Swissdoor
DØRTEKNIK FOR PROFESSIONELLE
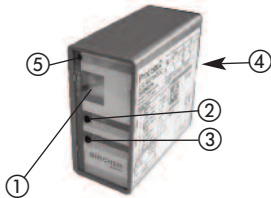
BIRCHER
Reglomat

ProLoop2 (11-pin)

Loop detector for industrial doors and gates,
car parks and parking bollards

Translation of the original instructions

General

① LCD display
② «Mode»-button
③ «Data»-button
④ Plug-in connection, 11-pin
⑤ Info LED

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.

A: Supply voltage connection	B: Loop connection 1-channel device	C1: Loop connection 2-channel device	C2[1]: Loop connection 2-channel device	D: Relay connection output 1	E: Relay connection output 2
AC — A1 AC — 11	1 — 34, 24, 32	2 — 34, 24, 32 / 1	2 — 34, 32, 24 / 1	21 common A2 nc 22 no	12 common 31 nc 14 no

[1] Only applies to ProLoop2 with the designation «... .S.78. ... .»

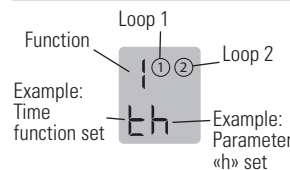### 4 Value and parameter setting options

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
A① 11	A①② 11	● Mode Sim1	● Data Sim2

Explanation of the LCD display

Function — Loop 1
Loop 2

Example:
Time function set

Example:
Parameter «h» set

Explanation of the LED

Red & green:	Start-up phase
Green:	Operation
Red & green:	Configuration
Flashing green:	Loop activated
Flashing red:	Error
Flashing red + green:	Simulation

○ Info

1

4.2 Basic functions *0* (see Table 4.11a for settings)

Parameters

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

4: Direction logic   Output 1 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.

Relay response to malfunctions (see chapter 6 Troubleshooting):

1. Door/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 (2-loop device only)	A malfunction causes the output relays to be released.

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

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

4.4 Sensitivity 4 (see Table 4.11a for settings)

The sensitivity *5* (= Sensitivity) of the loop detector can be adapted in 9 stages: *51 =* Lowest sensitivity, *59 =* Highest sensitivity, *56 =* 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 (= **A**utomatic **S**ensitivity **B**oost). 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 µH and only F4 can be set for inductance < 75 µH.

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

4.8 Output 2 *8* (see Table 4.11b for settings)

Output 2 can also be set as an alarm output.

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.

P 1 = 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:	A①	Touch the «Mode» button once to change to configuration mode	Mode Sim1	0①

2- loop device

Display after start-up:	A①②	Touch the «Mode» button once to change to configuration mode	Mode Sim1	0① ← ① Loop 1 is selected	Mode Sim1	0② ← ② Loop 2 is selected

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

*factory settings

4.11 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
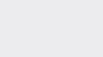
Table 4.1a Settings
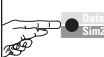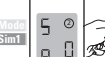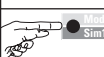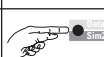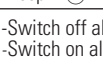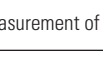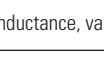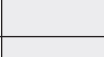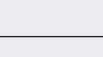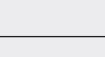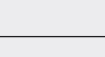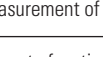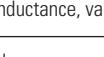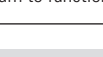
Function	LCD display	Button operation functions	Parameter (options, left → right)	Notes
0 - Basic function	0⊙ --	Mode / Sim1	Door/gate systems* (0⊙ --); Barrier systems (0⊙ 2); Quiescent current (0⊙ 3); Direction logic (0⊙ 4); Only 2-loop device: Loop 2 activated: «1»* deactivated: «0» (0 --)	With deactivation of Loop 2 the output 2 becomes configurable → 8
1 - Time function	1⊙ th	Mode / Sim1	∞* (1⊙ th); On delay (1⊙ tE); Off delay (1⊙ tF); Activation pulse loop (1⊙ t⌐); Time funct. pulse when loop is exited (1⊙ t⌐); Max. presence (1⊙ tP)	This display does not appear with time function th (∞)
2 - Time unit	2⊙ th	Mode / Sim1	0.1 second (2⊙ tc); 1 second* (2⊙ tc); 1 minute (2⊙ tn); 1 hour (2⊙ th)	This display does not appear with time function th (∞). The time unit multiplied by the time factor gives the set time.
3 - Time factor	3⊙ C⌐	Mode / Sim1	1* (3⊙ C⌐); Set value between 1 and 99 by touching or holding the «Data» button	The time unit multiplied by the time factor gives the set time.
4 - Sensitivity	4⊙ S⌐	Mode / Sim1	4* (4⊙ Sb); Set value betw. 1 (lowest sensi.) and 9 (highest sensi.) by touching or holding the «Data» button	S = Sensitivity. Setting restrictions: protection against supply voltage failure (with P1): Value 1-5
5 - Automatic Sensitivity Boost ASB	5⊙ A⌐	Mode / Sim1	Switched off* (5⊙ A0); Switched on (5⊙ A1)	ASB stands for Automatic Sensitivity Boost
6 - Frequency	6⊙ F4	Mode / Sim1	Frequency F4* (6⊙ F4); Frequency F1 (6⊙ F1); Frequency F2 (6⊙ F2); Frequency F3 (6⊙ F3)	
7 - Direction logic	7⊙② d--	Mode / Sim1	Both directions* (7⊙② d--); Loop 2 to loop 1 (7⊙② d-⌐); Loop 1 to loop 2 (7⊙② d⌐-)	This display appears only with a 2-loop device. The direction logic function can only be implemented with 2 loops and a 2-loop device
8 - Output 2 configuration	8⊙ o0	Mode / Sim1	Output 2 is switched off (8⊙ o0); Output 2 is connected as an alarm output (8⊙ oA); Output 2 is bound to loop 1 (8⊙ o1); (8⊙ --)	Loop 2 has to be deactivated «0» → Basic function
9 - Protection against supply voltage failure	9⊙ P0	Mode / Sim1	Supply voltage failure: Switched off* (9⊙ P0); Switched on (9⊙ P1)	If parameter 9=P 1 parameter 5 must be set to off (5=A0).
A - Operating mode	A⊙ --	Mode / Sim1	Operating mode (A⊙ --); Error memory slot 1 (-- ---); Error memory slot 2 (2 000); Error memory slot 3 (3 000); Error memory slot 3 (3 000); Error memory slot 5 (5 000)	Possible displays in case of error: see chapter 6 of these operating instructions

*factory settings

Table 4.11b Addition to function 8 (configuration of output 2) and function 0

	Loop 2	Output 2	Bemerkung
1-loop device, 2 relays	–	1/0/A*	1 = Output 2 active; 0 = Output 2 off; A = Output as alarm output
2-loop device, 2 relays	active	–	Parameter 8 is not possible and is not displayed
	deactivated	1/0*/A	1 = Output 2 active; 0 = Output 2 off; A = Output as alarm output

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.	👆●Mode Sim1 2 seconds	+	👆●Data Sim2 2 seconds	5◌ L0					
Simulation mode:									
Activation of the loop		5◌ L0	👆●Data Sim2	5◌ L1	👆●Mode Sim1	5 ◌ L 0	👆●Data Sim2	5 ◌ L 1	L0 -No loop activation (time functions are active) L1 -Loop activation (time functions are active) ① - Loop 1 ② - Loop 2
Activation of the output relay	👆●Mode Sim1	5◌ o0	👆●Data Sim2	5◌ o1	👆●Mode Sim1	5 ◌ o 0	👆●Data Sim2	5 ◌ o 1	o0 - Activation of output o1 - Activation of output ① - Loop 1 ② - Loop 2
Alarm output activation	👆●Mode Sim1	5 A 0	👆●Data Sim2	5 A 1					A0 -Switch off alarm relay A1 -Switch on alarm relay
Inductance of loop 1	👆●Mode Sim1	u◌ 225							Measurement of the inductance, value in µH
Inductance of loop 2	👆●Mode Sim1	u ◌ 221							Measurement of the inductance, value in µH
Exiting simulation mode	👆●Mode Sim1 2 seconds	A◌◌ 11							Return to function mode

6 Troubleshooting

E 001   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	E001	E002	E011	E012	E101	E102	E201/E202	E301	E302	E311	E312
Error	Interruption Loop 1	Interruption Loop 2	Short circuit Loop 1	Short circuit Loop 2	Under-voltage	Over-voltage	Saving error	Loop 1 too large	Loop 2 too large	Loop 1 too small	Loop 2 too small

I 001   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

👆●Mode Sim1 2 Sekunden	**Reset 1 (recalibration)** The loop(s) is/are recalibrated.	👆●Mode Sim1 + ●Data Sim2 8 Sekunden	**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, Typ: ProLoop2 11-pin
Model: ProLoop2 1.S.xxxxxx, ProLoop2 2.S.xxxxxx, ProLoop2 1.S.78.xxxxxx, ProLoop2 2.S.78.xxxxxx, 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** Wiesengasse 20 CH-8222 Beringen Switzerland

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SQS Certified Management System ISO 9001