ProLoop2 (11-pin)

Translation of the original instructions

General

1 Safety instructions

These devices and their accessories may only be operated in compliance with the operating instructions (intended use)!
These devices and their accessories may only be commissioned by trained and qualified personnel.
These devices may only be operated with the intended supply voltage and parameters.
If malfunctions occur that cannot be rectified, shut down the device and send it in for repair.
These devices are only allowed to be repaired by the manufacturer. Tampering and alterations are not permitted. This will invalidate all guarantee and warranty claims.

2 Mechanical mounting in the switch cabinet

The 11-pin version of the ProLoop is mounted onto a mounting rail base (ES 12). This base is ordered and delivered separately as it is not included in the scope of delivery.

3 Electrical connection

The loop connection wiring to the loop detector must be twisted at least 20 times per meter.
Please wire the device in accordance with the terminal assignment. Make sure the terminals are assigned correctly.

Terminal connection diagram, ES 12 base assignment

- Check the electrical connection (base assignment) when exchanging a loop detector from another manufacturer.

4 Value and parameter setting options

General

The settings of the ProLoop devices in this chapter are shown and explained for the 1-loop device. The settings for loop 2 of a 2-loop device should be made using the corresponding method.

4.1 LCD display and controls

Standard display 1-loop device | Standard display 2-loop device | Control button | Control button
---|---|---|---
| | | | 

Explanation of the LCD display

Explanation of the LED

- Red & green: Start-up phase
- Green: Operation
- Red: Configuration
- Flashing green: Loop activated
- Flashing red: Error
- Flashing red & green: Simulation
Output 2 can also be set as an alarm output. (see Table 4.11b for settings)

Relay response to malfunctions (see chapter 6 Troubleshooting):

### 1. Door and gate systems
A malfunction causes the output relay to be released. The alarm relay drops out.

### 2. Barrier
A malfunction causes the output relay to pick up. The alarm relay drops out.

### 3. Quiescent current
A malfunction causes the output relay to be released. The alarm relay drops out.

### 4. Direction logic
4.8 Relay response to malfunctions (see chapter 6 Troubleshooting):

- **On delay:** The relay picks up after the time t when the loop is activated and drops out when the loop is exited.
- **Off delay:** The relay picks up when the loop is activated and drops out after the time t when the loop is exited.
- **Activation pulse:** The relay picks up when the loop is activated and drops out again after the time t.
- **Impulse by leaving the loop:** By leaving the loop, the relay picks up after the time t, relay drops out.

### 1. Door/gate systems
The assigned output relay picks up when the loop is activated and drops out when the loop returns to a non-activated condition.

### 2. Barrier
The assigned output relay picks up when the loop is activated and drops out when the loop returns to a non-activated condition.

### 3. Quiescent current
Output 2 switches if an object moves from loop 1 to 2. Output 2 switches if an object moves from loop 1 to 2. For a short time, both loops must be activated. The output resets again when leaving the second loop. Both loops must have returned to a non-activated condition for another direction detection.

### 0: Loop 2
Loop 2 can be deactivated in a 2-loop device.

#### 4.3 Time functions 1, time unit 2 and time factor 3 (see Table 4.11a for settings)

#### 4.4 Sensitivity 4 (see Table 4.11a for settings)
The sensitivity $S$ of the loop detector can be adapted in 9 stages: $S1 = \text{Lowest sensitivity}, S9 = \text{Highest sensitivity}, S6 = \text{Factory setting}$. The sensitivity setting depends on the frequencies (see chapter 4.6 Frequency).

#### 4.5 Automatic Sensitivity Boost ASB 5 (see Table 4.11a for settings)
ASB = Automatic Sensitivity Boost. ASB is required in order to be able to recognise trailer drawbars after activation.

#### 4.6 Frequency 6 (see Table 4.11a for settings)
Four different frequencies F1, F2, F3, F4* can be set in order to avoid interference when using several loop detectors. These settings influence the sensitivity (the sensitivity can be set in the range 1–7 for frequencies F1 to F3). F2 to F4 can be set for inductance < 150 $\mu$H and only F4 can be set for inductance < 75 $\mu$H.

#### 4.7 Direction logic 7 (see Table 4.11a for settings)
The direction logic function can only be used with a 2-loop device. Direction logic must have been set in the basic function (see chapter 4.2). Detection can be performed from:
- ➝ Loop 1 to loop 2
- ➝ From loop 2 to loop 1
- ➝ from both directions

#### 4.9 Protection against supply voltage failure 9 (see Table 4.11a for settings)
Note: The set parameter values are preserved in the case of a mains failure - regardless of the «Protection against supply voltage failure» function. $P1 = \text{Protection against supply voltage failure activated}: The sensitivity is restricted to 1–5.

### 4.9.1 Signal characteristics with protection against supply voltage failure active (Function 9 = 1)
For Activation (e.g. Barriers)

#### Basic function 0 = 2 Barrier systems
- **Output**
  - Without power
  - Initialisation
  - Free
  - Occupied
  - Free
  - open (no)
  - closed (nc)

For Safeguarding (e.g. Barriers, bollards)

#### Basic function 0 = 3 Quiescent current
- **Output**
  - Without power
  - Initialisation
  - Free
  - Occupied
  - Free
  - open (no)
  - closed (nc)

### 4.10 Changeover from operation to configuration mode

#### 1- loop device
- **Display after start-up:**
  - Touch the «Mode» button once to change to configuration mode

#### 2- loop device
- **Display after start-up:**
  - Touch the «Mode» button once to change to configuration mode

Back to automatic mode: Press «Mode»-button >1 second)
### Configuration mode

Note on 2-loop device: After loop 1 has been set, the parameters for loop 2 are set (make the settings using the same procedure) and the settings are not shown in the table with the exception of the direction logic.

#### Table 4.1a Settings

<table>
<thead>
<tr>
<th>Button operation parameter</th>
<th>LCD display</th>
<th>Button operation parameter</th>
<th>LCD display</th>
<th>Button operation parameter</th>
<th>LCD display</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - Basic function</td>
<td><img src="image" alt="Display" /></td>
<td>1 - Time function</td>
<td><img src="image" alt="Display" /></td>
<td>2 - Time unit</td>
<td><img src="image" alt="Display" /></td>
<td>3 - Time factor</td>
</tr>
</tbody>
</table>

#### Table 4.1b Addition to function 8 (configuration of output 2) and function 0

<table>
<thead>
<tr>
<th>Loop 2</th>
<th>Output 2</th>
<th>Bemerkung</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-loop device, 2 relays</td>
<td>–</td>
<td>1/0/A*</td>
</tr>
<tr>
<td>2-loop device, 2 relays</td>
<td>active</td>
<td>–</td>
</tr>
<tr>
<td>deactivated</td>
<td>1/0/A</td>
<td>1 = Output 2 active; 0 = Output 2 off, A = Output as alarm output</td>
</tr>
</tbody>
</table>

* factory settings
5 Simulation mode

Changeover to simulations mode

Press <Sim1> button
Press <Sim2> button
Press <Sim2> button
Press <Sim2> button
Anmerkungen

Changeover to simulation mode:
Press the Sim1 + Sim2 buttons simultaneously for 2 seconds.

Simulation mode:

Activation of the loop

Activation of the output relay

Alarm output activation

Inductance of loop 1

Inductance of loop 2

Exiting simulation mode

6 Troubleshooting

If an error occurs, operating mode «A» and error display «E» light up alternately and an error code such as E 012 is displayed. The LED changes to flashing red, the 4 most recent errors are stored and can be interrogated.

Display

Error

E001
Interruption Loop 1

E002
Interruption Loop 2

E011
Short circuit Loop 1

E012
Short circuit Loop 2

E101
Under-voltage

E102
Over-voltage

E201/E202
Saving error

E301
Loop 1 too large

E302
Loop 2 too large

E311
Loop 1 too small

E312
Loop 2 too small

Briefly pressing the «Data» button shows the last of 4 errors on the display. Another short press switches to the error before that, and so on. When the button is pressed for the 5th time, the device switches back to automatic mode. If you press the «Data» button for 4 seconds during the query, all error messages are deleted. The figure shows memory slot 1 in which error 001, Interruption loop 1, has been stored (example).

7 Reset

Reset 1 (recalibration)
The loop(s) is/are recalibrated.

Reset 2 (factory setting)
All values (except the error memory) are reset to the factory settings (see Table 4.11a). The loop(s) is/are recalibrated.

8 Most important technical data

ProLoop2 11-pin

Supply voltage /
Current consumption /
Power consumption

24 VAC –20% to +10%, 84 mA, max. 1.8 VA
24 VDC –10% to +20%, 84 mA, max. 1.3 W
115 VAC –15% to +10%, 30 mA, max. 3.5 VA
230 VAC –15% to +10%, 16 mA, max. 3.7 VA

Loop inductance

max. 20 to 1000 µH, ideally 80 to 300 µH

Loop connection wiring

At 20-40 µH: max. 100 m at 1.5 mm²
At >40 µH: max. 200 m with 1.5 mm²

min. twisted 20x/m

Loop resistance

< 8 Ohm with connection wire

Output relay (loop)

AC-1: max. 240 VAC, 2 A / DC-1: max. 30 VDC, 1 A

Dimensions

36 x 74 x 88 mm (W x H x D)

Housing mounting

Mounting rail installation via 11-pin base ES 12

Connection type

Screw terminals base ES 12

Protection class

IP 20

Approvals, safety

See declaration of conformity at www.bircher-reglomat.com

Operating temperature

–20°C to +60°C

Storage temperature

–40°C to +70°C

Air humidity

<95% non-condensing

9 Declaration of conformity

Manufacturer: Bircher Reglomat AG, Wiesengasse 20, CH-8222 Beringen declares that the product, Type ProLoop2 11-pin
Model: ProLoop2 1.5xxxxx, ProLoop2 2.5xxxxx, ProLoop2 1.5S.78xxxxx, ProLoop2 2.5S.78xxxxx, 24ACDC, 115AC, 230AC
Intended purpose: Programmable loop detector for controlling gates and barriers as well as for regulating and counting cars in parking areas
if used in accordance with the intended purpose, complies with the basic requirements acc. to:
R&TTE Directive, Appendix III 1999/5/EC

10 Contact data

Manufacturer: Bircher Reglomat AG
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