

## Manual adjustment of the IG745/3S via turn and slide switches

### Abstract

With the new induction loop detector IG745/3S it is possible to adjust the detector alternatively to the PC program IGBT via turn and slide switches.

On activation of the switch functions, the parameters set with IGBT stay saved non-volatily in an EEPROM. The parameters in the EEPROM can still be changed by means of IGBT, but are not regarded when the switches are activated (switches take priority!).

Not activated switch functions or functions which cannot be adjusted via switches (e.g. bus classification) are parameterised by the operation program IGBT. For further information concerning IGBT please see the user manual for IG745/3S.

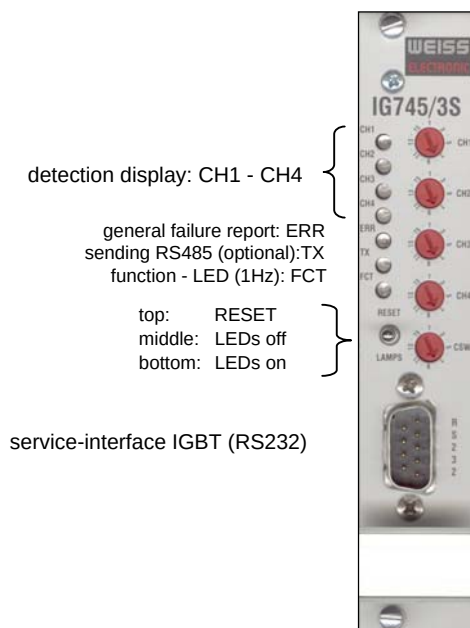
### Display and operation elements on the front

Besides the display and operation elements known from the IG745/3 (LEDs, RESET switch, DSUB-connector) the newly designed front panel of the IG745/3S has additionally five turn switches.

With the turn switches **CH1 - CH4** four hold times with four sensitivity and two readout functions (presence or impulse) each can be adjusted per channel (compatible to IG745/2, see table 1). The measuring time (reaction time) is optimised for the according sensitivity level (low sensitivity: short measuring time, high sensitivity: long measuring time).

With the turn switch **CSW** three oversampling levels (multiple measurement) with four different frequency ranges each are activated (see table 2, switch positions 13 – 16 have no function).

The release of the front switch functions is effected by slide switch **DIL4** depending on the channel. When the channel is released, the operation of the turn switch CH1 - CH4 causes an initialisation on the according channel (**DIL4 ON!**). The turn switch CSW causes a new alignment on all released channels (**DIL4 ON!**).



**Image1: front view IG745/3S**

### Turn switches CH1 – CH4 and CSW

| CH1 - CH4 | CH function           | Hold time <sup>1)</sup>           | Sensitivity [%] |                 |      |                  |
|-----------|-----------------------|-----------------------------------|-----------------|-----------------|------|------------------|
|           |                       |                                   | 0.3             | 0.1             | 0.06 | 0.02             |
|           | presence              | static ( $\infty$ ) <sup>2)</sup> | 1 <sup>3)</sup> | 2 <sup>4)</sup> | 3    | 4                |
|           | presence              | 2 h                               | 5               | 6               | 7    | 8                |
|           | presence              | 5 min.                            | 9               | 10              | 11   | 12 <sup>8)</sup> |
|           | Impulse <sup>5)</sup> | arbitrary <sup>6)</sup>           | 13              | 14              | 15   | 16               |

Table 1: Functions of turn switches CH1 – CH4

| CSW | Oversampling <sup>7)</sup> | Frequency range [kHz] |                 |         |          |
|-----|----------------------------|-----------------------|-----------------|---------|----------|
|     |                            | 30 - 44               | 45 - 64         | 65 – 84 | 85 - 110 |
|     | x1 (off)                   | 1                     | 2               | 3       | 4        |
|     | x2                         | 5                     | 6 <sup>8)</sup> | 7       | 8        |
|     | x4                         | 9                     | 10              | 11      | 12       |
|     | no function <sup>9)</sup>  | 13                    | 14              | 15      | 16       |

Table 2: Functions of turn switches CSW

- 1) with constant regulation the actual hold time depends on the attenuation
- 2) recommendation: adjust regulation in compliance with hold time (DIL8-5 = ON), see 1)
- 3) channel switched off
- 4) channel on constant occupation (e.g. for testing the switch-signals at the control unit)
- 5) impulse on occupancy / leaving if DIL8-2 = OFF/ON, impulse period (min. 300 ms) adjustable via turn off delay (IGBT)
- 6) hold time arbitrarily adjustable (IGBT)
- 7) oversampling x1 / x2 / x4: one-fold / two-fold- / four-fold measuring (minimal /medium /maximal noise immunity);  
channel reaction time = cycle period x channel oversampling factor
- 8) manufacturer's adjustment
- 9) pre-adjusted function is kept

### Operational elements on the additional board of the IG745/3S

On the additional board of the IG745/3S there are, in addition to the turn switches on the front, further switch functions (DIL-slide switch: **DIL4** (4-fold, **DIL8** (8-fold))). A change on the switches DIL4 and DIL8 causes a RESET after a few seconds. With this all channels are newly initialised and all adjustments actualised.

With **DIL4** the channel turn switches CH1 - CH4 and the turn switch CSW are activated depending on the channel. Only with release of **DIL4 = ON** the parameters adjusted on the front (e.g. sensitivity, frequency range, oversampling) are activated and the values for these parameters saved in the EEPROM are not regarded.

With **DIL8** further adjustments can be made (see table 3). DIL8 is activated with switch position **DIL8 - 1 = ON**. Please pay attention to the fact that all functions of this switch will be activated collectively and for channel functions (e.g. regulation) all channels will be identically adjusted at the DIL8 according to switch position. If you want an adjustment depending on channel of the DIL8 functions, please set DIL8-1 = OFF and conduct the parameterisation with the IGBT. The adjustments of the DIL8 will then not be regarded in the parameterisation of the detector and the EEPROM values adjusted with the IGBT will be set.

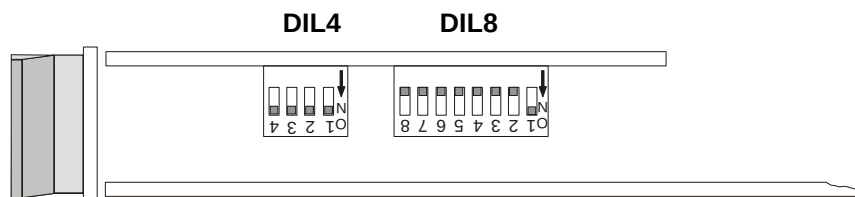
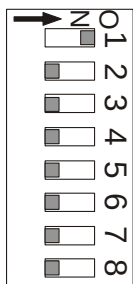


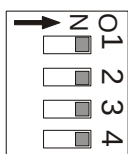
Illustration 2: Side view of the IG745/3S (DIL4 and DIL8, manufacturer's adjustment)

### Switch functions DIL4 and DIL8



|             | OFF                                                | ON                                                       |
|-------------|----------------------------------------------------|----------------------------------------------------------|
| <b>DIL8</b> |                                                    |                                                          |
| 1           | Block switch DIL8 [2-8] (IGBT)                     | Release switch DIL8 [2-8]                                |
| 2           | Impulse when occupied <sub>10)</sub>               | Impulse when left <sub>10)</sub>                         |
| 3           | Contact open when loop not occupied <sub>11)</sub> | Contact closed when loop not occupied <sub>12)</sub>     |
| 4           | Occupancy when failure                             | No occupancy when failure                                |
| 5           | Continuous regulation <sub>13)</sub>               | Regulation with compliance with hold time <sub>14)</sub> |
| 6           | Synchronisation: Slave <sub>15)</sub>              | Synchronisation: Master <sub>15)</sub>                   |
| 7           | Directional logic CH1 and CH2 not active           | Directional logic CH1 and CH2 active <sub>16)</sub>      |
| 8           | Directional logic CH3 and CH4 not active           | Directional logic CH3 and CH4 active <sub>16)</sub>      |

Table 3: Switch functions of the DIL8



|             | OFF                                                | ON                                                   |
|-------------|----------------------------------------------------|------------------------------------------------------|
| <b>DIL4</b> |                                                    |                                                      |
| 1           | Switch function front panel <u>channel 1</u> block | Switch function front panel <u>channel 1</u> release |
| 2           | <u>channel 2</u>                                   | <u>channel 2</u>                                     |
| 3           | <u>channel 3</u>                                   | <u>channel 3</u>                                     |
| 4           | <u>channel 4</u>                                   | <u>channel 4</u>                                     |

Table 4: Switch functions of the DIL4

- 10) only on activation of impulse mode (turn switches CH1 – CH4 on position 13 – 16 or adjustment of impulse mode via IGBT)  
 11) principle of quiescent current  
 12) principle of active current  
 13) for short hold times adjust < 30 min, application in LSA-sector; real hold time depends on attenuation  
 14) for long hold times adjust ≥ 30 min (especially for infinite hold time), application in door / gate sector;  
 hold time does not depend on attenuation  
 15) for synchronisation: connect pin synchronisation 1 and 2 each on connection strip, define a MASTER,  
 set other IG745/3S on SLAVE  
 16) second loop in driving direction: output switching (presence or impulse); first loop in driving direction : channel-LED flashing

### Examples for adjusting switch functions of IG745/3S

| requested function:                                                                                          | adjustments to make:                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| activate turn switch for channel 1 and 3:<br>deactivate turn switch for channel 2 and 4:<br>deactivate DIL8: | DIL4-1 = DIL4-3 = ON<br>DIL4-2 = DIL4-4 = OFF<br>DIL8-1 = OFF;<br>make adjustments with turn switch CH1, CH3 and CSW;<br>for channel 2 and channel 4 use IGBT |
| activate all switch functions:                                                                               | DIL8-1 = ON, DIL4-1 ... DIL4-4 = ON; make adjustments with<br>turn switch CH1 – CH4, CSW and DIL8-2 ... DIL8-8                                                |
| deactivate all switch functions:                                                                             | DIL8-1 = OFF; DIL4-1... -4 = OFF;<br>make all adjustments with IGBT!                                                                                          |
| synchronisation MASTER / SLAVE:                                                                              | DIL8-1 = ON; DIL8-6 = ON / OFF                                                                                                                                |
| manufacturer's adjustment of switch functions:                                                               | CH1 ... CH4 pos. 12, CSW pos. 6, DIL8-1 = ON;<br>DIL8-2 ... DIL8-8 = OFF; DIL4-1 ... DIL4-4 = ON                                                              |
| RLO channel 1 + 2:                                                                                           | DIL8-1 = DIL8-7 = ON;<br>set requested parameter for turn switch CH1 / CH2 and turn switch<br>CSW (alternatively use IGBT, DIL8-1 = OFF!)                     |
| impulse on exit - channel 4 :                                                                                | turn switch CH4 must be set on impulse (pos. 13 - 16)<br>DIL4-4 = ON; DIL8-1 = DIL8-2 = ON;                                                                   |

The following list indicates the parameters and functions of the IG745/3S which **cannot** be adjusted by means of switches; the. adjustment must be done by IGBT:

- in-between levels for sensitivity, measuring period, hold time
- turn-on/off delay
- classification function channel 1 and 2

Additionally, all diagnosis values of the IG745/3 can be displayed in the IGBT (e.g. measurement frequency, loop inductivity, cycle period, reset counter). For further information see user manual for IG745/3S.