SWARCO TRAFFIC SYSTEMS GMBH

IG316 / IG326 / PLD32
Quick Reference Guide

CONTENT

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). It 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**
- **Loop Installation Manual**

2 New Features

2.1 Software Interface (LoopMaster)

With the new generation of the IG300 series and PLD detectors an additional operating level is provided via **LoopMaster** software interface. There you can set and read all current parameter values and diagnostics via a serial interface (front side). To do so, all rotary switches of the detector must be set to the zero position. Activating the interface, all parameters from the non-volatile EEPROM are read and set. These values can be different from the function switch values. For a more detailed description see chapter 3!

2.2 Customizing

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

- Boost (sensitivity boost)
- 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 and PLD32)
- Oversampling
- Automatic adjustment
- Regulation
- Pulse duration

2.3 Regulation

The **"Permanent Control"**, as well as the **"Static Control"** can be set via service interface, or can be assigned via the function **"adaptation of the switch function"** to one of the seven configurable DIP-switches.

2.4 Boost (sensitivity boost)

The boost function automatically increases the sensitivity limited to the maximum. For example the drawbars of trailers can be reliably detected. After the vehicle has left the loop, the sensitivity returns back to the originally set 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 switching state (on / off) of the oversampling:

By switching on the oversampling x2 (alternatively x4, x8, x16), two measurements (or 4, 8, 16) are summarized which will lead to higher noise immunity. By activating the oversampling, the reaction time of the channel becomes twice (resp 4x, 8x, 16x) as long:

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, oversampling factor = 2, 4, 8, 16)

For a not detected channel this means e.g., that the loop has to be attenuated longer than the reaction time in order to activate the switching output of the channel.

2.7 Automatic adjustment

If the **parameter "Automatic adjustment"** is switched on during a channel error (default setting: OFF) a cyclical adjustment is effected every 60 sec in the case of a channel disturbance. If this is a volatile error, an automatic adjustment of the according channel is effected after the error is eliminated. As a result, the channel will be fully functioning again. The setting must be made separately for each channel (except for directional logic).

ATTENTION!

If a vehicle is present on the loop during the alignment phase, it will be ignored! This can lead to critical and dangerous system conditions.

2.8 Maximum adjustment period

By means of the **parameter "maximum adjustment period"** the period of the channel adjustment is limited to the set maximum value. If this period is exceeded, the error message "maximum adjustment period exceeded" appears.

3 LoopMaster operating software

General requirements for the operation with LoopMaster

The Windows program **LoopMaster** allows an easy parameterization of the devices.

The software is available on request and can be downloaded free of charge from the website under
http://www.swarco.com/sts-en/Products-Services/ Detection/ Gates,-Barriers-Parking/LoopMaster-Service-Software

Using a special connecting cable the devices can be operated via the front serial port (SERVICE).

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 to the SERVICE port. Plugging in the connection cable, the PC automatically assigns an available COM port accordingly.

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

- COM Port: (select available COM port here)
- Baud rate: 4800 baud.
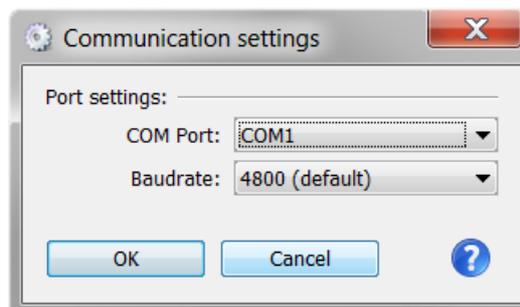
After the settings are adjusted, the parameters of the connected devices are automatically retrieved and displayed in the corresponding windows of the **LoopMaster**. For more information about the operation with the **LoopMaster** see **Help → Help threads**.

For further information about operating the software refer to the video tutorials under **https://www.youtube.com/user/SwarcoTrafficSystems**

4 Adjustment of the switch functions

4.1   General detector states

For the devices IG316 (1-channel), IG326 (2-channel) and PLD32 (2-channel) basically two states are defined, which are activated by means of the rotary switch positions:
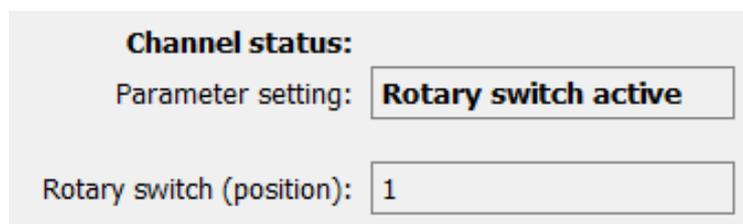
Parameter setting

State 1 **"Rotary switch active"**:   All parameters can be read and set via DIP switches and rotary switches.

State 2 **"LoopMaster inputs activated":** All parameters are read from and set by the non-volatile EEPROM and can be changed with the **LoopMaster** software.

State 2 is only active if both rotary switches (for the IG316 only one rotary switch) are set on position 0 (**"LoopMaster inputs activated"**).

As soon as one of the rotary switches is unequal 0, the detector changes into 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-Switches"

The devices offer you the possibility to set the functions of the switches on the device front, according to your individual needs. To do so, in the **tab "detector"** you can freely assign the functions of the DIP switches by means of the according drop-down options (function switch 2 to function switch 8).
The individually assigned functions can then be switched on or off via function switches.

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

- no function / function used twice
- Boost (sensitivity boost)
- Turn-on delay time
- Turn-off delay time
- Pulse on exit
- Relay output on error
- Relay mode (active/passive)
- Pulse relay as error message (only IG316)
- Direction logic (only IG326 and PLD32)
- Oversampling
- Automatic adjustment
- Regulation
- Pulse time

It is not possible to assign the same function to several switches.

4.3   Customizing DIP-Switches

The newly defined DIP switches can be turned on or off via the **flag "Customizing-DIP-Switches"**:

The changes for the DIP switches as described in chap. 4.2 will be activated with this flag. If the flag is turned off, the standard functions are active.
The activation will be carried out when the parameters are transferred to the detector. To do so, the **button "Upload to detector"** must be pressed.
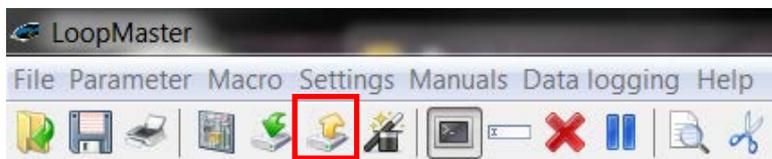
After the parameters are successfully transferred (after each change of the DIP switches) the newly defined settings of the switch functions are imported and an alignment will be triggered. Please observe the detector states as described in chapter 4.1.

During the retrieval of the parameters via **button "Read parameter"** in the **LoopMaster** the current settings of the DIP switches are displayed in the **tab "detector"**.
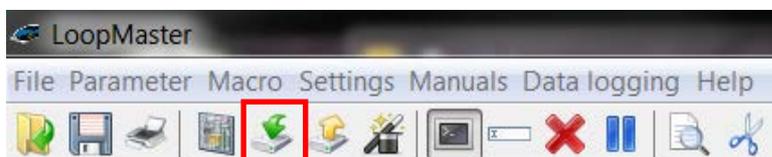
If the flag **"Customizing DIP-switches"** is turned on, the parameterization of the detector is carried out only via the **tab "detector"**. The parameter windows of the individual channels and the associated setting possibilities are disabled. All displayed values in the parameter window can then be used for diagnostic purposes and for displaying the currently set functions.

Because there are more functions than switches, all functions which have not been assigned to switches can additionally be set via this window.

NOTE

The DIP switches always have a higher priority.

For example, the **option "boost (sensitivity boost)"** cannot be turned on via this window, if the function is supposed to be activated via DIP 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 individual features via these drop-down options affects both channels of the IG326 and the PLD32.

Furthermore, the turn-on delay and turn-off delay times, as well as the pulse duration and the oversampling, can be set via drop-down options, which are firmly configured in 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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