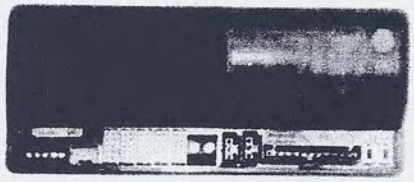
besam
ASSA ABLOY

CUHub™ USER'S GUIDE

LOCKOUT MODULE FOR USE WITH BESAM CU2 CONTROL

1 Description

The CUHub™ is a programmable lockout module used with the Besam CU2 Control. The module provides sensor plug-in connectors and easy 2-button digital programming with a user-friendly display. The CUHub™ product line is identified by a orange translucent housing.



2 Specifications

DESCRIPTION	SPECIFICATION	COMPONENT INPUTS	COMPONENT OUTPUTS
Supply voltage	12 to 24 VAC/VDC: +/- 10%	(2) Eagle Motion Sensors (1) BodyGuard Sensor * (2) Pair of Door Mounted Sensors (1) Auxiliary: Push Plates, RF, etc. (1) SBK 30 Photo Beam pair (1) On/Off/Hold Switch * Use Y-Harness for 2nd BodyGuard (Dual Egress).	(1) Door Control
Power frequency	50/60 Hz		
Power consumption	80mA max. (No load applied)		
Temperature range	-4°F to +131°F		
Dimensions	5.2" (133mm) W x 2.2" (55mm) D x 1" (25mm) H		
Housing material	Polycarbonate – Orange Translucent		
Relay specification	Max. switching voltage: 125 VAC, 60VDC Max. switching current: 1A Max. switching power: 62.5VA, 30W		

3 Precautions

CAUTION

- ❑ Shut off all power going to header before attempting any wiring procedures.
- ❑ Maintain a clean & safe environment when working in public areas.
- ❑ Constantly be aware of pedestrian traffic around the door area.
- ❑ Always stop pedestrian traffic through the doorway when performing tests that may result in unexpected reactions by the door.
- ❑ ESD(electrostatic discharge): Circuit boards are vulnerable to damage by electrostatic discharge. Before handling any board ensure you dissipate your body's ESD charge.
- ❑ Always check placement of all wiring before powering up to ensure that moving door parts will not catch any wires and cause damage to equipment.
- ❑ Ensure compliance with all applicable safety standards (i.e. ANSI A156.10) upon completion of installation.
- ❑ DO NOT attempt any internal repair of the CUHub™. All repairs and/or component replacements must be performed by Besam, Inc. Unauthorized disassembly or repair:
  1. May jeopardize personal safety and may expose one to the risk of electrical shock.
  2. May adversely affect the safe and reliable performance of the product resulting in a voided product warranty.

4 Pre Installation Check

1. When preparing to wire multiple devices together for a 'system' configuration, it is best to ensure the correct operation of each device independently before starting thereby reducing troubleshooting time later in the event of a discrepancy.
2. Prior to installing any equipment, ensure the correct line voltage and stability. When applying equipment on a new installation utilizing new electrical supply circuits, always ensure that correct line voltage exists and is stable. Remember to disconnect the power after this is checked and before performing any wiring to the system.

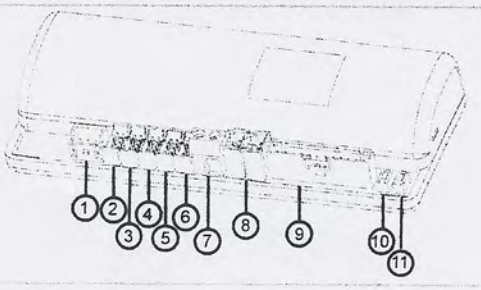
5 Installation

1 CUHub™ Module

STEP 1:	CUHub™ Module	STEP 8 :	Install Activation Device Eagle
STEP 2:	Install CUHub™ Module	STEP 9 :	Install Push Plates
STEP 3:	Install ON/OFF/HOLD Switch	STEP 10:	Knowing Act Installation and Setup
STEP 4:	Install BodyGuard	STEP 11:	Install Door Mounted Sensor
STEP 5:	CUHub™ Harness Cable	STEP 12:	Install Photo Beam SBK-30
STEP 6:	BodyGuard III Setup	STEP 13:	Check Function Photo Beam Input on CUHub™ Module
STEP 7:	Check Function on CUHub™ Module		

CONNECTION DIAGRAM:

1 Switch - ON/OFF/HOLD
2 Sensor - Eagle 1
3 Sensor - Eagle 2
4 Sensor - Door Mounted #1
5 Sensor - Door Mounted #2
6 BodyGuard
7 Auxiliary
8 Photo Beam - TX / RX
9 To CU2 Control
10 Setup - INCR (Increment)
11 Setup - FUNC (Function)



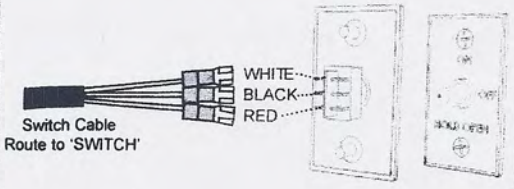
INSTALLATION HARNESSES:

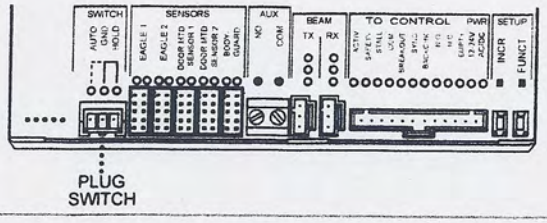
BESAM P/N:	BEA P/N:	DESCRIPTION:
US02-0583-08	20.5096	Eagle Harness
US02-0583-10	20.5071	SuperScan Harness
US02-0583-11	20.5082	BodyGuard Harness
US02-0583-09	20.5083	BodyGuard Y Harness (Double Egress Doors)
US02-0583-13	20.5078	ON-OFF-HOLD Switch Harness
US02-0583-05	20.5119	Control Output (CU2) Harness

2 Install CUHub™ Module

1. Install the CUHub™ Module (US02-0583-02) in an accessible location inside the Door Header using supplied Velcro Strips. Allow adequate space: to easily see the CUHub™ Module display, to access the Push Buttons and to access all connectors.

3 Install ON/OFF/HOLD Switch



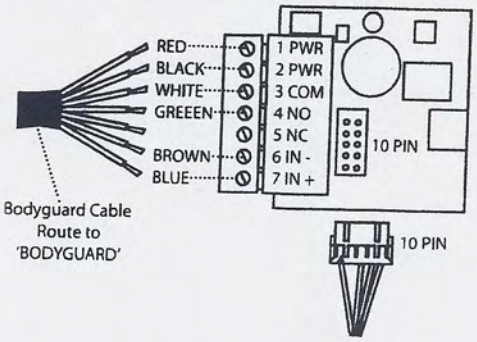


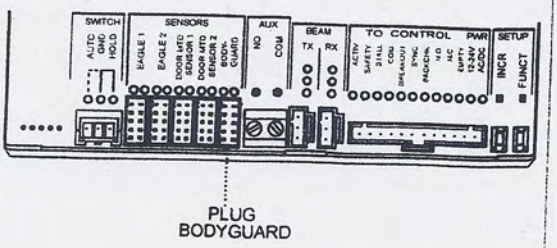
1. Install ON/OFF/HOLD Switch in desired location. Ensure the location is easily accessible to the Store Manager or Owner.
2. Route Wiring Harness (US02-0583-13) from ON/OFF/HOLD Switch to CUHub™ and plug into CUHub™ Module at location marked 'SWITCH'.

NOTE: When the switch is placed in HOLD OPEN mode , the door must be activated to enable the door to open and remain in HOLD OPEN mode.

5 Installation (Continued)

4 Install BodyGuard

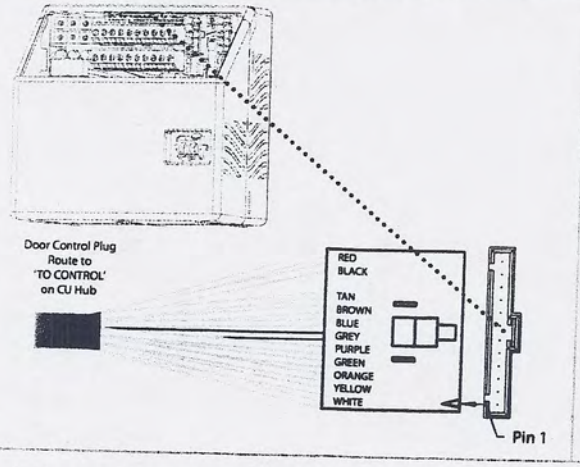


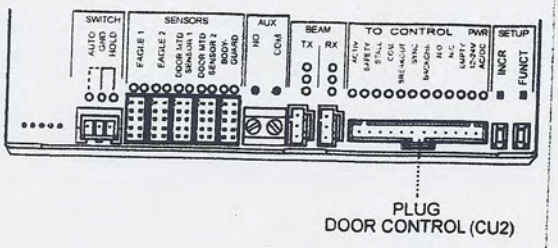


1. For complete installation instructions refer to BodyGuard User's Guide (75.5134).
2. Plug Ten Pin Connector into BodyGuard as shown above, hardwire as shown above only if Ten Pin Connector is not available.
3. Route BodyGuard Cable Harness (US02-0583-11) through Door Header to CUHub™ Module.
4. Plug BodyGuard Cable into CUHub™ Module at location marked 'SENSORS' labeled 'BODYGUARD'.

NOTE: For Dual BodyGuard installations use BodyGuard Dual Egress 'Y' Cable Harness (US02-0583-09) along with BodyGuard Cable Harness (US02-0583-11).

5 Install CU Harness to Door Control (CU2)





1. Plug wire harness (US02-0583-05) into Door Control (CU2).
2. Plug wire harness labeled 'To Control' into CUHub™ Module at location marked 'TO CONTROL'.

5 Installation (Continued)

6 BodyGuard III Setup

BODYGUARD III

1. Unlock BodyGuard Sensor
2. Set Function to Value
3. Set Output Configuration to Normally Closed
4. Lock Sensor by pressing Lock two times

BODYGUARD (S/N less than 43508)

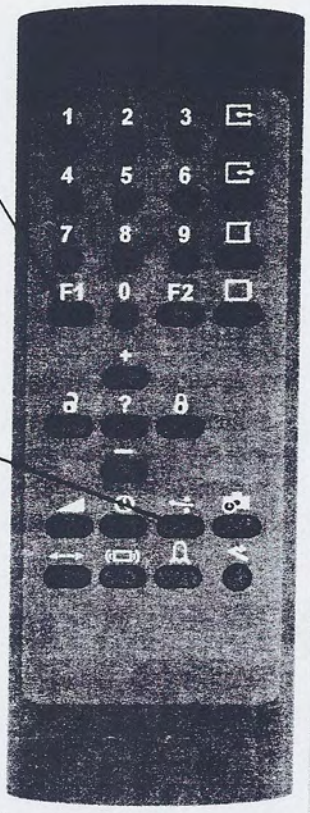
1. Unlock BodyGuard Sensor
2. Set Function to Value (Default)
3. Set Output Configuration to Normally Closed
4. Lock Sensor by pressing Lock two times

BodyGuard III

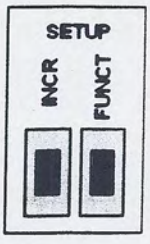
FUNCT to VALUE

FUNCT to VALUE (default)

- Normally OPEN Relay (default)
- Normally Closed Relay

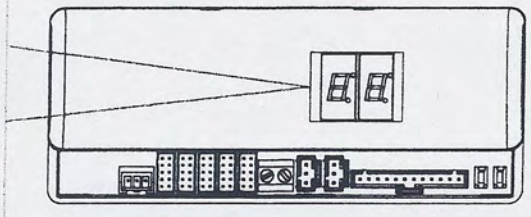


7 Check Function on CUHub™ Module



FL = 01 BODYGUARD III

FL = 02 BODYGUARD



BodyGuard III:

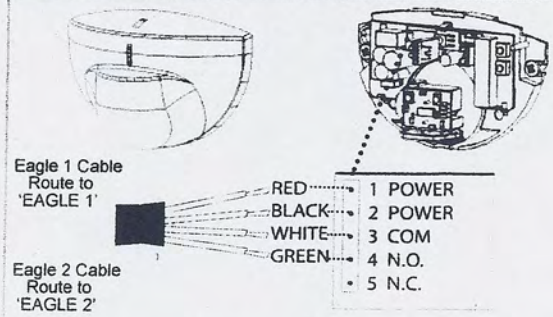
1. Set 'FUNCT' FL to 'INCR' 01 (Default) by first pressing the 'FUNCT' button until Module Display shows FL then press 'INCR' button until Module Display shows 01.

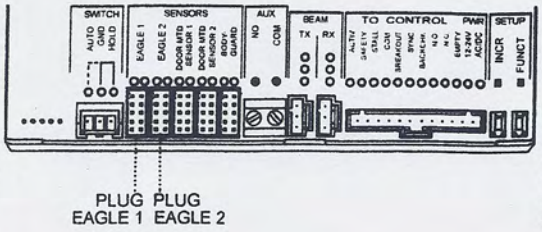
BodyGuard (S/Ns less than 43508):

1. Set 'FUNCT' FL to 'INCR' 02 by first pressing the 'FUNCT' button until Module Display shows FL then press 'INCR' button until Module Display shows 02.

5 Installation (Continued)

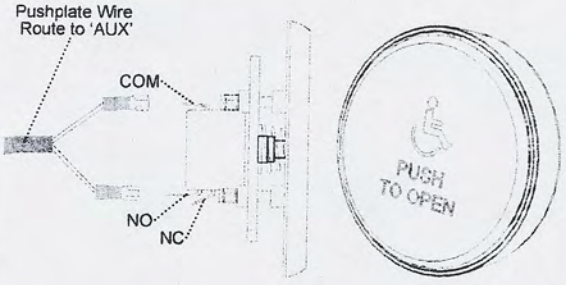
8 Install Activation Device Eagle

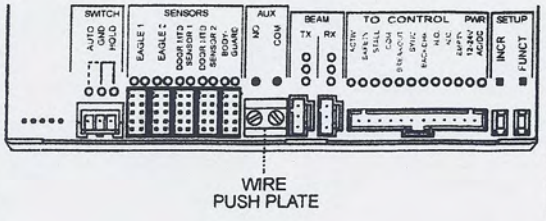




1. For complete installation instructions refer to Eagle User's Guide (75.0058).
2. Wire Eagle as displayed above:
3. Mount Eagle Sensor to Door Header and route Eagle Cable (US02-0583-08) through Door Header to CUHub™ Module.
4. For One Way Door Traffic Installation:
   - Plug Eagle Cable into CUHub™ Module, at location marked 'SENSORS', labeled 'EAGLE 1'.
5. For Two Way Door Traffic Installation:
   - Plug Eagle Cable into CUHub™ Module, at location marked 'SENSORS', labeled 'EAGLE 2'.

9 Install Pushplates

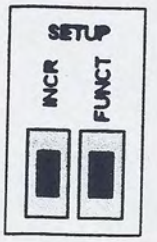




1. Mount Push Plate to Wall Jamb or desired location accessible to traffic flow.
2. Route wire from Push Plate to CUHub™ Module.
3. Using CUHub™ Screw Terminal, fasten 'NO' leg of Plate to 'NO' at 'AUX' location on CUHub™ Module and 'COM' leg of Plate to 'COM' at 'AUX' location on CUHub™ Module.

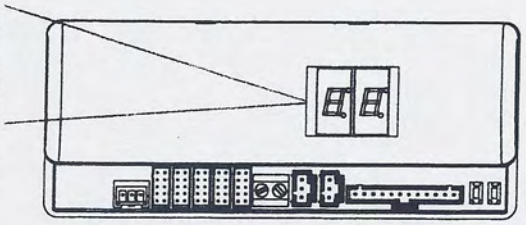
5 Installation (Continued)

10 Knowing Act Installation and Setup



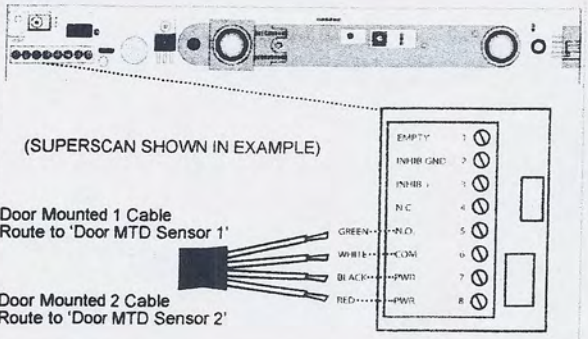
FA = 01 KNOWING ACT

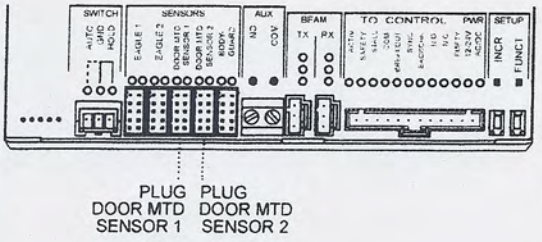
FA = 00 NORMAL OPERATION



1. For knowing Act Applications where all Activation Devices are required to be disabled when door is in the Closed Position, make the following adjustments to the CUHub™ Module:
   - Press 'FUNCT' button until FA is displayed on the CUHub™ Module Display.
   - For Knowing Action Opeation: Set FA to 01.
   - For Knowing Operation: Set FA to 00.

11 Install Door Mounted Sensor





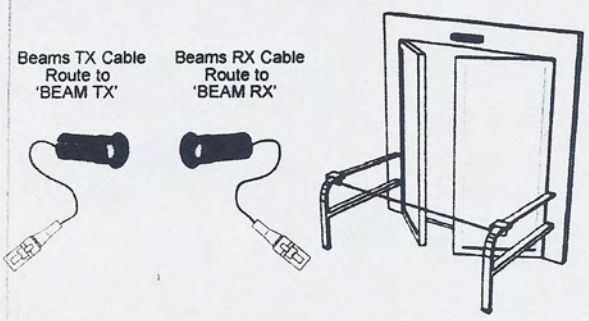
1. For complete installation instructions refer to appropriate Door Mounted Sensor User's Guide.
2. Wire Door Mounted Sensor (Superscan displayed above).
3. Ensure harness labeled APPROACH is wired to Activation Side of Door Mounted Sensor and harness labeled SAFETY is wired to Safety Side of Door Mounted Sensor.
4. Route Door Mounted Sensor Wiring Harness to CUHub™ Module.
5. For Two Door Solution:
   Designate Door 1 and Door 2.
   Plug wire harness from Door 1 into CUHub™ Module at location marked 'SENSORS' labeled 'DOOR MTD SENSOR 1'.
   Plug wire harness from Door 2 into CUHub™ Module at location marked 'SENSORS' labeled 'DOOR MTD SENSOR 2'.

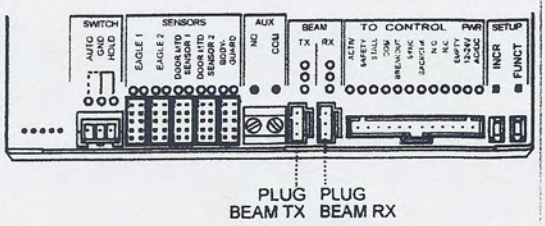
CAUTION: IF YOU INTEND TO ONLY INSTALL DOOR MOUNTED SENSOR(S) ON THE SAFETY (SWING) SIDE OF THE DOOR, PLEASE FOLLOW THESE INSTRUCTIONS:

1. MAKE SURE THERE IS NO POWER CONNECTED TO THE SENSOR(S).
2. IDENTIFY THE CORRECT HARNESS.
3. CLEANLY CUT THE CABLE(S) LABELED 'APPROACH'.
4. CAP EACH WIRE (4 PER HARNESS) INDIVIDUALLY WITH THE PROVIDED WIRE NUTS.
5. ENSURE EACH WIRE IS PROPERLY ISOLATED.

5 Installation (Continued)

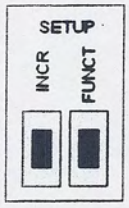
12 Install Photo Beam SBK-30





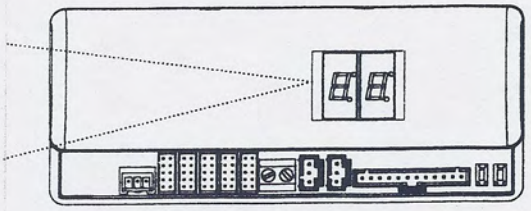
1. For complete installation instructions refer to Beams SBK-30 Users Guide (75.5179).
2. Route Beam TX Cable to CUHub™ Module.
3. Route Beam RX Cable to CUHub™ Module.
4. Plug Beam TX Cable into CUHub™ Module at location marked 'BEAM TX'.
5. Plug Beam RX Cable into CUHub™ Module at location marked 'BEAM RX'.

13 Check Function Photo Beam Input on CUHub™ Module



FP = 00
NORMALLY OPEN

FP = 01
NORMALLY CLOSED SBK-30



1. When using Photobeams be sure to check the *FP* variable on the CUHub™ Module by pressing the 'FUNCT' buttons until *FP* displayed. Then verify *00* is selected for Normally Open operating beams and *01* is selected for Normally Closed operating beams or SBK-30.

6 Wiring the CUHub™ Mod-

TERMINAL IDENTIFIER	DESCRIPTION	REMARKS
SWITCH	On-Off-Hold Switch plug-in connector	An On-Off-Hold switch kit DOES NOT come with the CUHub™. No other switching is required. The Module will not operate without the switch. NOTE: An On-Off-Hold Switch Kit/Harness needs to be purchased separately.
SENSORS	All Sensors - plug-in connectors	The CUHub™ provides easy plug-in connectors for (2) Eagles, (2 sets) Quadscan or Superscan and (1) BodyGuard. Note – for double egress doors, (2) BodyGuards can be used with a BEA 'Y' cable. Connections are left blank if no sensor is desired for that particular input EXCEPT the BodyGuard. A BodyGuard sensor must always be plugged in to allow operation.
AUX	Push Plate Terminal or RF Receiver	This terminal allows an interface for use with push plates or other generic 'Knowing Act' devices with a "dry" contact output. This input works whether or not the module is programmed for Knowing Act.
BEAM	Safety Beam Plug-in Connectors SBK-30	The CUHub™ works with the BEA SBK-30 safety beam set. A plug-in connection of the CUHub™ is all that is required. Connection points are marked TX (transmitter) and RX (receiver). A beam interruption during the closing cycle allows the inhibiting to the BodyGuard sensor to cease, thus enabling overhead presence detection for the remainder of the closing cycle.
TO CONTROL	Outputs to Door Control	Within the door control output, there is one activation output, one safety output, and one stall. There are two separate (isolated) 'Com' connections, one for stall, and one for the activation and safety circuit.
SETUP	Program Buttons	There are two buttons provided for programming the CUHub™ module. FUNCT allows scrolling through each function, while the second button, INCR, allows toggling through the values for each function. Refer to the 'Programming' section of this manual for further instruction.

7 Programming the CUHub™

1 Operating Parameters

1. Very little programming is required on the CUHub™. The CUHub™ can display two sets of information for the user interface operating parameters and programming parameters.
2. The first provides a set of real-time operating parameters. These displays are available only to view, with no user interaction possible. They merely provide the operating status of the system. The chart below shows these displays.

rn	**Run Mode** – Shows status of outputs: Ac - Activation Output SF - Safety Output SS - Stall Output
dd	**Display Door** – Shows current state of door position: oP - Opening do - Door Open ho - Hold Open (3-position switch in 'H/O' position) dc - Door Closed cL - Closing oF - Off (3-position switch in 'OFF' position)
dS	**Display Sensors** – Shows which sensors are in detection: AE - Activation Eagle AP - Activation Push Plate Sb - Safety BodyGuard SP - Safety Photoelectric Beams SS - Safety - Stall side door-mounted sensor

NOTE: Remember when troubleshooting, these displays can be extremely helpful in quickly indentifying possible casual conditions.

7 Programming the CUHub™ (continued)

2 Programming Parameters

1. The second set of displays is for programming the module and allows the user to access and change the values as needed. The chart below explains each function and the possible values for each. For a typical application on most operators, the default settings should suffice.

   NOTE: Function displays are accessed by momentary presses of the 'FUNCT' function button and values are changed by momentarily pressing the 'INCR' increment button.

FL	01 = New lockout data 02 = **Old lockout data**	**Function Lockout** - This module has the ability to be backwards compatible with old BodyGuards. By setting the FL function to 02 the data produced is compatible with the old BodyGuard, while 01 is compatible with the new BodyGuard data.
FP	00 = **Push and Go OFF** 01 = Push and Go ON	**Function Push and Go** - This setting allows the use to set the door up for Push and Go operation. A setting of 00 (default) turns Push and Go OFF. A setting of 01 sends an activation signal to the door when pushed.
FA	00 = **Normal Operation** 01 = Eagle is Disabled	**Knowing Act Function** - This setting allows the use the ability to ignore the Eagle and Superscan inputs when the door is closed. A setting of 00 enables the Eagle at all times and a setting of 01 allow for this knowing act state.
Fb	00 = **NO Photoelectric Logic** 01 = NC Photoelectric Logic	**Function Beams** - This setting allows the use the ability to change logic of the beam input for two different types of beams. A 00 indicates a set of beams that is an open circuit when they are broken and a closed circuit when the beams are broken. A 01 indicates a set of beams that are open when broken and closed when the beams are not broken.
Fo	00 to 30 - Timeout in Seconds (01 **Seconds - DEFAULT**)	**BodyGuard Closing Timeout** - By incrementing this value, the module will allow for a manual timeout for lockout time. This is useful for situations when the BodyGuard is not coming back on due to wind stack issues during closing.
Fh	00 = **Switch Safety OFF** 01 = Switch Safety ON	**Function Hold SW Safety** - This function allows the user to have two unique operations of the ON/OFF/HOLD Switch. When set to 00 (default), when the user switched from the Off position to the Hold Open or vice versa, the BodyGuard safety sensor is removed from the system and the door will immediately follow the command. When the Fh variable is set to 01, the BodyGuard safety sensor must clear before any action is taken.

8 Documentation

1. Document all work. For future reference, be sure to record the CUHub™ serial number on your work order. It is also a good idea to record all function settings (on your work ticket) that were programmed into the CUHub™.

2. Educate the Owner / Manager as to the proper operation of the door and sensor system, and what to do to ensure safe use of the door in the event of discovering a malfunction. Show the Owner / Manager how to perform a daily safety check of the system.

3. Be sure to obtain signatures on your work order for all work accomplished.

9 Troubleshooting

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
CUHub™ is not showing any display	No Input Power	Check for 18 VDC on control, TB2 pins 11-12. If no power, check control fuse and circuit breaker on transformer.
	Faulty Module	Replace Module.
Door will not Open	No Inputs Connected	Connect (as a minimum) the On-Off-Hold Switch and the BodyGuard.
	Safety Beam input *FP* is set incorrectly	Check function *FP* at the module. If no SBK-30 beams are plugged into the module, value should be set to *00*.
	On-Off-Hold Switch in wrong position or is faulty.	Check status of On-Off-Hold Switch.
	Outputs to Control not connected or faulty.	Verify connections.
	BodyGuard data and/or Relay Setting not correct.	Verify *FI* and Relay Configuration.
	CUHub™ *FL* setting not correct.	CUHub™ *FL* setting and BodyGuard setting must correspond.
	CUHub™ function *FA* set to *01* when no AUX is used.	Function *FA* set to Knowing Act *01* without AUX inputs used i.e. Pushplates, etc
	SBK-30 Beams misaligned.	Align Beams.
	SBK-30 Beams Faulty.	Replace SBK-30 Beams.
	SBK-30 on CUHub™ *FP* set to *00*.	Set SBK-30 on CUHub™ to *01*.
	Superscan wiring not correct.	Correct Superscan wiring as needed.
	Superscan no power to Stick.	Check wiring.
	Superscan JP 2 in wrong position.	Set to Default.
	Stick Bad	Replace Stick.
Door will not Close	No inputs connected.	Connect (as a minimum) the On-Off-Hold Switch and the BodyGuard.
	On-Off-Hold Switch in position Hold Open.	Check On-Off-Hold Switch position.
	Safety circuit is being held active.	Check function *d5* at module.
	SBK-30 Beams misaligned.	Align Beams.
	SBK-30 Beams Faulty.	Replace SBK-30 Beams.
	SBK-30 on CUHub™ *FP* set to *00*.	Set SBK-30 on CUHub™ to *01*.
	Superscan wiring not correct.	Correct Superscan wiring as needed.
	Superscan no power to Stick.	Check wiring.
	Superscan JP 2 in wrong position.	Set to Default.
	Stick Bad.	Replace Stick.
Door keeps recycling open (ghosting).	Activation sensor 'seeing' the door movement.	Adjust motion sensor or door mounted sensor at non-swing side.
BodyGuard flashing orange.	Incorrect data.	Verify and change *FI* if needed at BodyGuard.
		Check and change *FL* if needed at CUHub™.
		Check data wires. Harness could be a problem.

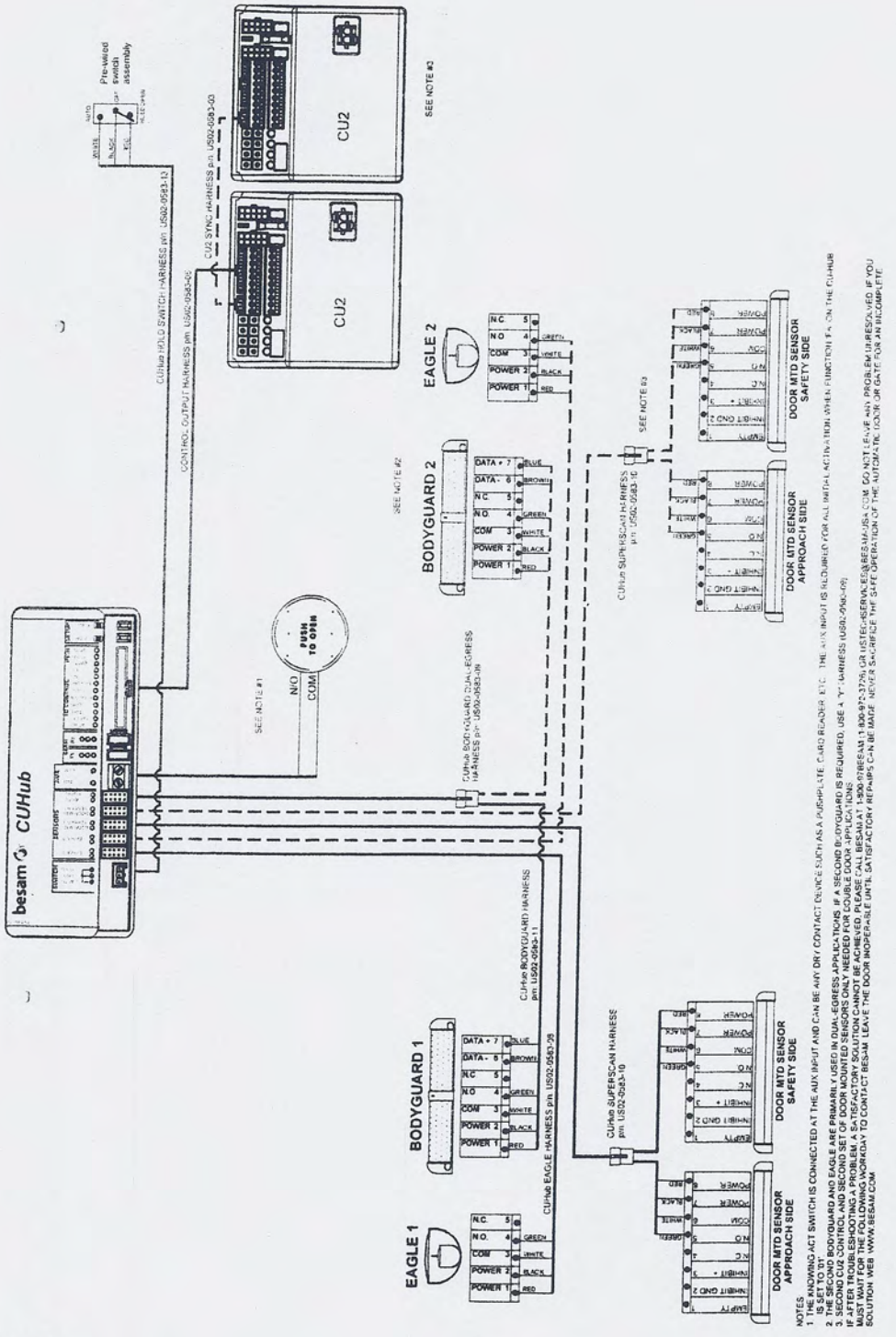
10 Company Contact

besam
ASSA ABLOY

CAUTION

Do not leave problems unresolved. If a satisfactory solution cannot be achieved after troubleshooting a problem, please call Besam technical services. If you must wait for the following workday to call Besam technical services, leave the door inoperable until satisfactory repairs can be made. Never sacrifice the safe operation of the automatic door or gate for an incomplete solution.

For more information, visit www.besam.com.

1-800-97BESAM (1-800-972-3726)
USTechServices@besam-usa.com

11 Appendix - Wiring Diagram