BWC01-CDN-KIT
BWC01-NO RFA-CDN-KIT
BWC01-PTL-CDN-KIT

Document: BWC01-KIT-D002

Installation Manual

Touchless Actuator Kits For Universal Washroom/Restroom

Table of Contents

What is included in the BWC01 (CDN) kits... 4

The kit, part number BWC01-KIT-CDN, contains the following: 4

The kit, part number BWC01-PTL-KIT-CDN, contains the following: 4

The kit, part number BWC01-No RFA-KIT-CDN, contains the following: 4

What is NOT included in the BWC01 kits... 5

Pre-Installation information 6

Mounting locations and wiring guidelines 6

Dimensions of BWC01-01 main control 6

Electrical box sizes and mounting locations 6

***Optional 6*

Figure 1 Electrical box locations (Guidelines) 7

Figure 2 Electrical box locations (Guidelines) 8

Wiring 8

BWC01- 01 Control Module 9

Features 9

Dimensions 9

Electrical characteristics 9

BWC01 REV01 Terminal blocks, DIP switches and potentiometer 10

1- Inputs and Outputs (TB1) 11
TB1 Descriptions 11

2- Operator Activation -Output (TB2) 11
Maximum drive capability 11

3- BUS Function (TB3) 11

4- Power Supply Outputs (TB4) 12

5- Visual Indicators (LEDs) 12

6- DIP Switches Description 12

7- Potentiometer 12
Range of Timer 1 (RV1) 12

BWC01-INT-SW-01 Interior Button 13

Features 13

Installation 13

Dimensions 13

Electrical characteristics 13

BWC01-EXT-SW-01 Exterior Button 14

Features *14*
Installation *14*
Dimensions *14*
Electrical characteristics *14*

Actuator mounting plate (included) **15**

BWC01-RFA-SW-CDN-01 RFA (Request for Assistance) Button **16**

Features *16*
Installation *16*
Dimensions *16*
Electrical characteristics *16*

BWC01-RFA-AL-CDN-01 RFA (Request for assistance) Alarm **17**

Features *17*
Installation *17*
Dimensions *17*
Electrical characteristics *17*

DC-01 Door Closed Switch **18**

Installation *18*
Electrical characteristics *18*

BWC01-PTL-SW-CDN-01 PTL (Push to Lock) Button **19**

Features *19*
Installation *19*
Dimensions *19*
Electrical characteristics *19*

BWC01 Wiring diagram for normally unlock washroom / restroom **20**

BWC01 Wiring diagram for normally locked washroom / restroom **21**

What is included in the BWC01 (CDN) kits...

The kit, part number BWC01-KIT-CDN, contains the following:

Part Number	Description
BWC01-01	BWC01 control (With 100W power supply)
BWC01-EXT-SW-01	Exterior actuator with mounting plate
BWC01-EXT-SW-SIGN-CDN-01	Exterior actuator sign
BWC01-INT-SW-01	Interior actuator with mounting plate
BWC01-INT-SW-SIGN-CDN-01	Interior actuator sign
BWC01-RFA-SW-CDN-01	RFA button (Request for assistance)
BWC01-RFA-SIGN-CDN-01	RFA “Emergency” sign
BWC01-RFA-AL-CDN-01	RFA (Request for assistance) exterior alarm
DC01	Door contact/switch
BWC01-AUTO-LOCK-SIGN-CDN-01	“Automatic lock” door sign

The kit, part number BWC01-PTL-KIT-CDN, contains the following:

Part Number	Description
BWC01-01	BWC01 control (With 100W power supply)
BWC01-EXT-SW-01	Exterior actuator with mounting plate
BWC01-EXT-SW-SIGN-CDN-01	Exterior actuator sign
BWC01-INT-SW-01	Interior actuator with mounting plate
BWC01-INT-SW-SIGN-CDN-01	Interior actuator sign
BWC01-RFA-SW-CDN-01	RFA button (Request for assistance)
BWC01-RFA-SIGN-CDN-01	RFA “Emergency” sign
BWC01-RFA-AL-CDN-01	RFA (Request for assistance) exterior alarm
BWC01-PTL-SW-CDN-01	PTL button with door sign
DC01	Door contact/switch
BWC01-AUTO-LOCK-SIGN-CDN-01	“Automatic lock” door sign

The kit, part number BWC01-No RFA-KIT-CDN, contains the following:

Part Number	Description
BWC01-01	BWC01 control (With 100W power supply)
BWC01-EXT-SW-01	Exterior actuator with mounting plate
BWC01-EXT-SW-SIGN-CDN-01	Exterior actuator sign
BWC01-INT-SW-01	Interior actuator with mounting plate
BWC01-INT-SW-SIGN-CDN-01	Interior actuator sign
DC01	Door contact/switch
BWC01-AUTO-LOCK-SIGN-CDN-01	“Automatic lock” door sign

What is NOT included in the BWC01 kits...

- Strike or maglock (Electric lock)
- Access device (ex: Day-Timer, card reader, keypad...)
- Cables/wires to connect all components.
    - Suggested cable/wire type to use: 20 AWG, 1 pair of stranded (7x30)
      : 20 AWG, hook-up / stranded wire (7x30)

Pre-Installation information

Mounting locations and wiring guidelines

The BWC01-01 main control is small enough to be installed in the door operator enclosure. An additional enclosure may be needed if there isn't enough space to mount the main control in the door operator enclosure.

All other components can be installed directly on the wall surfaces or on electrical boxes.

Dimensions of BWC01-01 main control

4.5 x 3 x 2.15 inches (112 x 76 x 54 mm)

Electrical box sizes and mounting locations

A) A one gang or a two-gang electrical box for the exterior button located on the exterior wall next to the door handle.

B) A one gang electrical box for the RFA alarm located on the exterior wall over the top/middle of the door frame.

C) A one gang or a two-gang electrical box for the interior button located on the interior wall next to the door handle.

D) A one gang electrical box for the RFA button located on the interior wall beside the toilet.

*****Optional***

The BWC01-KIT is equipped with an automatic lock feature and does not require/include a PTL (Push to lock) button. The automatic lock feature can be disabled during the installation and a PTL button can be installed.

Note: The BWC01-PTL-SW-01 is sold separately. A **fifth** electrical box is needed, if a PTL (Push to lock) button is to be installed.

E) A one gang electrical box for the PTL button located on the interior wall between the door handle and the interior button.

See **figures 1 & 2** for electrical box location guidelines.

Figure 1 Electrical box locations (Guidelines)

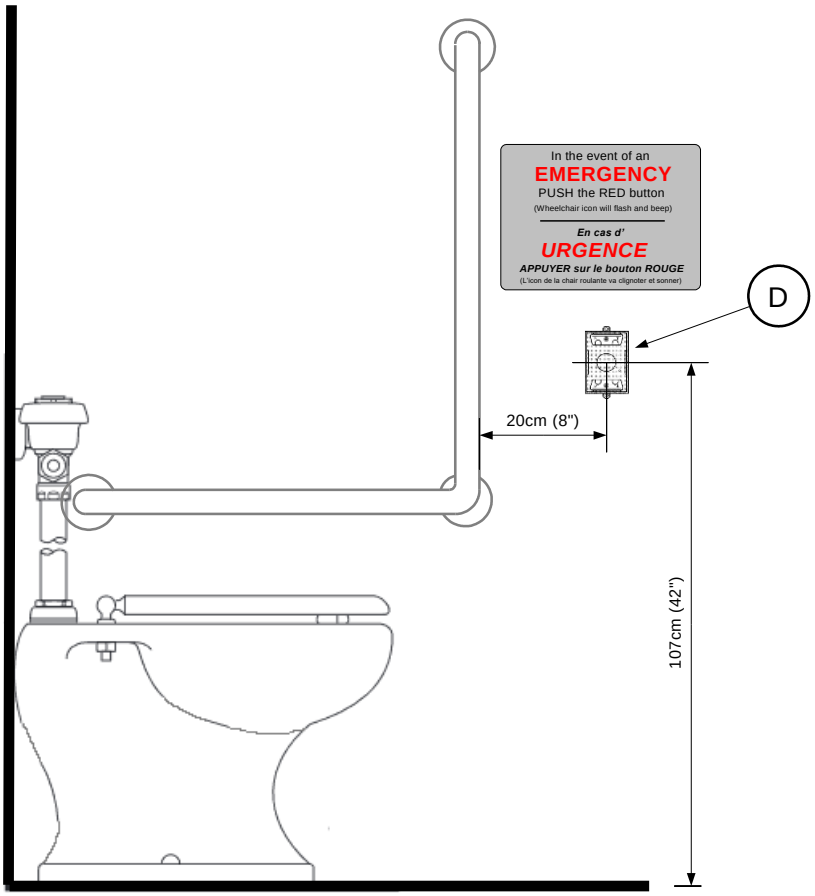


Figure 2 Electrical box locations (Guidelines)

Wiring

Suggested cable to wire all slave devices on the BUS:

Use a two-wire cable, unshielded, AWG 22, Stranded (7/30) or better.

Examples of cable:

General Cable part number E1002S.30.10
Alpha Wire part number 1172C-X (Where X= feet per roll)

BWC01- 01 Control Module

The BordTek BWC01-01 control module serves as the interface connecting the BordTek's touchless actuators (both interior and exterior), the RFA button, RFA alarm, electric lock and the automatic door operator.

Through the BUS functionality, the BWC01-01 control module delivers power and facilitates communication between the control unit, the actuators, the RFA button and the RFA alarm. Only one pair of wires is required to connect the INT/EXT actuators, the RFA button and the RFA alarm, making it an effortless solution when installing an accessible washroom/restroom.

Features

- One activation output (To activate the automatic door operator).
- Electric lock output mode: Normally opened or normally closed.
- Unlock input (For normally locked washroom/restroom)
- DIP switches: Select lock output mode and washroom/restroom type.
- Simplified connections: 2-Wire BUS
- Adjustable timer: Activation delay
- Solid state activation output supports AC and DC signals.
- LED indicators for power input, INT / EXT activation, RFA / PTL / door contact signals
- Large plug-in terminal blocks
- Aluminum mounting plate and self-tapping screws included.
- Fits in automatic door operator enclosures

Dimensions

4.5 x 3 x 2.15 inches (112 x 76 x 54 mm)

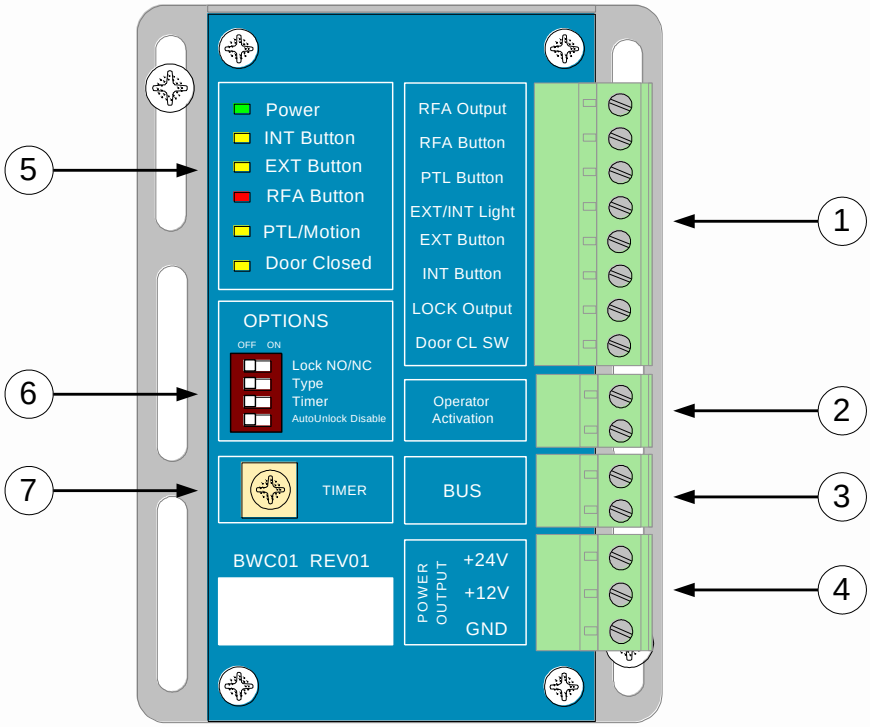
**Refer to the wiring diagram at the end of the document for installation guidelines.

Electrical characteristics

Parameter	MIN	TYP	MAX	Unit
Power Input	85	-	300	VOLT(AC)
Activation Output Drive (Max.)	-	-	500	mA
Unlock Input	5	-	50	VOLT(DC)
Lock Output Drive (Max.)	-	-	5	A
Timer 1 Adjustment (Activation delay)	0	-	5	SEC

BWC01 REV01 Terminal blocks, DIP switches and potentiometer

Note: DO NOT install live. Apply power **ONLY** after all wires have been connected properly. Refer to the wiring diagram(s) as example(s).



Note: All terminal blocks can be unplugged to make the wiring task easier.

1- Inputs and Outputs (TB1)

Although this connector (TB1) has several inputs and outputs, most installations only require a small portion of the TB1 functions when the BUS function is used. When using the BUS, the minimum necessary connections for this terminal block (TB1) are the door close contact input and the electric lock output. Another frequently utilized function is the remote RFA alarm output.

** For more details, refer to the wiring diagrams section at the end of the document.

Note: The BWC01-01 control has all the required inputs and outputs needed to be installed as a retrofit in washrooms/restrooms with mechanical actuators, push buttons and simple RFA alarms.

TB1 Descriptions

PIN#	Function name	Type	Signal
1	Door close switch	Input	Ground
2	Lock output	Output	Ground
3	Interior button	Input	Ground
4	Exterior button	Input	Ground
5	EXT/INT Light	Output	Ground
6	PTL button	Input	Ground
7	RFA button	Input	Ground
8	RFA output	Output	Ground (DRY)
			12/24V (WET)

2- Operator Activation -Output (TB2)

The "Operator Activation" is a solid-state output used to send a dry contact to activate the automatic door operator. This solid-state output supports both AC and DC signals.

Maximum drive capability

0.5 amps

3- BUS Function (TB3)

The B-BUS is a two-wire power/communication BUS, with a designated master and one or multiple slave units. In addition to supplying power to the slave units, the BUS plays a crucial role in synchronizing and facilitating communication between the master and the slave units. Refer to the wiring diagrams for more details.

4- Power Supply Outputs (TB4)

The BWC01-01 control is equipped with a 100W power supply. Two voltages are available, 12VDC and 24VDC. These power supply outputs can be used to power devices like an electric lock, relays, etc...

PIN#	Definition
1	Ground (GND)
2	12VDC
3	24VDC

5- Visual Indicators (LEDs)

The visual indicators serve as a means for the technician to visually discern when a signal has been received by the main control.

The available indicators are for the following signals;

- Power On
- Interior activation
- Exterior activation
- RFA (Request for assistance) button
- PTL (Push to lock) button
- Door close switch

6- DIP Switches Description

The DIP switches are used during the installation to configure the washroom/restroom with the functions needed. Refer to the table below for the DIP switch descriptions.

DIP Switch Descriptions			
DIP SW	**Function**	**OFF**	**ON**
1	Lock output	NO (Normally Opened)	NO (Normally Opened)
2	Washroom/restroom type	Normally unlock	Normally lock
3	(Not currently used)		
4	Automatic unlock	Enabled	Disabled

7- Potentiometer

RV1 potentiometer (adjustment) is the activation delay/time required to power the electric lock prior to sending the activation signal to the automatic door operator. This allows the door to physically unlock before opening the door.

Range of Timer 1 (RV1)

0 to 5 seconds

BWC01-INT-SW-01 Interior Button

The BWC01-INT-SW-01 interior button serves as the user interface for opening the door through the automatic door operator. This touchless activation device allows users to activate the door (when GREEN) by simply approaching a hand approximately one inch from the wheelchair icon.

The interior button can be utilized to automatically lock the door, provided this feature was selected during installation. In cases where the automatic lock feature is disabled, it is necessary to install a Push-to-lock button.

Features

- Touchless activation function
- Act as the interior RFA alarm
- Wheelchair icon illuminated
  GREEN when washroom is available
  RED when washroom is occupied
  Flashing RED when RFA Alarm is activated
- Lock icon illuminated when door is locked
- Selectable beeper on activation
- Simplified connection, two wire BUS
- Selectable automatic lock
  (Default set to “ON”)

Installation

- Fits on a 2X4, 4X4 electrical box or can be installed directly on the wall surface
  Note: To be used with a BWC01 main control
  Refer to the BWC01 User manual for mounting locations and wiring instructions.
- Enclosure with mounting bracket and hardware

Dimensions

5.7 x 5.25 x 1 inches (145 x 133 x 25 mm)

Electrical characteristics

Parameters		MIN	TYP	MAX	Unit
Power consumption		-	1.8	2.4	W
Sound output power		-	85	-	db
Sound rated frequency		2000	2300	2600	KHz
Motion detection distance		-	16.4 (5)	20 (6)	ft (m)
Touchless detection distance		1 (25)	1.5 (37)	2 (50)	In (mm)
Red LEDs	Luminous intensity	-	2415	-	mcd
	Wavelength	-	645	-	nm
Green LEDs	Luminous intensity	-	5985	-	mcd
	Wavelength	-	510	-	nm

BWC01-EXT-SW-01 Exterior Button

The BWC01-EXT-SW-01 exterior button is the user interface for opening the door through the automatic door operator. This touchless activation device allows users to activate the door (when GREEN) by simply approaching a hand approximately one inch from the wheelchair icon.

Approaching a hand when the button is RED, will cause the button to deny entry and reply to the user with an audible two beeps, and displaying a flashing lock icon as feedback.

Features

- Touchless activation function
- Wheelchair icon illuminated
  GREEN when washroom is available
  RED when washroom is occupied
- Lock icon illuminated when door is locked
- Selectable beeper on activation
- Simplified connection, two wire BUS

Installation

- Fits on a 2X4, 4X4 electrical box or can be installed directly on the wall surface
  Note: To be used with a BWC01 main control
  Refer to the BWC01 User manual for mounting locations and wiring instructions
- Enclosure with mounting bracket and hardware

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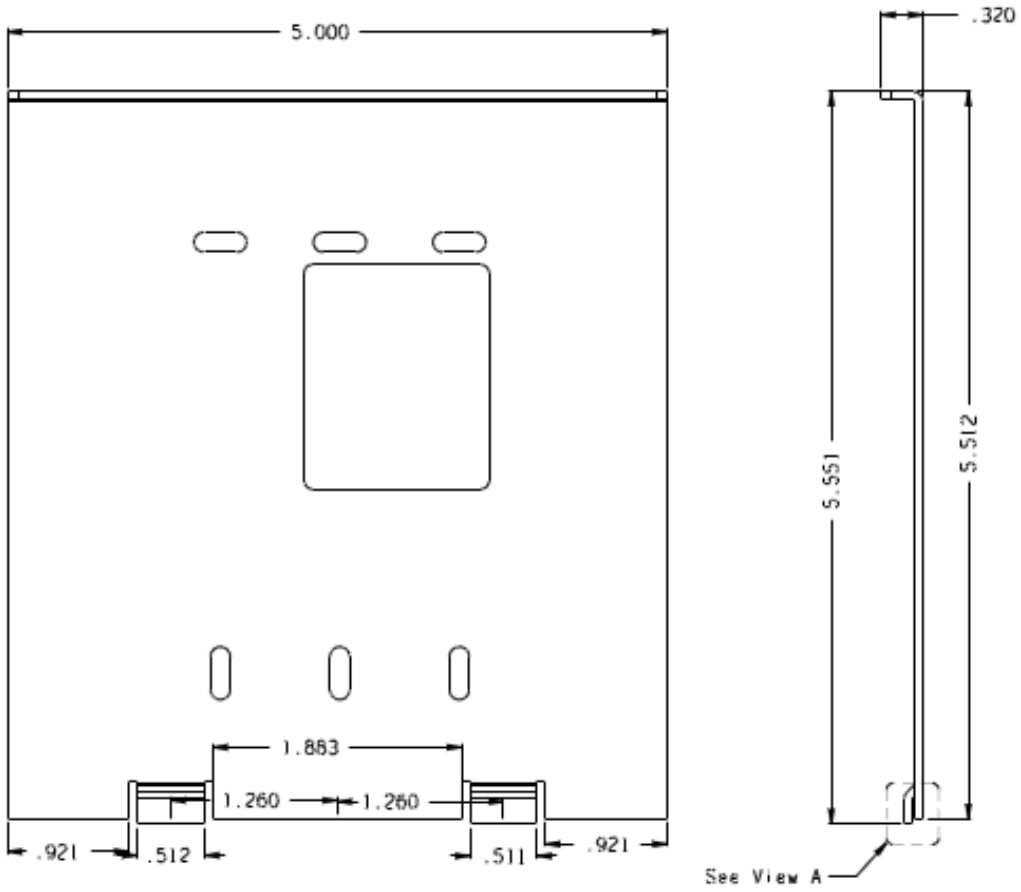
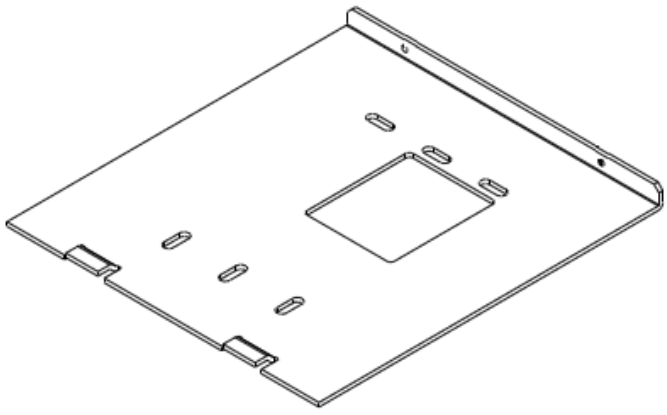
Touchless detection distance		1 (25)	1.5 (37)	2 (50)	In (mm)
Red LEDs	Luminous intensity	-	2415	-	mcd
	Wavelength	-	645	-	nm
Green LEDs	Luminous intensity	-	5985	-	mcd
	Wavelength	-	510	-	nm

Actuator mounting plate (included)

The mounting plate is constructed from 6061 Aluminum and features a metal locking pin.

This design allows the plate to seamlessly accommodate various electrical box sizes.





BWC01-RFA-SW-CDN-01 RFA (Request for Assistance) Button

The BWC01-RFA-SW-01 RFA button serves as the user interface to request assistance. When the RFA button is pushed, the interior and exterior alarm will be activated.

In this mode:

- the door will unlock
- the interior accessible button will show that the door is unlocked (The lock icon will be off but the wheelchair icon will remain flashing RED)
- the exterior button will remain like if the washroom is occupied (Both wheelchair and lock icons will remain RED).
- Pull the RFA button to cancel an alarm. The door will automatically re-lock if there is someone inside.
- During an RFA alarm, the care giver can make the system "Go-Silent" by pulling the RFA button for 2 seconds then pushing back the RFA button. This will silence the exterior alarm and keep the door unlock for the care givers to enter and exit the washroom as needed while keeping the washroom in occupied mode.

Features

- Push / Pull 40mm mushroom button
- Language: English, French
- Stainless steel wall plate

Installation

- Fits on a 2x4 electrical box or can be installed directly on the wall surface
- Simplified connection, two wire BUS
- See wiring diagram at the end of manual for installation Instructions.
- See Figure 1, page 7 for installation location

Dimensions

4.5 x 2.75 x 1.5 inches (115 x 70 x 38 mm)

Electrical characteristics

Parameter	MIN	TYP	MAX	Unit
Power consumption	-	0.64	1	W

BWC01-RFA-AL-CDN-01 RFA (Request for assistance) Alarm

The BWC01-RFA-AL-CDN-01 is the exterior alarm.

Features

- Visual and audible alarms
- Selectable steady or flash functions for visual indicator
- Go-Silent feature - While providing assistance, care givers can set the system in silent RFA mode. In this silent mode, the exterior RFA visual alarm will remain active, and allows the care giver to exit or enter the washroom as needed while keeping the washroom in occupied mode.
- Language: English, French

Installation

- Fits on a 2x4 electrical box or can be installed directly on the wall surface
- Simplified connection, two wire BUS
- See wiring diagram at the end of manual for installation
- Instructions.
- See Figure 1, page 7 for installation location

Dimensions

4.8 x 2.9 x 1.8 inches (122 x 74 x 46 mm)

Electrical characteristics

Parameter		MIN	TYP	MAX	Unit
Power consumption		-	0.64	2.4	W
Sound output power		-	100	-	dbA
Sound rated frequency		2400	2900	3400	KHz
LEDs	Luminous intensity	20150	35000	46100	mcd
	Wavelength	-	450	-	nm

DC-01 Door Closed Switch

The DC-01 door closed switch is a magnetic device that signals the main control when the door is fully closed.

DC-01 is a surface mount type (Standard with kit)
DC-02 is a recessed type (Optional)

Installation

- See wiring diagram at the end of manual for installation Instructions.
- See Figure 1, page 7 for installation location

Electrical characteristics

Parameter	MIN	TYP	MAX	Unit
Contact ratings (28VDC max)	-	-	300	mA
Operating temperature	-55	-	70	°C

BWC01-PTL-SW-CDN-01 PTL (Push to Lock) Button

(Optional component)

The BWC01-PTL-SW-01 PTL button is the user interface to lock the door if automatic lock is disabled.

Features

- Push spring return 40mm mushroom button
- Fits on a 2x4 electrical box or can be installed directly on the wall surface
- Simplified connection (Only two wires), none-polarized two wire BUS
- Stainless steel wall plate
- Language: English, French

Installation

- Fits on a 2x4 electrical box or can be installed directly on the wall surface
- Simplified connection, two wire BUS
- See wiring diagram at the end of manual for installation Instructions.
- See Figure 1, page 7 for installation location

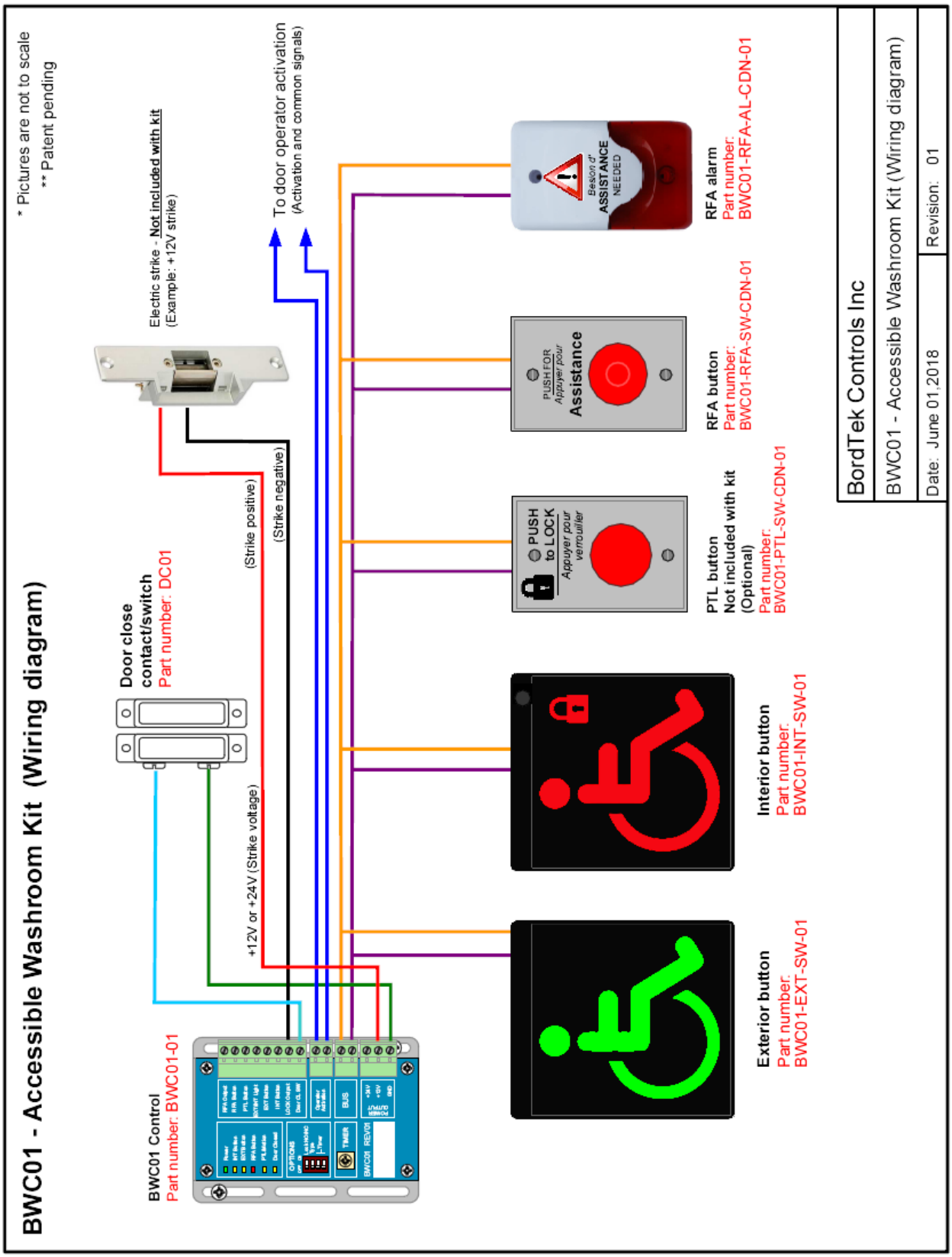
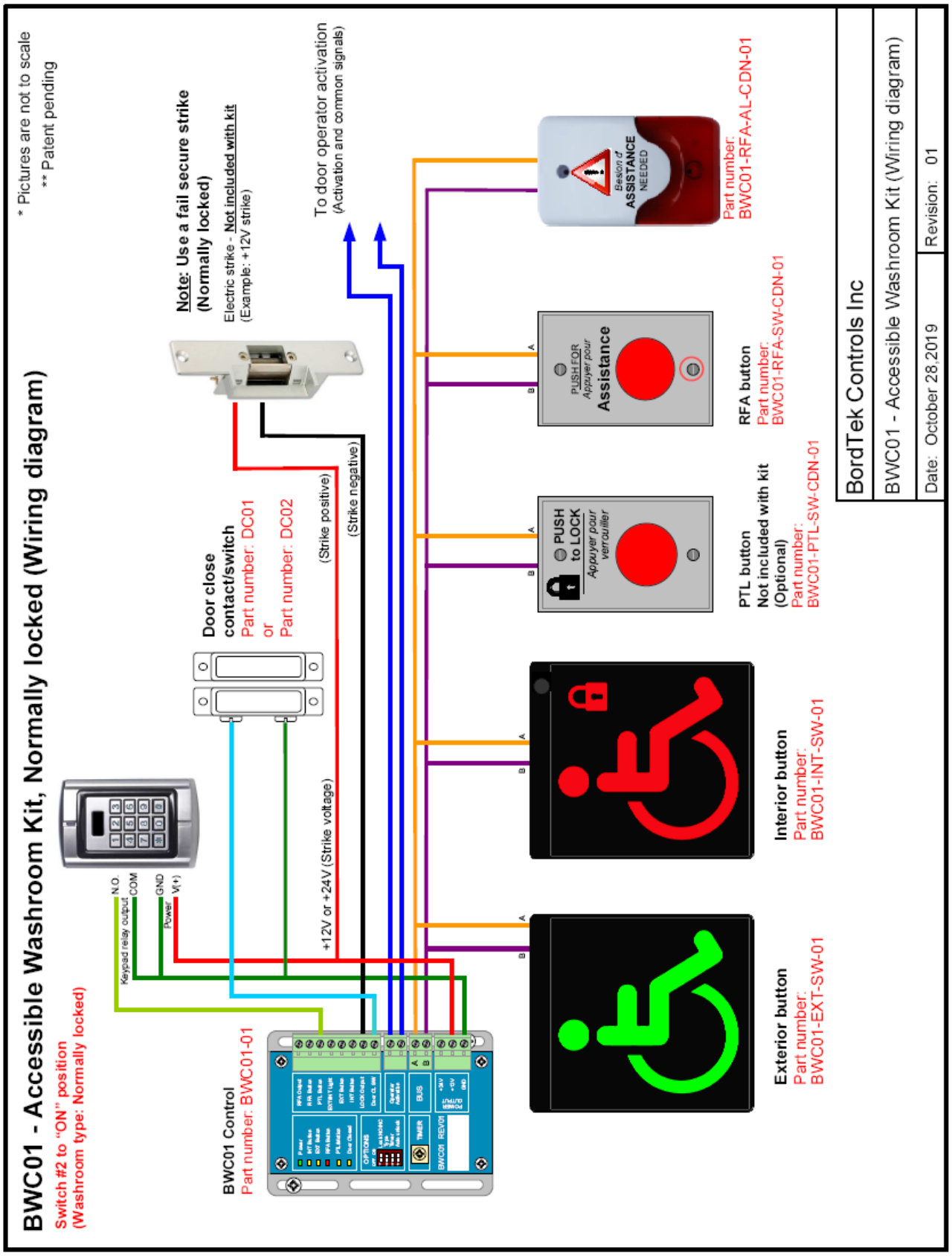
Dimensions

4.5 x 2.75 x 1.5 inches (115 x 70 x 38 mm)

Electrical characteristics

Parameter	MIN	TYP	MAX	Unit
Power consumption	-	0.64	1	W

BWC01 Wiring diagram for normally unlock washroom / restroom



BWC01 Wiring diagram for normally locked washroom / restroom