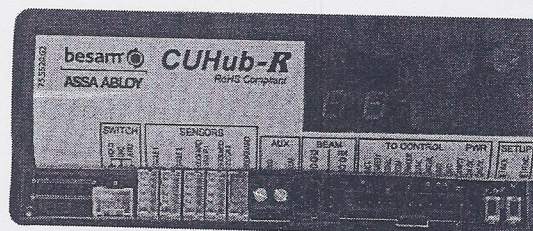


1 Description

The CUHub-R™ 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-R™ product line is identified by an 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 *	(1) Door Control
Power frequency	60Hz	(2) Pair of Door Mounted Sensors	
Power consumption	80mA max. (No load applied)	(1) Auxiliary: Push Plates, RF, etc.	
Temperature range	-20°F to +150°F	(1) SBK 30 Photo Beam pair	
Dimensions	5.2" (133mm) W x 2.2" (55mm) D x 1" (25mm) H	(1) On/Off/Hold Switch	
Housing material	ABS – Orange Translucent	* Use Y-Harness for 2nd BodyGuard (Dual Egress).	
Solid State Relay Specifications	Max. Voltage: 60V (AC peak or DC) Max. Current: 170mA Max. Power Dissipation: 400mW		

3 Precautions



- ☐ 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-R™. 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 equipment on an existing installation or when installing equipment on a new installation, utilizing new electrical supply circuits, always ensure the correct line voltage exists and is stable. Remember to disconnect the power after checking the line voltage and before performing any wiring to the system.

5 Installation

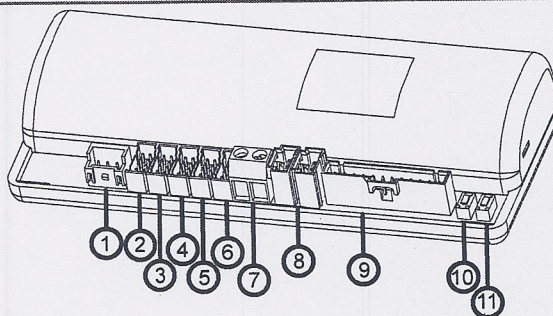
1 CUHub-R™ Module

STEP 1: CUHub-R™ Module
 STEP 2: Install CUHub-R™ Module
 STEP 3: Install ON/OFF/HOLD Switch
 STEP 4: Install BodyGuard
 STEP 5: CUHub-R™ Harness Cable
 STEP 6: BodyGuard III Setup
 STEP 7: Check Function on CUHub-R™ Module

STEP 8: Install Activation Device Eagle
 STEP 9: Install Push Plates
 STEP 10: Knowing Act Installation and Setup
 STEP 11: Install Door Mounted Sensor
 STEP 12: Install Photo Beam SBK-30
 STEP 13: Check Function Photo Beam Input on CUHub-R™ 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)



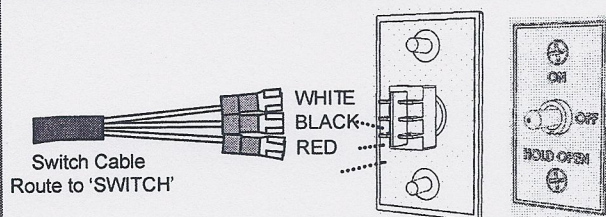
INSTALLATION HARNESSSES:

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

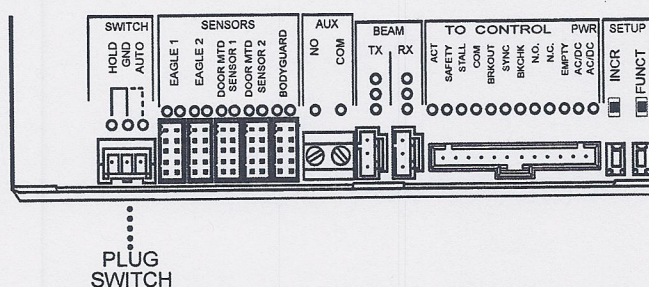
2 Install CUHub-R™ Module

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

3 Install ON/OFF/HOLD Switch



NOTE: An On-Off-Hold switch kit and harness must be purchased separately.



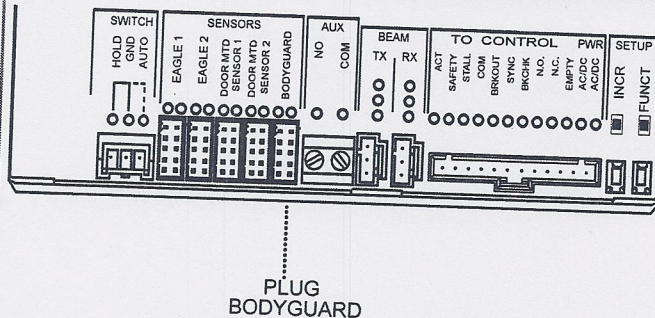
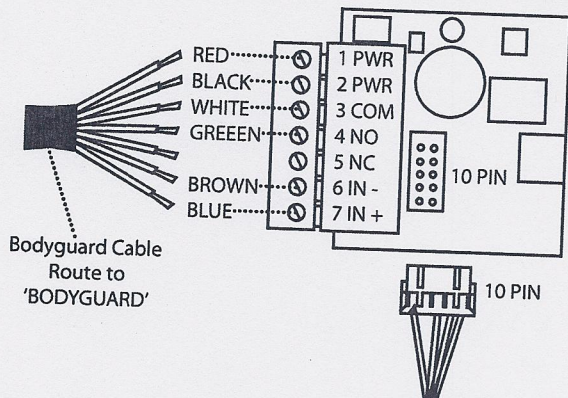
1. Install ON/OFF/HOLD Switch in desired location. Ensure the location is easily accessible to the Store Manager or Owner.

2. Route Wiring Harness (US02-0583-13) from ON/OFF/HOLD Switch to CUHub-R™ and plug into CUHub-R™ Module at location marked 'SWITCH'.

NOTE: When the switch is placed in HOLD OPEN mode, the door will automatically switch to door open and remain in HOLD OPEN mode if Fh is 00, or if Fh is 01 and the Bodyguard is clear.

5 Installation (Continued)

4 Install BodyGuard

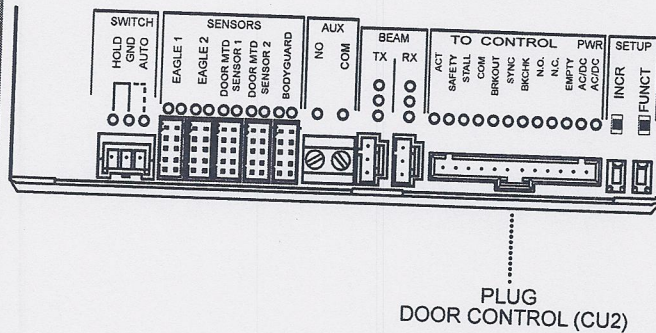
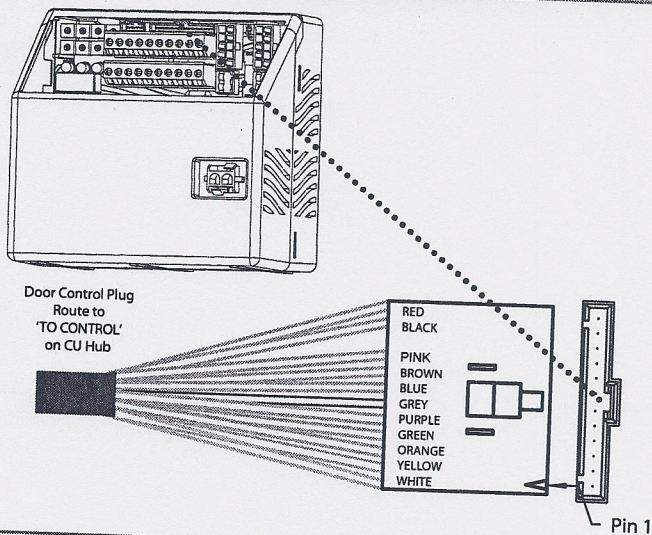


1. For complete installation instructions refer to BodyGuard User's Guide (75.5134).
2. Plug Ten Pin Connector into BodyGuard as shown above, hard wire as shown above only if Ten Pin Connector is not available.
3. Route BodyGuard Cable Harness (US02-0583-11) through Door Header to CUHub-R™ Module.
4.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

NOTE: For Dual BodyGuard, the sensors are located at the 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)








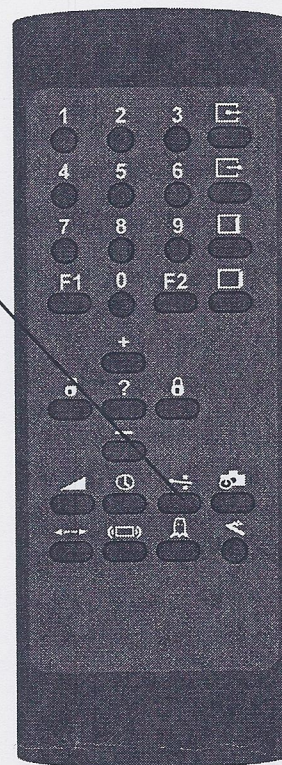
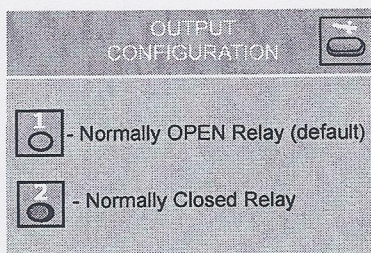
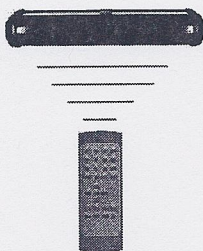
1. Plug wire harness (US02-0583-05) into Door Control (CU2).
2. Plug wire harness labeled 'To Control' into CUHub-R™ Module at location marked 'TO CONTROL'.

5 Installation (Continued)

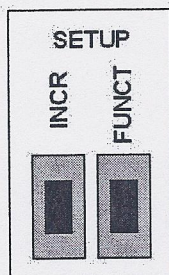
6 BodyGuard III Setup

BODYGUARD III

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

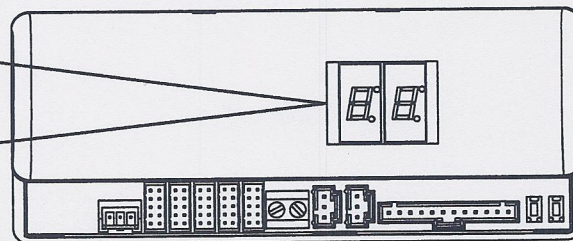


7 Check Function on CUHub-R™ Module



FL = 02
OLD STYLE DATA

FL = 01
NEW STYLE DATA
For Future Development



Old Style Data:

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

New Style Data:

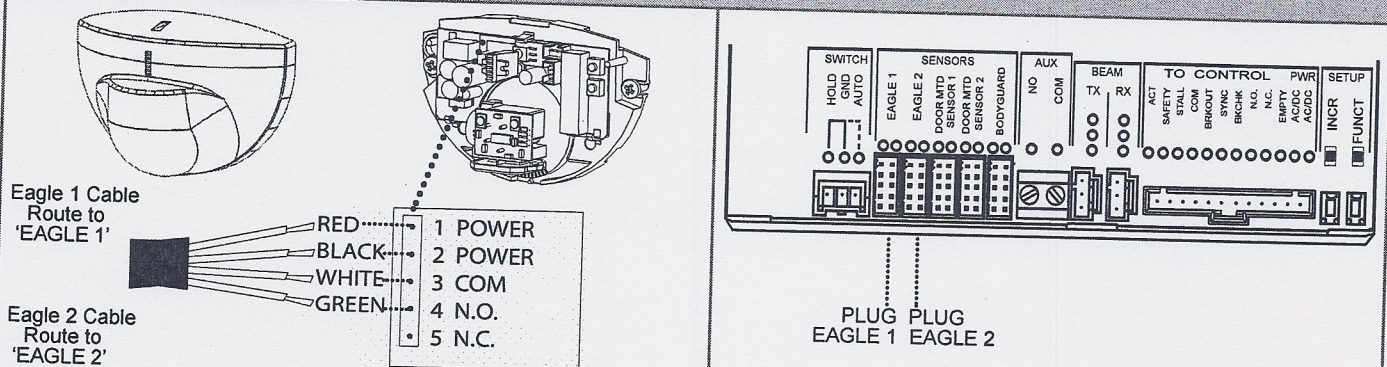
NOTE: For future development.

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

5 Installation (Continued)

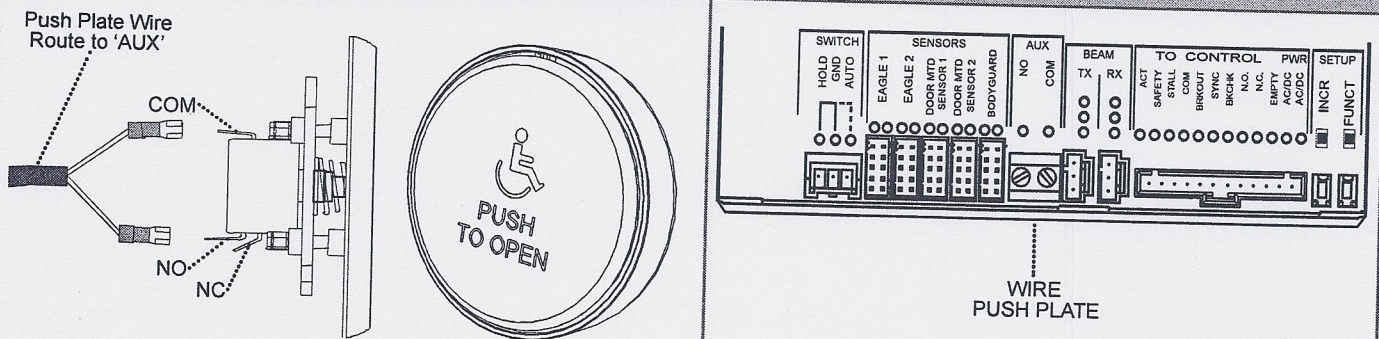
NOTE: All activation devices must be connected to the CUHub-R™. Do not connect activation devices to the CU2.

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-R™ Module.
4. For One Way Door Traffic Installation:
 - Plug Eagle Cable into CUHub-R™ Module, at location marked 'SENSORS', labeled 'EAGLE 1'.
5. For Two Way Door Traffic Installation:
 - Plug Eagle Cable into CUHub-R™ Module, at location marked 'SENSORS', labeled 'EAGLE 2'.

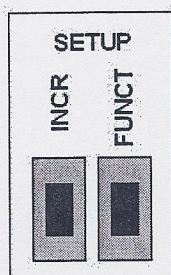
9 Install Push Plates



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

5 Installation (Continued)

10 Knowing Act Installation and Setup

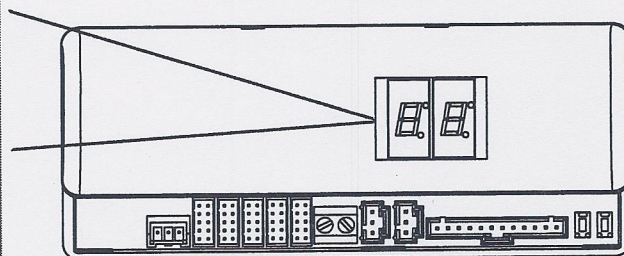
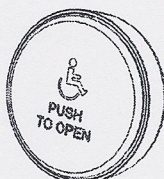


FA = 01

KNOWING
ACT

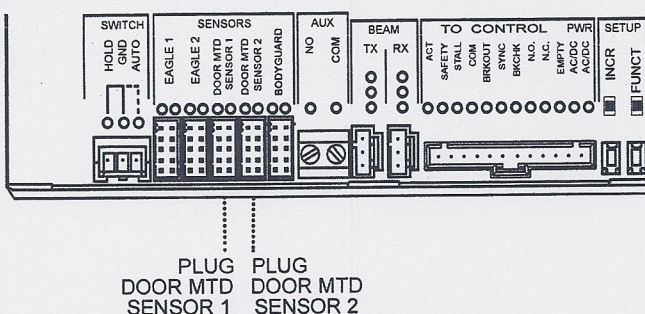
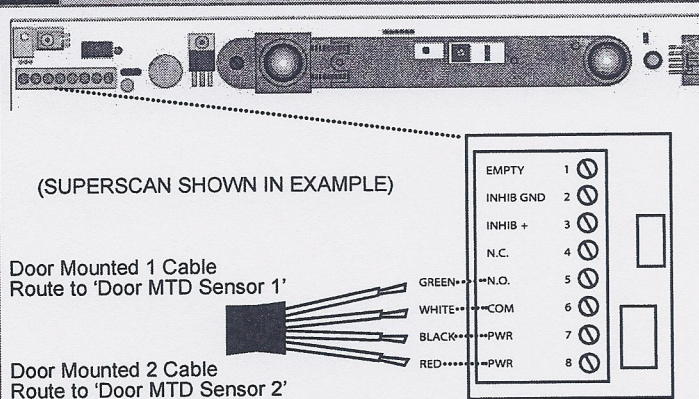
FA = 00

NORMAL
OPERATION



- For Knowing Act applications where all Non Knowing Act activation devices are required to be disabled when door is in the Closed Position, make the following adjustments to the CUHub-R™ Module:
 - Press 'FUNCT' button until FA is displayed on the CUHub-R™ Module Display.
 - For Knowing Action Operation: Set FA to 01.
 - For Automatic Operation: Set FA to 00.

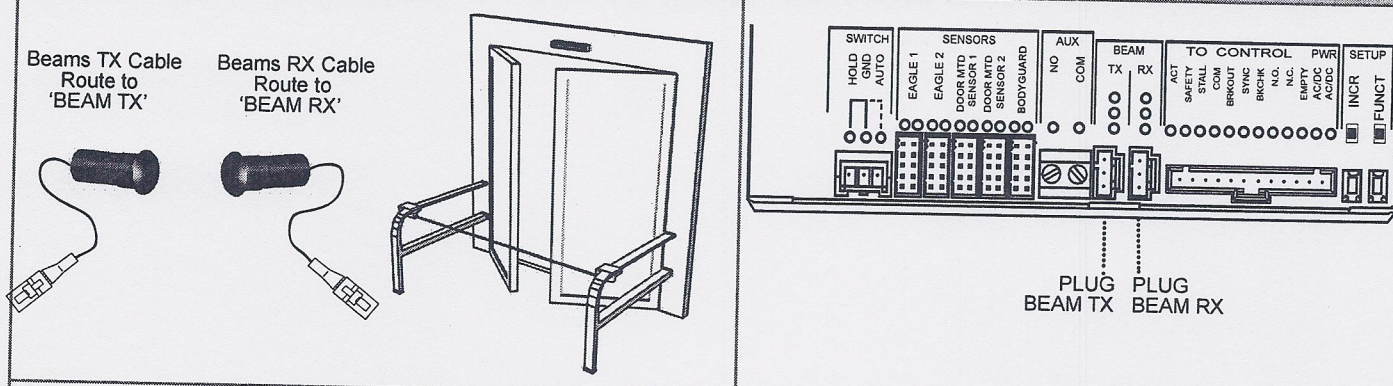
11 Install Door Mounted Sensor



- For complete installation instructions refer to appropriate Door Mounted Sensor User's Guide (75.1029).
 - Wire Door Mounted Sensor (SuperScan displayed above).
 - 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.
 - Route Door Mounted Sensor Wiring Harness to CUHub-R™ Module.
 - For Two Door Solution:
Designate Door 1 and Door 2.
Plug wire harness from Door 1 into CUHub-R™ Module at location marked 'SENSORS' labeled 'DOOR MTD SENSOR 1'.
Plug wire harness from Door 2 into CUHub-R™ 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:
- MAKE SURE THERE IS NO POWER CONNECTED TO THE SENSOR(S).
 - IDENTIFY THE CORRECT HARNESS.
 - CLEANLY CUT THE CABLE(S) LABELED 'APPROACH'.
 - CAP EACH WIRE (4 PER HARNESS) INDIVIDUALLY WITH THE PROVIDED WIRE NUTS.
 - ENSURE EACH WIRE IS PROPERLY ISOLATED.

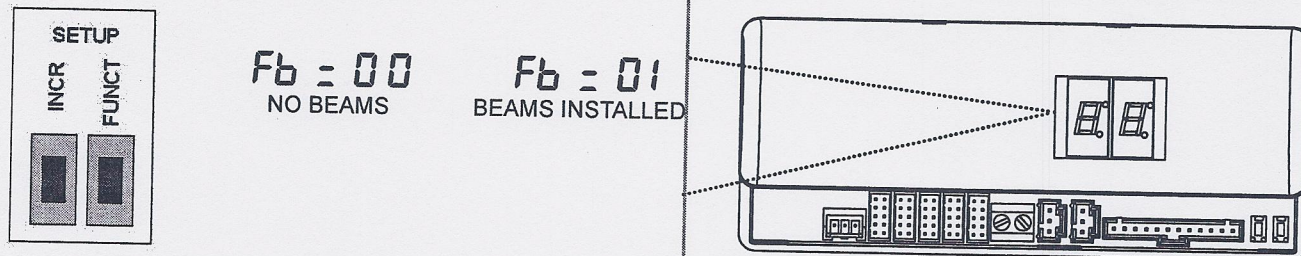
5 Installation (Continued)

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-R™ Module.
3. Route Beam RX Cable to CUHub-R™ Module.
4. Plug Beam TX Cable into CUHub-R™ Module at location marked 'BEAM TX'.
5. Plug Beam RX Cable into CUHub-R™ Module at location marked 'BEAM RX'.

13 Check Function Photo Beam Input on CUHub-R™ Module



1. When using Photobeams be sure to check the *Fb* variable on the CUHub-R™ Module by pressing the 'FUNCT' buttons until *Fb* is displayed. Then verify *00* is selected for no beams and *01* is selected for SBK-30.

6 Wiring the CUHub-R™ Module Summary

TERMINAL IDENTIFIER	DESCRIPTION	REMARKS
SWITCH	On-Off-Hold Switch plug-in connector	An On-Off-Hold switch kit DOES NOT come with the CUHub-R™. The Module will not operate without the switch. NOTE: An On-Off-Hold switch kit and harness must be purchased separately.
SENSORS	All Sensors - plug-in connectors	The CUHub-R™ 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-R™ works with the BEA SBK-30 safety beam set. A plug-in connection of the CUHub-R™ 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-R™ 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-R™

Very little programming is required on the CUHub-R™. The CUHub-R™ can display two sets of information to the user. These sets are programming parameters and operating parameters.

1 Programming Parameters

- The first set of parameters 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. Once one of the programming parameters has been selected, the display will remain **active for 5 seconds** after the last button has been pressed. The display will then become inactive, which is signified by 'CU' and the programming parameters will be saved.

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

NOTE: Make sure the display is inactive with 'CU' before completing all work.

DISPLAYS	DESCRIPTION	
FL	01 = New lockout data 02 = Old lockout data	Function Lockout - This module has the ability to be compatible with older BodyGuards (serial numbers less than 53508) by setting to old style data. Setting the FL function to 02, the data produced is compatible with older BodyGuards (serial numbers less than 53508).
FP	00 = Push and Go OFF 01 = Push and Go ON	Function Push and Go - This setting allows the user 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.
FR	00 = Normal Operation 01 = Eagle is Disabled	Function Knowing Act - This setting allows the user the ability to ignore the Eagle and Approach SuperScan inputs when the door is closed. A setting of 00 enables the Eagle and SuperScans at all times and a setting of 01 allows for the knowing act state.
Fb	00 = No Beams 01 = Beams Installed	Function Beams - This setting allows the use of SBK-30 photoelectric beams. A 00 indicates the SBK-30 beams are not installed. A 01 indicates the SBK-30 beams are installed.

7 Programming the CUHub-R™ (continued)

DISPLAYS	DESCRIPTION	
Fo	00 to 30 - Timeout in Seconds (07 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 or other 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.

2 Operating Parameters

- The second set of parameters (accessible by the function increment button) provides a set of real-time operating parameters for troubleshooting. 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. Once one of these operating parameters has been selected, the display will remain active on that parameter and **NOT** timeout, thus **NOT** saving any programmed parameters until one of the programming parameters has been selected.

DISPLAYS	DESCRIPTION
rn	Run Mode – Shows status of outputs: Rc - Activation Output SF - Safety Output SS - Stall Output ----No 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: RE - Activation Eagle RP - Activation Push Plate RS - Activation Swing Side sb - Safety BodyGuard SP - Safety Photoelectric Beams SS - Safety - Stall side door-mounted sensor ----No Output
dc	Display Controller – Shows which CU2 control inputs are active: ho - Home bc - Backcheck sn - Sync ----No Output

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

NOTE: Make sure the display is inactive with 'CU' before completing all work.

8 Documentation

- Document all work. For future reference, be sure to record the CUHub-R™ 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-R™.
- 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. Ensure to supply the owner of the equipment with an AAADM owners manual and overview of the standard.
- Be sure to obtain signatures on your work order for all work accomplished.

9 Troubleshooting

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
CUHub-R™ 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 <i>FP</i> is set incorrectly	Check function <i>FP</i> 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 <i>FI</i> and Relay Configuration.
	CUHub-R™ <i>FL</i> setting not correct.	CUHub-R™ <i>FL</i> setting and BodyGuard setting must correspond.
	CUHub-R™ function <i>FR</i> set to 01 when no AUX is used.	Function <i>FR</i> set to Knowing Act 01 without AUX inputs used i.e. Push Plates, etc
	SBK-30 Beams misaligned.	Align Beams.
	SBK-30 Beams Faulty.	Replace SBK-30 Beams.
	SBK-30 on CUHub-R™ <i>FP</i> set to 00.	Set SBK-30 on CUHub-R™ to 01.
	SuperScan wiring not correct.	Correct SuperScan wiring as needed.
	SuperScan no power to SuperScan.	Check wiring.
	SuperScan JP 2 in wrong position.	Set to Default.
	SuperScan Bad	Replace SuperScan.
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 <i>d5</i> at module.
	SBK-30 Beams misaligned.	Align Beams.
	SBK-30 Beams Faulty.	Replace SBK-30 Beams.
	SBK-30 on CUHub-R™ <i>FP</i> set to 00.	Set SBK-30 on CUHub-R™ to 01.
	SuperScan wiring not correct.	Correct SuperScan wiring as needed.
	SuperScan no power to SuperScan.	Check wiring.
	SuperScan JP 2 in wrong position.	Set to Default.
	SuperScan Bad.	Replace SuperScan.
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 <i>FI</i> if needed at BodyGuard.
		Check and change <i>FL</i> if needed at CUHub-R™.
		Check data wires. Harness could be a problem.

10 Company Contact



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

