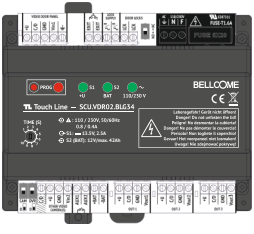
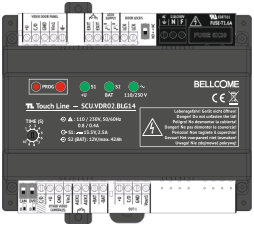
4 Wires

BELLCOME Touch Line



SCU.VDR02.BLG34



SCU.VDR02.BLG14

CENTRAL SUPPLY AND COMMAND UNIT for TL 4-WIRE video doorphone systems

User manual

EN

0 Contents

1 Safety instructions
2 Description of the central unit
3 Functions of the central unit. Troubleshooting and service for the TL video doorphone system.
4 Recommended cables. Installation.
5 Setting the programming mode for the Touch Line video door phone system
6 Warranty

1 4-WIRE SCU safety instructions

1. ATTENTION! The installation, maintenance and connection of the central unit (**SCU**) to the 110 V/ 230 V – 50 Hz/ 60 Hz power network is done only by **AUTHORIZED PERSONNEL!**

2. ATTENTION! It is mandatory to use a 3 x 0,75 cable and 2 automatic fuses (6A) to power the central unit (SCU) from the 110V/230V - 50Hz/60Hz power network.

3. IMPORTANT! The S1 fuses remain disconnected when the L, N, ⏚ connections are made to the SCU, and when the L1, N1 connections are made to the S1 fuses. After the connections are made, the protection lids of the connections are mounted.

4. ATTENTION! The S1 safety fuses must be disconnected during the mounting, connection and service to the central unit (SCU).

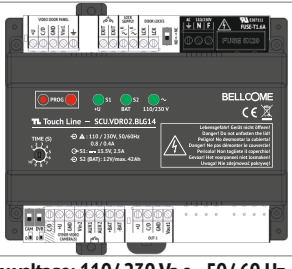
5. ATTENTION! DO NOT DISMANTLE THE FRONT LID OF THE CENTRAL UNIT (SCU)! RISK OF ELECTRIC SHOCK! Only the protection cases of the connections can be dismantled during mounting or service.

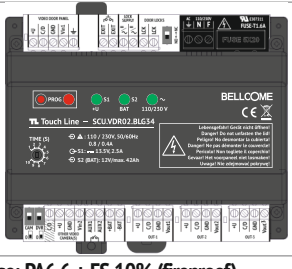
6. DO NOT TOUCH the metallic parts of the wires or the connection terminals of the central unit (SCU) or of the fuses. First, you have to disconnect the 6A fuses (**POWER OFF**) from the power network and then you can work with the central unit (SCU).

7. ATTENTION! Do not supply components of the installation separately (outdoor panel, terminals etc.) at voltage higher than 14 Vd.c. or directly from the network (230 V/ 50 Hz or 110 V/ 60 Hz). **RISK OF ELECTRIC SHOCK** and damage of the installation.
8. PAY ATTENTION at the polarity of the BAT battery connections (max. 42 Ah/ 12 Vd.c.) when connecting it to the central unit (**SCU**).

2 The electrical and mechanical features of the 4-WIRE SCU central unit

SCU.VDR02.BLG14	Central supply unit	SCU.VDR02.BLG34





- **Power supply voltage: 110/ 230 Va.c. - 50/ 60 Hz**
- **Output voltage: 13.5 Vd.c. +/- 5% max. 2.5Ad.c.**
- **Overload protection for the input and output current**
- **Network overvoltage protection**
- **EMI filter (electromagnetic compatibility)**
- **Case: PA6.6 + FS 10% (fireproof)**
- **UL certified printed circuit board E307311**
- **Dimensions: 130 x 141 x 73 mm**
- **Weight: 0.4 Kg**
- **Operating temperature range: 0° - 40° C**

2.1 Description of the 4-WIRE SCU central unit

- **For the video door phone systems with 1 Family**, the **central supply unit with 1 OUTPUT** will be used, model **SCU.VDR02.BLG14**, which only has output **OUT1** for **Family 1**.
- **For the video door phone systems with max. 3 Families**, the **central supply unit with 3 OUTPUTS** will be used, model **SCU.VDR02.BLG34** (OUT1-Family 1, OUT2-Family 2, OUT3-Family 3).
- **For video door phone systems with more than 3 Families**, for connecting the terminals of the families to the outdoor panel, **SCU.VDR02.BLG14** will be used and one or two video distributors, type **VCB.4DN02.BLG04**.

The distribution of the connections for the SCU.VDR02.BLG14 CENTRAL SUPPLY and COMMAND UNIT

VIDEO DOOR PANEL, Connection of the cable from the outdoor panel

EXIT Connection of exit button

LOCK SUPPLY =/~ Separate lock supply, max 24 Vd.c/24Va.c.

LCK Lock connection Max. 3A/24Vd.c. Max. 5A/24Va.c.

NO-Normal open – LCK relay, normal open
NC-Normal Closed – LCK relay, normal closed

L,N, ⏚ Connection to the 110/ 230 Va.c. - 50/ 60 Hz network

LED PROG red, the panels and terminals are in programming mode

FUSE, Electrical network fuse 1.6 Aa.c.

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PROG Programming mode setting/resetting button

LED ~ Green, presence of 110/ 230 Va.c. 50/ 60 Hz voltage

TIME Lock opening time adjustment (max. 10s)

LED BAT Green, max. 42Ah – 12Vd.c. rechargeable battery, connected to the SCU

CAM is switched to position 1 for connecting the OTHER VIDEO CAMERA to the SCU and visualization on the terminal

LED +U green, +13.5 Vd.c. +/-5% voltage presence

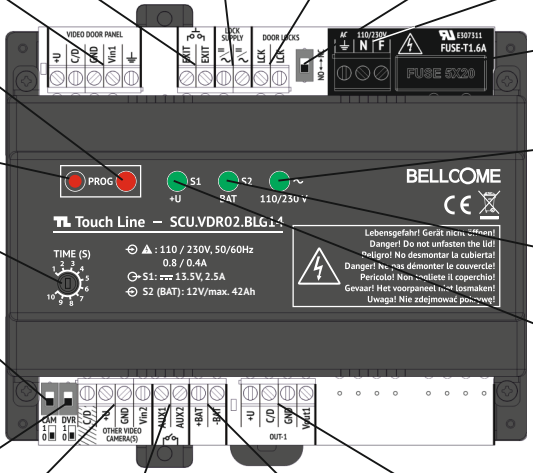
DVR is switched to position 1 for permanent image recording from the OTHER VIDEO CAMERA, on a DVR

OTHER VIDEO CAMERA Analog, PAL, CMOS/ CCD, 1 Vp.p. with adapting video transformer

AUX1,AUX2 Connection of additional installations: auto gate, garage, outdoor lights etc. (relay contact)

+BAT, -BAT Connection of 12Vd.c., max. 42Ah rechargeable battery

OUT1 Connection of the cable to the Fam. 1 terminal or VCB



The distribution of the connections for the SCU.VDR02.BLG34 CENTRAL SUPPLY and COMMAND UNIT

VIDEO DOOR PANEL, Connection of the cable from the outdoor panel

EXIT Connection of exit button

LOCK SUPPLY =/∼ Separate lock supply, max 24 Vd.c/24Va.c.

LCK Lock connection Max. 3A/24Vd.c. Max. 5A/24Va.c.

NO-Normal open – LCK relay, normal open
NC-Normal Closed – LCK relay, normal closed

L,N, ⏚ Connection to the 110/ 230 Va.c. - 50/ 60 Hz network

LED PROG red, the panels and terminals are in programming mode

FUSE, Electrical network fuse 1.6 Aa.c.

PROG Programming mode setting/resetting button

LED ∼ Green, presence of 110/ 230 Va.c. 50/ 60 Hz voltage

TIME Lock opening time adjustment (max. 10s)

LED BAT Green, max. 42Ah – 12Vd.c. rechargeable battery, connected to the SCU

CAM is switched to position 1 for connecting the OTHER VIDEO CAMERA to the SCU and visualization on the terminal

LED +U Green, +13.5 Vd.c. +/-5% voltage presence

DVR is switched to position 1 for permanent image recording from the OTHER VIDEO CAMERA, on a DVR

OUT3 Connection of the cable to the Fam. 3 terminal

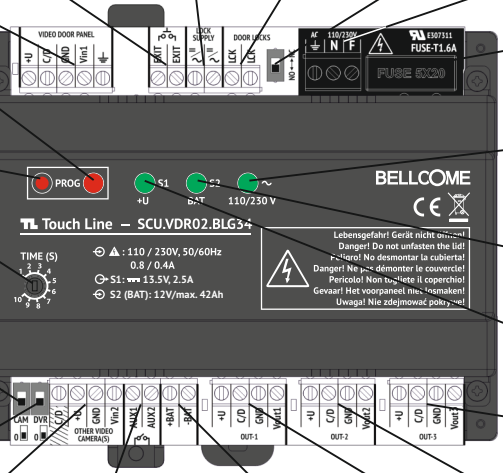
OTHER VIDEO CAMERA Analog, PAL, CMOS/ CCD, 1 Vp.p. with adapting video transformer

AUX1,AUX2 Connection of additional installations: auto gate, garage, outdoor lights etc. (relay contact)

+BAT, -BAT Connection of 12Vd.c., max. 42Ah rechargeable battery

OUT1 Connection of the cable to the Fam. 1 terminal or VCB

OUT2 Connection of the cable to the Fam. 2 terminal



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4

3 Functions of the 4-WIRE SCU central unit

A. JOINT FUNCTIONS for SCU.VDR02.BLG14 and SCU.VDR02.BLG34:

1. Power supply – it is connected to the network **L, N, ⏚ 110/ 230 Va.c. - 0,8/ 0,4 Aa.c. - 50/ 60 Hz**

2. Operating voltage for the functioning of the entire video door phone system (+U -GND): **13.5 Vd.c./ max. 2.5 Ad.c.**

3. The outdoor panel is connected to the central unit (SCU): **+U, C/D, GND,Vin1,⏚,** (VIDEO DOOR PANEL) and will be automatically disconnected at a voltage higher than 2Ad.c.

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4. The BUS with audio-video TL terminals is connected to: **+U, C/D, GND, Vout1,** (OUT1, OUT2, OUT3) through screw connectors. The BUS is protected for voltage higher than 2 Ad.c.

5. The Other video camera - Vcam is connected to: **+U, GND, Vin2, GNV** (OTHER VIDEO CAMERA). **The CAM switch is on position 1!**

6. The Digital Video Recorder - DVR for **Vcam** is connected to: **Vin2, GNV** (OTHER VIDEO CAMERA). **The DVR switch is on position 1!**

7. Lock supply =/~ ensures the connection of a source of direct or alternating current for the separate command and supply with power, for the functioning of the direct current lock, or, if necessary, of the alternating current lock.

Note. In case of a small video door phone installation, with maximum **5 families** and with a **direct current electromagnetic lock** (maximum 0.5Ad.c.), the supply with power at the connections dedicated to the functioning of the lock can be done locally from the SCU, from the +13V.d.c. – GND connections of the VIDEO DOOR PANEL connector.

8. NO-NC lock functioning mode. A) Switch to **NO**: normal open relay; b) Switch to **NC**: normal closed relay.

9. Direct current lock (max. 24Vd.c. / 3Ad.c) is connected to: **LCK, LCK** (DOOR LOCKS)

10. Alternating current lock (max.24Va.c. / 5Aa.c) is connected to the same connections: **LCK, LCK** (DOOR LOCKS)

11. Direct current electromagnetic lock (max. 24Vd.c. / 3Ad.c). It is connected to the **LCK, LCK** connections (DOOR LOCKS).

12. The lock opening interval is adjusted from the **TIME** trimmer, within a time interval of 1 to 10 sec.

13. The return **EXIT button** is connected to the **EXIT** connections, for opening the lock at the exit from the building lobby.

14. The additional installations (auto gate, garage door, outdoor lighting etc.) are connected to the **AUX1, AUX2** connections. The AUX relay functions in **NO** mode and transmits an impulse of 5 seconds (maximum 0.5 Ad.c.) at the **AUX1**, **AUX2** connections.

15. The rechargeable battery (12 Vd.c./max. **42 Ah)** is connected to the **+BAT, - BAT** connections, for the functioning of the installation in case there is no power from the network.

B. TROUBLESHOOTING and SERVICE for the Touch Line – 4-WIRE video door phone system

1. Normal functioning mode, without BAT: the ∿ and **+U** LEDs are green. The **PROG** and **BAT** LEDs are turned off.

2. Normal functioning mode, with BAT connected: the ∿, **BAT** and **+U** LEDs are green.

3. ⚠ The system functions only on battery (the installation functions correctly until the full discharge of the battery): the **BAT** LED is green, the ∿ and **+U** LEDs are turned off. Check the fuses on the SCU (FUSE T-1, 6A) and 2x6A from the network ∿.

4. The system functions with a broken battery. The ∿, **+U** LEDs are green, the **BAT** LED is turned off. Change the battery!

5. The outdoor panel does not function (the red LED from the outdoor panel does not blink, the call keys are not backlighted): The ∿, **BAT** and **+U** LEDs are green. At the SCU, the VIDEO DOOR PANEL LED is red. Check the continuity and the accuracy of the +U and GND connections from the SCU to the panel.

6. A terminal does not function (the keys are not backlighted when touched, there is no image and sound): the ∿, **BAT** and **+U** LEDs are green. One of the **OUT1**, **OUT2** or **OUT3** LEDs is red. Check the continuity and accuracy of the **+U** or **GND** connections from the **SCU** to the terminal.

7. The lock does not function (LCK, LCK): check the accuracy of the connections from the **SCU** to the lock.

8. The display of the terminal is blue (during call, the terminal is blue, there is sound): check the continuity and accuracy of the **Vin**, **Vout** and **GND** connections from the outdoor panel to the video terminal.

9. The terminals are not called, the **PROG** LED is red: check the continuity and the accuracy of the **C/D**, **+U** and **GND** connections from the outdoor panel to the video terminal.

10. The terminal for Family 2, Family 3 or with higher addresses cannot be called (The Family 1 terminal is always called): reprogram the terminal with the correct address (the number of the apartment) according to the procedure in the user manual of the terminal.

4 Recommended cables. Installation.

1. The central units will be installed in electrical cabinets specially built inside the building. They can be mounted on 46277-3, EN50022, IEC60715 DIN rail or directly on the inside wall of the cabinet.

2. ATTENTION! For mounting, operation and service/maintenance, **it is mandatory to comply with the SAFETY INSTRUCTIONS** presented in **Ch. 1** of this user manual.

3. For the connection of the SCU central unit (L, N, ⏚) to the 110 V/ 230 V – 50 Hz /60 Hz power network, it is mandatory to use a H05VV-F4G 0.75 cable and two 6A automatic fuses (S1) (chapter 4.1).

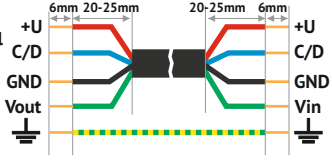
4. ! It is not allowed for the cable from the power network and for the door phone cable that comes from the outdoor panel to be installed together. There must be a **minimum distance of 20 cm** between the two cables.

Recommended installation cables, based on the maximum distance between the outdoor panel and the last video terminal:

Option 1) 4 wires x 0.5 mm² (type H03VV-F4G 0.5) for **maximum 75 lm**

Option 2) 4 wires x 0.75 mm² (type H05VV-F4G 0.75) for **maximum 150 lm**

1. Connections to the Outdoor panel
2. Connections from the Central Unit to the Terminals



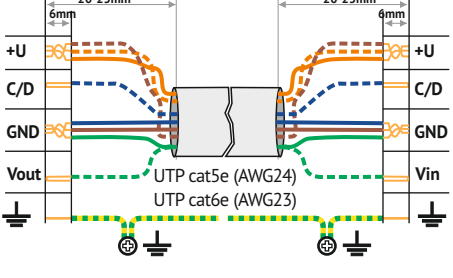
1. Connections to the Central Unit
2. Connections to the Terminals

Example: +U = red, **C/D** = blue, **GND** = black, **Vin/Vout** = green.

***Important:** Maintain the same colors for the same connections. Out of electrical security reasons, we recommend installing a grounding cable between the panel and the SCU.

Option 3) UTP cat5e (AWG24) maximum 250 lm. The wires will be arranged as per the below model:

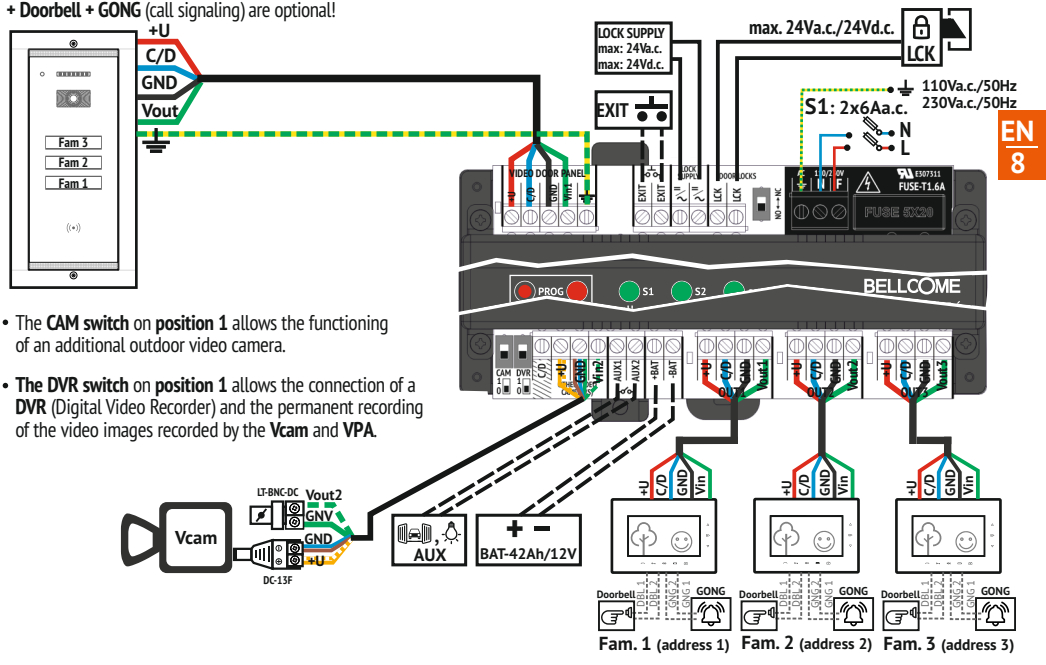
Connections to the Outdoor panel



Connections to the Central Unit

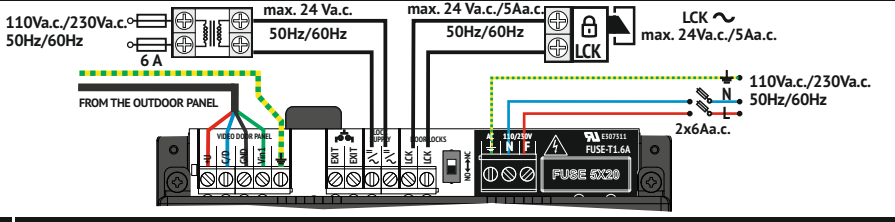
4.1 Connection of the panel and the terminals to the 4-WIRE SCU central unit

1. The below diagram presents the configuration for a video door phone system with 3 Families; **central unit with 3 OUTPUTS – SCU.VDR02.BLG34.**
2. The central unit with 1 OUTPUT – SCU.VDR02.BLG14 is connected identically, but without the connections for **OUT2** and **OUT3**.
3. The EXIT (exit button) **+ Vcam** (external video camera) **+ AUX** (additional devices) **+ BAT** (rechargeable battery) **+ Doorbell + GONG** (call signaling) are optional!

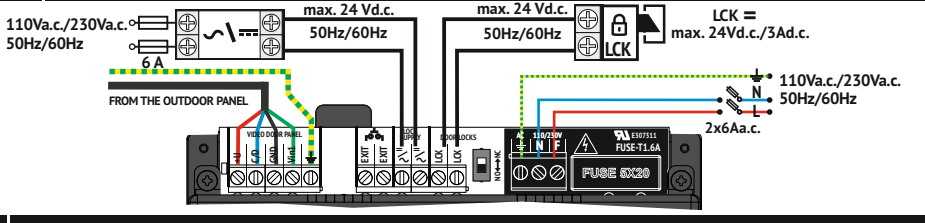


- The **CAM switch** on **position 1** allows the functioning of an additional outdoor video camera.
- **The DVR switch** on **position 1** allows the connection of a **DVR** (Digital Video Recorder) and the permanent recording of the video images recorded by the **Vcam** and **VPA**.

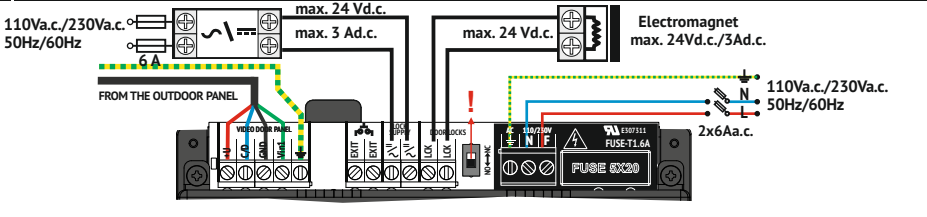
4.2 Connection of the alternating current lock at the 4-WIRE SCU central unit



4.3 Connection of the direct current lock at the 4-WIRE SCU central unit

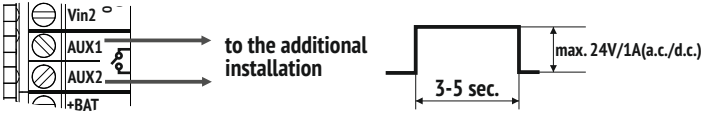


4.4 Connection of the electromagnetic LS lock to the 4-WIRE SCU central unit



4.5 Connection of the AUX additional devices at the 4-WIRE SCU central unit

Example: Additional installations: auto gate opening, garage door, outdoor lighting etc.. At the command of the button on any **Touch Line** terminal, the relay (**AUX1, AUX2**) at the SCU will close for 3-5 seconds.



5 Setting the programming mode for the Touch Line video door phone system

IMPORTANT: The programming mode is set from the SCU, by long pressing (2-3 sec.) the **PROG.** button

PROG. button

The PROG red LED turns on and remains on during the entire programming phase.

You can program:

1) The address of the terminal (apartment number) from 0001 to 9999. Programming can be done manually, according to the procedure from the user manual for the **Touch Line** audio-video terminals, or using a special programmer, supplied by the manufacturer. All terminals are programmed from the factory with **Address 0001**.

2) The address of outdoor panels 2, 3 or 4, when a building has multiple entrances. The outdoor panels are programmed from the factory with **Address 1** (programming can be done manually, according to the procedure in the user manual).

3**) The storage/deletion/addition of the RFID access TAGs/CARDs** (according to the procedure in the user manual).

Exiting programming mode is done by short pressing the **PROG**. button. The **PROG** red LED turns off.

6 Warranty

1. Warranty is granted for hidden defects and/or the equipment not functioning according to the present user manual, in compliance with the current legislation and based on the purchase documents.
2. No warranty is granted for damages due to mounting performed by unauthorized personnel and by inappropriate use.

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BELLCOME/ELECTRA products are registered as Industrial Models at EUIPO - Alicante, Spain

The products are
CE certified.

Certificate by
R 709 ICPE

The products contain UL-compliant
printed circuit boards.

Certificate no. E307311

The products are manufactured under
Quality and Environment Management System

ISO 9001:2015
ISO 14001:2015

Certificates no. 73 100 4856, 73 104 4856
by TÜV HESSEN

Designed and produced by ELECTRA • Made in EU

06.2019 **USM.SCU.VDR02.BLY34**