



SWARCO TRAFFIC SYSTEMS GMBH



IG316 / IG326 / PLD32

Quick Reference Guide - Special Functions

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IG3x6_Quick Reference Guide – Special Functions_BE_00

CONTENT

1	General Description	1
1.1	Scope.....	1
1.2	Applicable Documents	1
2	New Features	2
2.1	Software Interface (LoopMaster)	2
2.2	Customizing	2
2.3	Regulation.....	2
2.4	Boost (sensitivity increase)	2
2.5	Relais Mode (NO / NC).....	2
2.6	Oversampling.....	3
2.7	Automatic adjustment	3
2.8	Maximum Duration of balance.....	3
3	LoopMaster operating software	4
4	Adjustment of the switch functions	5
4.1	General detector states	5
4.2	DIP switch functions "Customizing DIP-switch"	6
4.3	Customizing DIP-Switch	7

1 General Description

This guide provides an overview of the most significant new features of the detectors from the series IG316 (1-Channel), IG326 (2-Channel) and PLD32 (2-Channel) is used as a quick guide for the operating by means of the "LoopMaster" software.

1.1 Scope

This manual applies to devices with the following order numbers:

- **316W24S (Order No. D.000.611.144)** and **316ST24S (Order No. D.000.611.151):**
1-Channel loop detector
- **326W24S (Order No. D.000.611.145)** and **326ST24S (Order No. D.000.611.155):**
2- Channel loop detector
- **PLD32 (Order No. D.000.611.192)**
2-Channel loop detector

1.2 Applicable Documents

- **User Manual IG316**
- **User Manual IG326**
- **User Manual PLD32**
- **Guidance for the Loop Installation**

2 New Features

2.1 Software Interface (LoopMaster)

With the new generation of the IG 300 detectors an additional user level via the software interface LoopMaster opens up. There can be set and read all current parameter values and diagnostics via a serial interface (front panel). For this, all rotary encoding switches of the detector must be set to the zero position. At the activation of the interface, all parameters from the non-volatile EEPROM are read and set. These values may be different from the function switch values. A more detailed description you will find in Chapter 3!

2.2 Customizing

The customer can put together the availability of the DIP function switch (2-8) individually, by using the software interface LoopMaster, out of the following functions:

- Boost (sensitivity increase)
- Switch-on delay
- OFF delay
- Pulse on exit
- Relay output for fault
- Relay mode (active / passive)
- Pulse relay as fault (only IG316)
- Direction logic (only IG326 & PLD32)
- Oversampling
- Automatic adjustment
- Regulation
- Pulse duration

2.3 Regulation

The "Permanent Control", as well as the "Static Control" can be set via the service interface, or can be awarded on the "adaptation of the switch function" on one of the seven configurable DIP switch functions.

2.4 Boost (sensitivity increase)

The boost function automatically increase the sensitivity limited to the maximum. For example the drawbars of trailers can be reliably detected. After the vehicle leaves the loop, the sensitivity returns back to the original adjusted value. This function is disabled in the pulse mode.

2.5 Relais Mode (NO / NC)

OFF = open-circuit-principle / working current
ON = closed-circuit-principle / quiescent current

2.6 Oversampling

The default setting of the oversampling is 2. This is independent of the on and off switching of the oversampling:

By switching on the oversampling x2 (alternatively x4, x8, x16) two measurements are (or 4, 8, 16) summarized and thus achieves a higher noise immunity. The reaction time of the channel is determined by the activation of the double oversampling (or 4x, 8x, 16x) as long as:

Channel response time = cycle time x channel oversampling factor

(The cycle time in ms arises from the sum of the measured times of all channels, the Oversampling-factor = 2, 4, 8, 16)

That means, for a not detected channel, that the loop has to be damped longer than the reaction time, to activate the switching output of the channel.

2.7 Automatic adjustment

If the parameter "Automatic adjustment" is switched on during a channel error (factory setting: OFF) it occurs a cyclical adjustment, every 60 sec. Is this a volatile error, an automatic adjustment of the affected channel with the success that this channel occurs, is according to resolve it back to the fully function. The setting must be made separately for each channel (except for directional logic).



Warning: There is a hide at the time of troubleshooting for founding vehicle in an area of the loop! This can lead to critical and dangerous conditions of the construction.

2.8 Maximum Duration of balance

Using the parameter "maximum adjustment period" means that the duration of the channel adjustment is limited to the set duration. When this time is exceeded, the error message "maximum adjustment period exceeded" appears.

3 LoopMaster operating software

General Requirements for the operating with the “LoopMaster”

The Windows program “LoopMaster” allows an easy parameterization of the devices

The software is available on request or free of charge at the download section of our homepage:

<http://www.swarco.com/sts-en/Products-Services/Detection/Gates,-Barriers-Parking/LoopMaster-Service-Software>



Via the front serial port (SERVICE), by using of a special connecting cable, the devices can be operated.



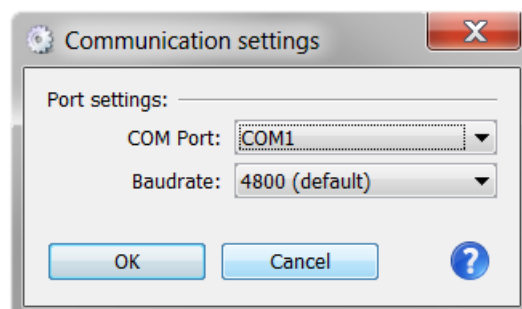
NOTE

As a connection cable, please use the Swarco Traffic Systems cable which you will find under the order No. “KA-SERVICE-AJ-USB” (order No.: D.000.604.466).

The connecting cable is directly connected to the USB interface of the PC and on the SERVICE port. By plugging in the connection cable, the PC automatically assigns an available COM port accordingly.

In addition to the available COM port of the PC there must be set the interface parameters in the program **LoopMaster**, if this is not already occur (**Settings – communication settings**):

- COM Port: (Select available COM port here)
- Baud rate: 4800 Baud.



After your selections have been made, the parameters of the connected IG316, IG326 or the PLD32 are automatically retrieved and displayed in the corresponding windows of the LoopMaster. For more informations about the using of the IG316, IG326 and PLD32 with the LoopMaster, please refer yourself directly to **Help → Help threads**.

4 Adjustment of the switch functions

4.1 General detector states

The IG316 (1-channel), IG326 (2-channel) and PLD32 (2-channel) are basically distinguished in two modes, which are activated with the positions of the rotary encoding switches:

Parameter setting

State 1 „**Rotary switch active** “: All parameters can be read and set via the DIP switch and the rotary encoding switches.

State 2 „**LoopMaster inputs Activated** “: All parameters are read from the nonvolatile EEPROM, they can be set and changed with the software LoopMaster.

The state 2 is only active when both rotary encoding switches (at the IG316 only a rotary encoding switches) are provided to position 0 ("LoopMaster inputs activated").

If one of the rotary encoding switches is equal to 0, then the detector changes to the state 1 "rotary switch active".

In the LoopMaster these states are shown in the parameter window "Channel Status → Parameter Settings".



Channel status:

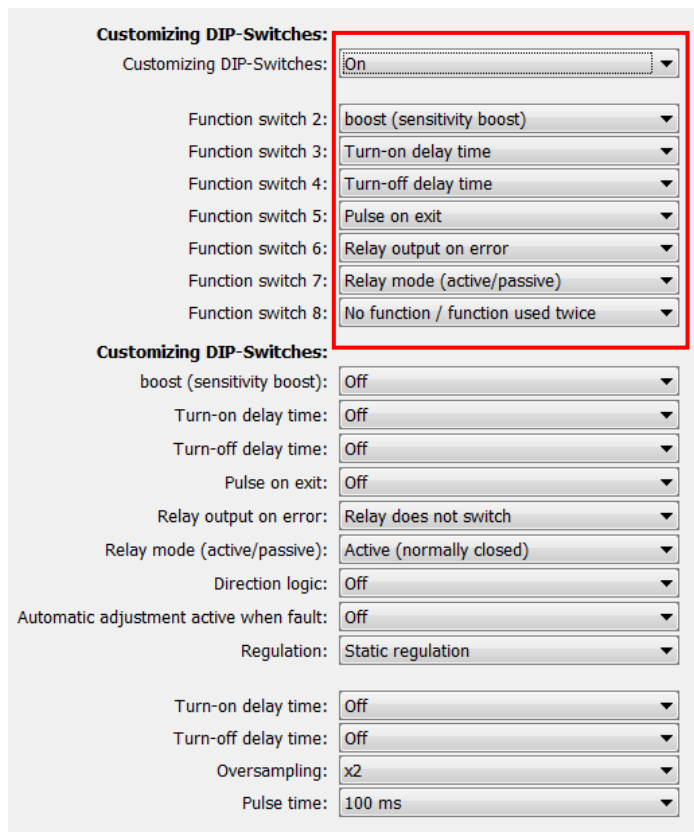
Parameter setting: **Rotary switch active**

Rotary switch (position): 1

4.2 DIP switch functions "Customizing DIP-switch"

The device offers you the opportunity to set the functions of the switches on the front page, according to your individual needs. To do this you can freely assign the functions of the DIP switches under the rider "detector" for each "drop boxes" (Function switch 2 to switch function 8).

The individually assigned functions can then be switched on or off via the function switch.



Customizing DIP-Switches:

Customizing DIP-Switches: On

Function switch 2: boost (sensitivity boost)

Function switch 3: Turn-on delay time

Function switch 4: Turn-off delay time

Function switch 5: Pulse on exit

Function switch 6: Relay output on error

Function switch 7: Relay mode (active/passive)

Function switch 8: No function / function used twice

Customizing DIP-Switches:

boost (sensitivity boost): Off

Turn-on delay time: Off

Turn-off delay time: Off

Pulse on exit: Off

Relay output on error: Relay does not switch

Relay mode (active/passive): Active (normally closed)

Direction logic: Off

Automatic adjustment active when fault: Off

Regulation: Static regulation

Turn-on delay time: Off

Turn-off delay time: Off

Oversampling: x2

Pulse time: 100 ms

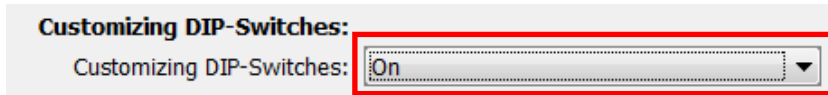
The following functions can be individually assigned to the function switches:

- no function
- Boost (sensitivity increase)
- Switch-on delay
- OFF delay
- Pulse at exit
- Relay output for disturbance
- Relais Mode (active/passive)
- Pulse relay as error message (only IG316)
- Directional logic (only IG326 & PLD32)
- Oversampling
- Automatic adjustment
- Adjustment
- Pulse duration

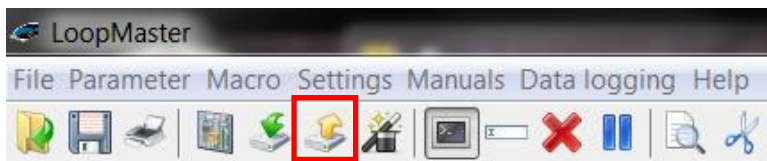
An assignment of multiple switches with the same function is not possible.

4.3 Customizing DIP-Switch

The newly defined DIP switches can be turn on or off: via the **Flag „Customizing DIP-Switch“**:

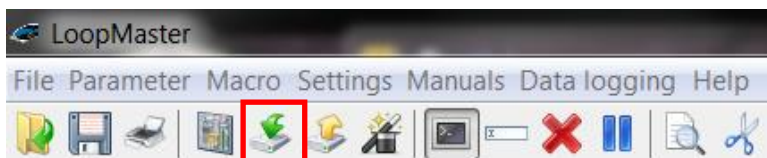


The changes for the DIP switch feature, as in chap. 4.2 describes, can only be activated with this flag. If the flag *Customizing* is off for the DIP switches, the standard functions are active. The activation is finally done with the transfer of the parameters to the detector. To do this, the button **"Upload to detector"** must be pressed.



After the successfully transferring of the parameters (after each change of the DIP switch feature), the newly defined settings of the switch are read and a balance is triggered out. Please consider here again the condition of the detector which is mentioned in chap. 4.1.

During the retrieval of the parameters, via the **LoopMaster**, the current settings of the DIP switch features are displayed in the tab **"detector"**.



If the flag *Customizing*, for the DIP switches is **"On"**, the parameterization of the detector takes place only on the tab "detector". The parameter windows of each channel and the associated settings are disabled. All displayed values in the parameter window will be used for the diagnostic purposes and for the notification of the currently set functions.

Because there are more functions as switches, all functions that have not been configured on the switches can be set additionally via this window.

**NOTE**

The DIP switches will always have a higher priority.

For example, the feature "boost (increase sensitivity)" will not be turned on at this window, if the function of the DIP switches should be turned on the switches.

Customizing DIP-Switches:

boost (sensitivity boost):	Off
Turn-on delay time:	Off
Turn-off delay time:	Off
Pulse on exit:	Off
Relay output on error:	Relay does not switch
Relay mode (active/passive):	Active (normally closed)
Direction logic:	Off
Automatic adjustment active when fault:	Off
Regulation:	Static regulation

The activation of the individual features via this dropdown fields had an effect on both channels of the IG326 and the PLD32.

Furthermore, the time of delay and OFF delay, as well as the pulse duration and the oversampling can be set via a drop down box, which is fixed configured into the standard assignment of the switches.

Turn-on delay time:	Off
Turn-off delay time:	Off
Oversampling:	x2
Pulse time:	100 ms

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