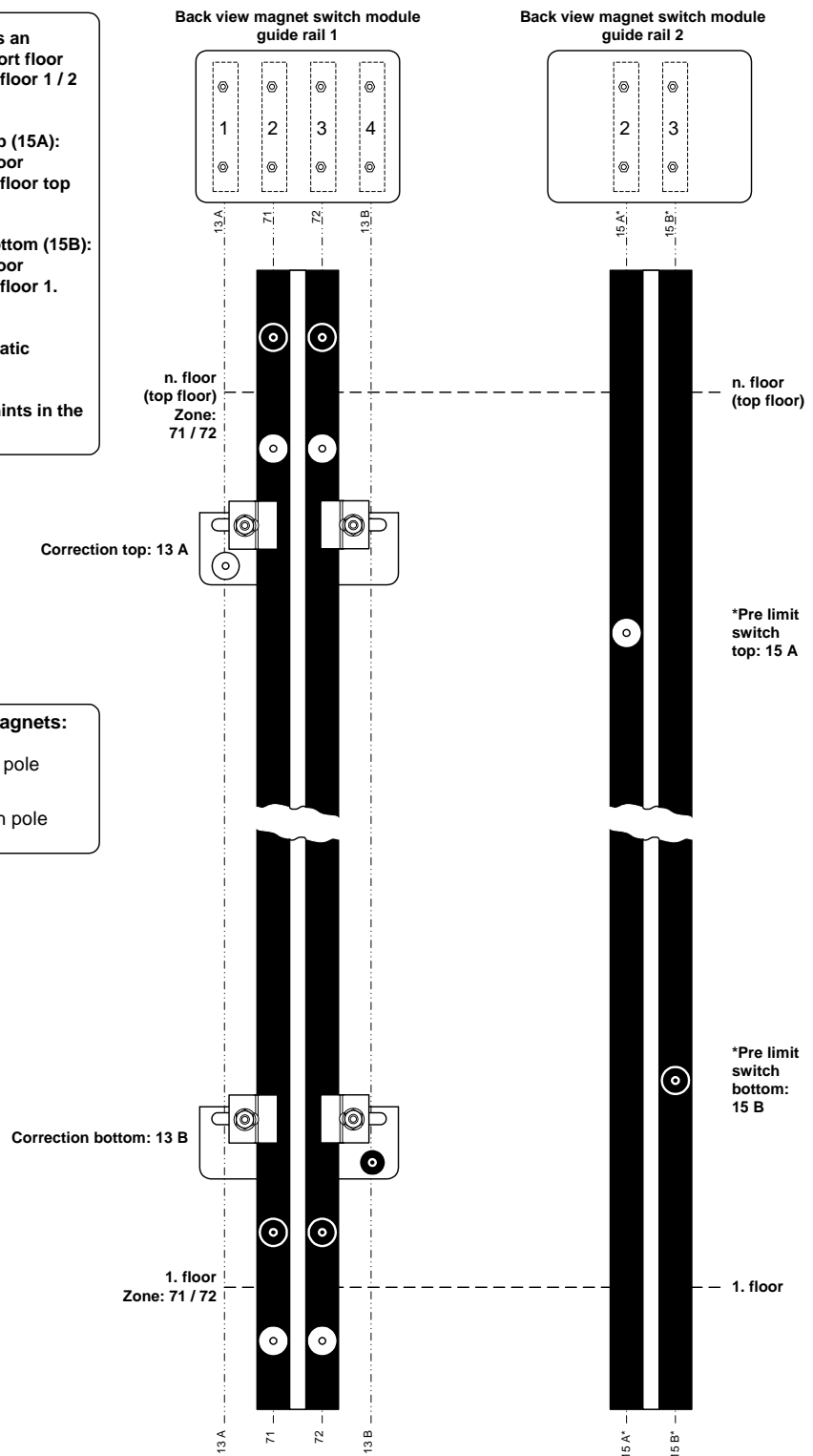
**\*Pre limit switch bottom (15B):**  
only req. at short floor distances between floor 1. and 2.

This is only a schematic drawing!

See the mounting hints in the controlmanual!

**Marking of the magnets:**

 Red = South pole  
 Black = North pole



### 3.5 Example „Absolute Positioning System (APS)“

**i** The example shows an installation with short floor distances between floor 1 / 2 and floor top / n-1



\* the switches 13A/B, 15 A/B and 19 are only a option in this encoding system.

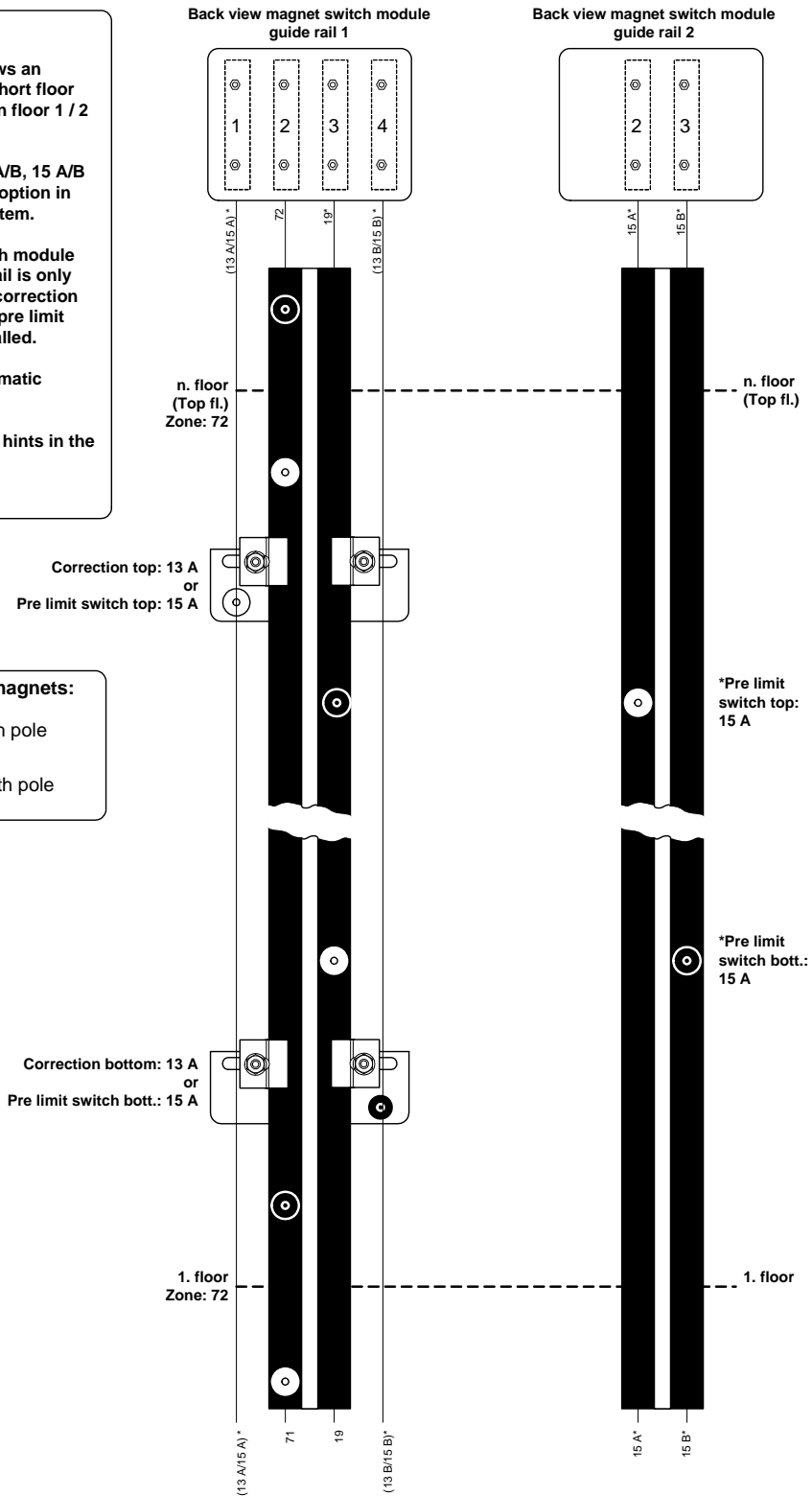
The magnet switch module for the 2. guide rail is only necessary, if the correction switches and the pre limit switches are installed.

This is only a schematic drawing!

See the mounting hints in the control manual!

**Marking of the magnets:**

-  Red = South pole
-  Black = North pole



#### 4 Technical Data of the Magnet Switch

|                                    |   |
|------------------------------------|---|
| <b>Switch output</b>               | bistable  |
| <b>Switching voltage</b>           | max. 30 VAC/DC  |
| <b>Switching current</b>           | max. 0,5 A  |
| <b>Life cycle</b>                  | 10 <sup>8</sup> to 10 <sup>9</sup> switching sequences load dependant |
| <b>Temperature range</b>           | -25 to +70 °C   |
| <b>Switching status indication</b> | (Dependent on switch type)  |
| <b>Protection</b>                  | IP 00   |
| <b>Enclosure material</b>          | Plastic   |
| <b>Diameters</b>                   | 24mm x 25mm x 89mm  |
| <b>Switching distances</b>         | 10 +/- 3 mm with magnet R10   |