Cloud Unit W5

Manual

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COMLINK

Content

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Introduction

The Cloud Unit W5 is developed for reliable remote control and monitoring of facilities which for various reasons are difficult to reach in any other way. The device is quickly installed and easy to use.

Areas of Use:

- **Door or gate opening**
  With timer-controlled authorisation control and logging
  Settings are configured via the Comlink Cloud
- **Operational monitoring**
  With alerts via SMS, E-mail, IP packet to Comlink Cloud or push notification to app.
- **Remote control via relay outputs**
  Activated via app, SMS, telephone call or the Comlink Cloud
- **Pulse counting**
  Monitor cycles at the connected facility
  Reading via SMS or the Comlink Cloud

The Cloud Unit W5 is configured remotely by using the Comlink Cloud

Battery-driven

The device can be fitted with an internal battery backup (W5-B) that offers full functionality during a battery-operation time of approximately 2 hours.
The battery backup also offers a means of sending a power outage alert and a notification once the power supply is restored.

Getting Started

1. **Connect the sensor and power supply**
   All sensors with normally-open and normally-closed signals can be connected. DC voltage of up to 30V can also be used to activate the alert inputs; please note that the SMS Transceiver must have a common earth with the connected equipment if this alternative is used. The connection is described in the connection block description

2. **Apply voltage to the device and check to see that it logs on**
   Once voltage is applied to the device, the green LED first begins to blink slowly as the unit starts up. If the device is not programmed, it then transitions to its off state. The red LED is permanently lit with a short interruption every 3 seconds when the device is logged in. Read more about it in the section on LED indicators

3. **Configure the device**
   Login to Comlink Cloud and program the device. Once the programming is finished, the green LED will be lit or double-blink depending on the settings you choose.

4. **Function check**
   Check to see that everything is working as expected.

Installation

SIM Card

Comlink roaming SIM

The device is delivered with a roaming SIM card installed. Roaming allows the device to log onto several operators' networks. This means in practice that the operator offering the best signal strength at the selected installation location is chosen automatically. If problems arise in communicating with one operator, the device automatically switches to an alternative network. The result is more reliable communication and increased security. Read more about activating the SIM card in the section on Start-up

Spring-loaded SIM card holder

In order to remove the SIM card, carefully press it inward a few millimetres using a fingernail, the tip of a screwdriver or something similar. Let go and then the SIM card protrudes outward so that you can pull it out. You install the SIM card by inserting it into the holder as shown in Figure 1, carefully push it in a few millimetres further and then release it and the SIM card is locked in place. After installation, the card should rest in line with the end plate.

Shutting off the battery backup

If the device is equipped with a battery backup, it will not shut off when the power supply is cut. Press the SIM card slightly inward and then release it. It will then be ejected from the SIM card holder. The device then senses this and then shuts down in order to conserve battery power. You can then push the SIM card into its place again. It starts up once the power supply is restored.

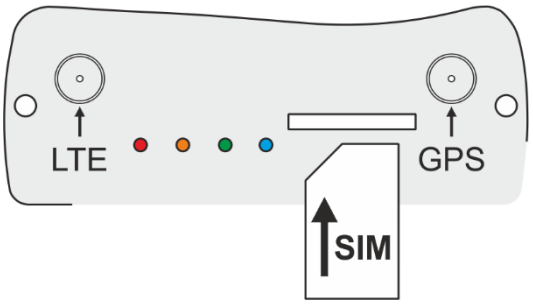

Figure 1 – Installing the SIM card

Connections

Pluggable screw terminal block

The green screw terminal block is pluggable and can be removed by pulling it straight out. Take a screwdriver and carefully pry it out if it is stuck. Max cable area is 1.5 mm^2. Make sure that no loose strands are sticking out of the side of the hole on the connection terminal.

Connecting the antenna

Connect the antenna to the antenna contact as shown in Figure 4. An antenna extension cable with an SMA connector may be used as needed. We recommend that you keep the antenna cable as short as possible and use “Ultra Low Loss” cable. Check to make sure that the antenna is installed correctly in order to get the best signal strength. Don’t forget to check the signal strength, either via the Comlink Cloud or by sending a ‘??’ as an SMS message (read more) to the device. Move the antenna as needed

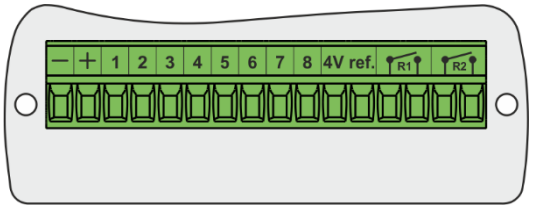

Figure 2 – Screw terminal block

Connection	Description	Rating
-	Minus/null	(Marked with a striped white line on the power
+	Input voltage	9-28 V AC or DC
1	Input 1 [digital] with pulse counter function > 100 ms	<3V DC = low ”0”, 3-28V DC = high ”1”
2	Input 2 [digital]	<3V DC = low ”0”, 3-28V DC = high ”1”
3	Input 3 [digital]	<3V DC = low ”0”, 3-28V DC = high ”1”
4	Input 4 [digital]	<3V DC = low ”0”, 3-28V DC = high ”1”
5	Input 5 [digital]	<3V DC = low ”0”, 3-28V DC = high ”1”
6	Input 6 [digital]	<3V DC = low ”0”, 3-28V DC = high ”1”
7	Input 7 [digital]	<3V DC = low ”0”, 3-28V DC = high ”1”
8	Input 8 [digital]	<3V DC = low ”0”, 3-28V DC = high ”1”
4V ref	4V reference voltage out for normally-open or normally-	Max 50 mA
4V ref	4V reference voltage out for normally-open or normally-	Max 50 mA
R1	Relay output 1, normally-open function	Max 30V, 1A
R1	Relay output 1, normally-open function	Max 30V, 1A
R2	Relay output 2, normally-open function	Max 30V, 1A
R2	Relay output 2, normally-open function	Max 30V, 1A

Figure 3 – Terminal block description

Installation

The device is installed with the integrated attachment lugs. These can also be removed by bending them back and forth a few times with tongs. The device has a robust aluminium casing; however, it should not be installed anywhere where it can be exposed to moisture or excessive humidity. The green terminal block’s earth connection is connected to the aluminium casing, which should be taken into account if the device, for example, is installed in a control panel where the protective earth is isolated from any other earth.

LED Indicators

The LEDs indicate the functions independently of each other, not in combination. Read one LED at a time.

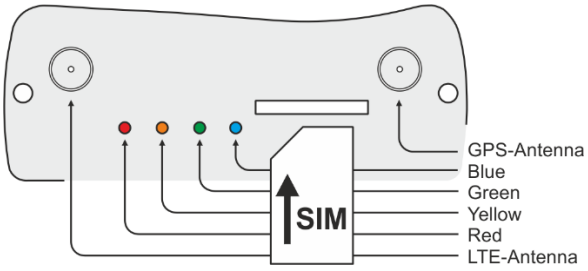

Figure 4 – LED indicators

Red The red LED shows communications status	
Turned off	Turned off
0.2 s lit, 2 s off	Searching net, not logged in
2 s lit, 0.2 s off	Logged in on the mobile network
Flashing quickly	Data transfer ongoing

Yellow LED The yellow LED shows events or error status	
Turned off	Normal operation
Lit	Sending of data or SMS in progress
1 blink, 3 s pause	Internal communication error CPU-GSM
2 blinks, 3 s pause	SIM card missing
3 blinks, 3 s pause	PIN code active
4 blinks, 3 s pause	Communication error with SIM card

Green LED The green LED indicates operation mode	
Turned off	Switched off or not configured
Blinking slowly	Device starting up
Blinking quickly	Connected to the Cloud
Lit	Normal operation
2 blinks, 3 s pause	Normal operation. Access control activated
Lit with 1 pause	Software update in progress

Blue LED Blue LED shows battery status (accessory)	
Turned off	Normal operation
Lit	Battery charging in progress
Blinking quickly	Battery fault, replacement required

Start-up

Activation of SIM card

The SIM card is operational upon delivery so that the device can be programmed and the function tested. The SIM card is then activated by logging in to https://cloud.comlink.se

Remove configuration via the Comlink Cloud

All settings in the Cloud Unit W5 are made via https://cloud.comlink.se. A device is connected to a specific user account and only that account can gain access to the device and change the settings. The first time you register a device, you also need to create an account, there it is easy to add and administer more devices. You can gain access to everything from one location.

Operation

Basic Functions

Alert transmission

Alarms can be sent as texts (up to 8 texts per input), email and to the Comlink AppReady app.

Filter time at alert inputs

A filter time can be set per input; alerts are first sent when the inputs have been in their new mode constantly until the filter time has run out. If the device is configured to send both alerts and resets, the same filter time applies to both modes.

SMS commands

When the access control is activated, only users with administrator authorisation can send commands via SMS to the device.

Notification	Reply	Explanation
?	IO STATE: Motor=OK Port=OK Loop=OK Photocell=OK Emergency stop=OK Open inlet=Not affected Control box=Closed Open signal=OK Power supply=OK Open pulse GSM=Off -=-	The reply shows the status of the inputs and outputs The content is based on that which is stated in the https://cloud.comlink.se. Filtered values are shown, change is first made when the filter time for the input in question has run out.
??	STATUS In1=1 In2=0 In3=0 In4=1 In5=1 In6=0 In7=1 In8=0 R1=OFF R2=OFF Ext power=ON Signal=15 (31) SW=X.XX	The reply shows the input and output logical levels, as well as the status of the power supply. The signal strength has a value between 0 and 31, where 31 is the best signal strength. For reliable functioning, the signal strength should be above 14. SW shows which software version the device features. Filtered values are shown, change is first made when the filter time for the input in question has run out.
R1=ON R2=ON	None	The notification activates relay 1 (R1) or relay 2 (R2), which creates a connection at the relay output.

R1=OFF R2=OFF	None	The notification activates relay 1 (R1) or relay 2 (R2), which breaks the connection at the relay output.
R1=60 R2=60	None	The notification activates relay 1 (R1) or relay 2 (R2) in 60 seconds. Time can be stated between 1 and 65,000 seconds

Call-activated relay (open function)

A relay output can be configured to close in connection with an incoming call being detected.

Access control (authorisation control)

Access control is switched off upon delivery and everyone is then authorised to control it.
When the function is activated, authorisation can be given a telephone number at two levels.

User authorisation: The user can call the device in order to activate a relay output during a predetermined time.
Administrator authorisation: The administrator can both call and send commands to the device via SMS.

Authorisation can be limited to certain days or times through settings in the Comlink Cloud.

Optional Functions

Pulse counter function*

Input 1 can be set to count pulses. The input has two counters, one that counts the total and one that counts intervals. The reading can be done via the https://cloud.comlink.se or SMS. The interval counter can also be reset, for example, when service is being performed.

Heartbeat

The device checks its connection with the Comlink Cloud every day and takes corrective measures if the contact has been broken.
The Comlink Cloud monitors whether it has heard from the device and generates an alert if it has not.

Battery backup

The Cloud Unit W5 can be supplemented with a battery backup with a battery time of approximately 2 hours. With the battery backup, the device has full function during battery operation and alerts can even be sent when the power supply is cut off and when it is restored. It is recommended that the backup battery be replaced once every 5 years.

Technical Specifications

Input voltage:	9-28 V AC or DC
Power consumption, nominal:	30mA @ 24V
Power consumption, max (burst):	500mA @ 24V
SIM card type:	Micro-SIM
Number of inputs:	8 inputs, max 30V DC
Number of outputs	2 outputs with normally-open relay functions, max 30V, 1A
Outputs for reference voltage:	2 outputs, 4V max 50 mA
Ambient temperature during operation:	-5 - +45 (W5-B)
Casing:	Robust aluminium casing, not IP classified
Dimensions:	93 x 69 x 26 mm
Weight:	110 g not including battery backup
Maximum cable area in terminal block:	1.5 mm^2