Introduction

This document contains:

- The wiring instructions needed to connect the 4098-9019 Motorized Infrared Optical Beam Smoke Detector System to a compatible Simplex Fire Alarm Control Panel (FACP).
- The Beam Detector programming instructions for the FACP programmer.

For information pertaining to the installation, alignment, local controller programming and operation, please consult the other documents included with this product.

Compatibility

This product is compatible with:

- 4100ES and 4010ES Control Panels / System Firmware 2.02 or higher.
- 4007ES Control Panel / all revisions.
- 4100ES System Power Supplies (SPS) / Firmware 3.12.05 or higher.
- 4010ES Extended System Supply (ESS) / all revisions.
- 4010ES Main System Supply (MSS) / Firmware 3.12.05 or higher.
- 4010ES Main System Supply 2 (MSS2) / all revisions.
- Separate IDNet/IDNet+/IDNet 1+ modules / Firmware 3.12.05 or higher.
- IDNet communications PCC Chip 0742-146 / Revision 2.02.03 or higher.
- IDNet 2+2 / all revisions.

Note: Refer to Appendix A: Compatible Module Identification for additional reference.

Electrical Specifications

The following consumption figures are based are on a 2 detector system across the operating voltage range.

- Voltage: 14 VDC - 36 VDC
- Maximum operating current: 50 mA

Wiring Specifications

Figure 1 depicts the wiring diagram that must be used when adding this device to an IDNet circuit.

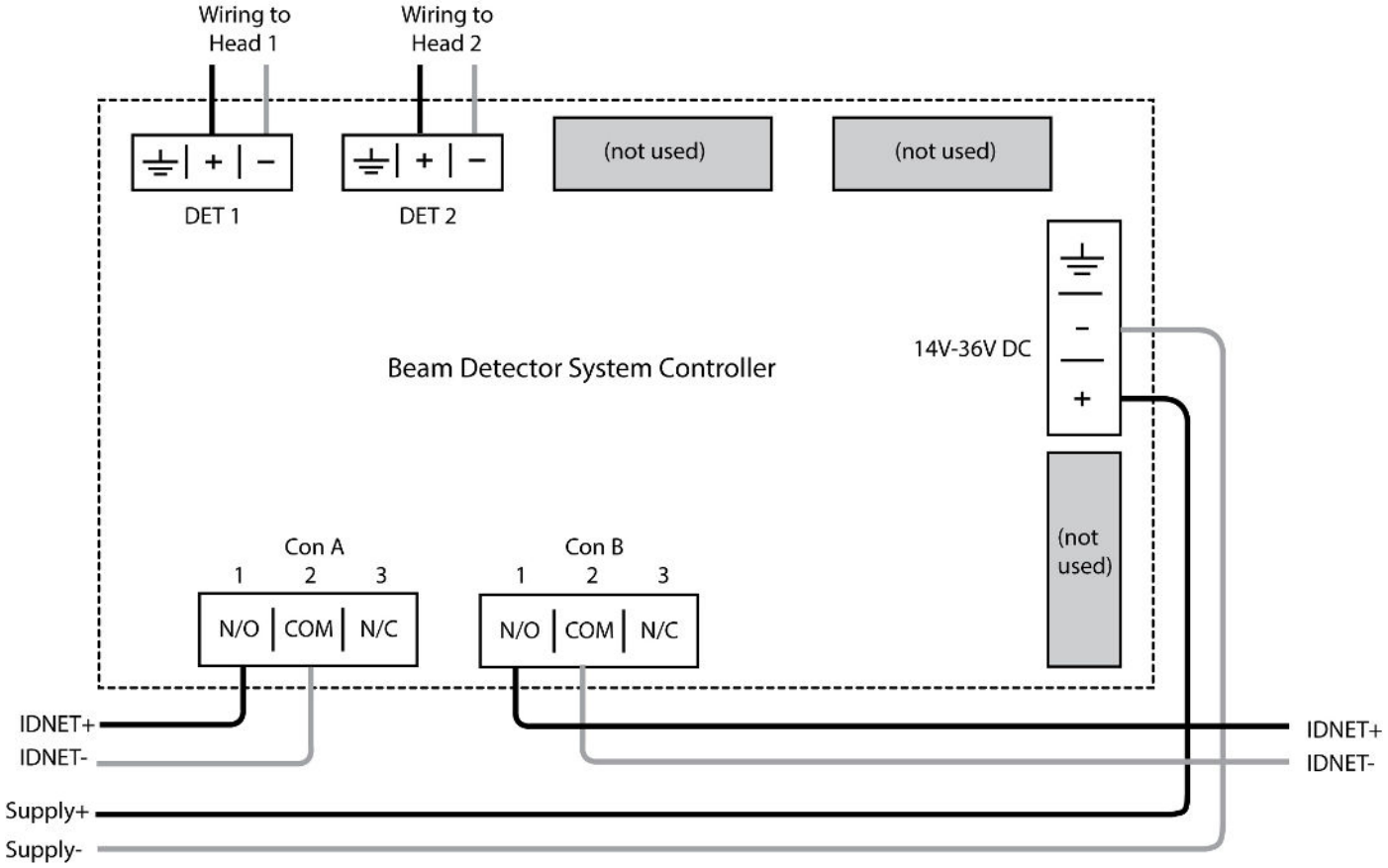


Figure 1: Device Wiring on a IDNet Circuit

Consult Table 1 for the type of wiring needed to connect the FACP to the Beam Detector System Controller.

Table 1: Wiring Type

Card Type	Wiring Type	Reference Manual
IDNet	14 AWG -18 AWG Shielded Twisted Pair	574-800
IDNet+	14 AWG -18 AWG Twisted Pair	579-786
IDNet1+	14 AWG -18 AWG Twisted Pair	579-1014
IDNet 2+2	14 AWG -18 AWG Twisted Pair	579-1169

Note: Refer to the appropriate IDNet Card manual for the maximal wiring distances.

IDNet LEDs and Addressing

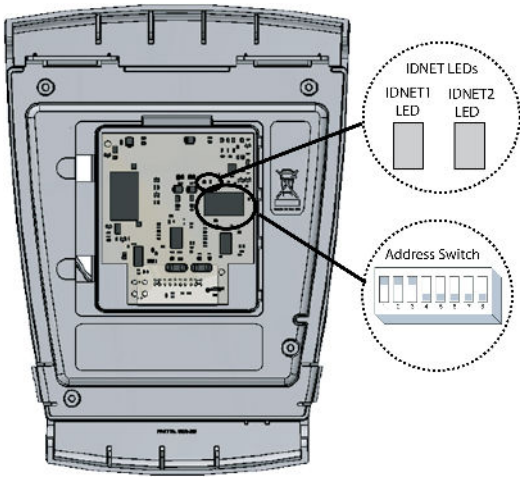


Figure 2: LED and Address Switch Location

LEDs:

Remove the Beam Detector's cover to access the LEDs.

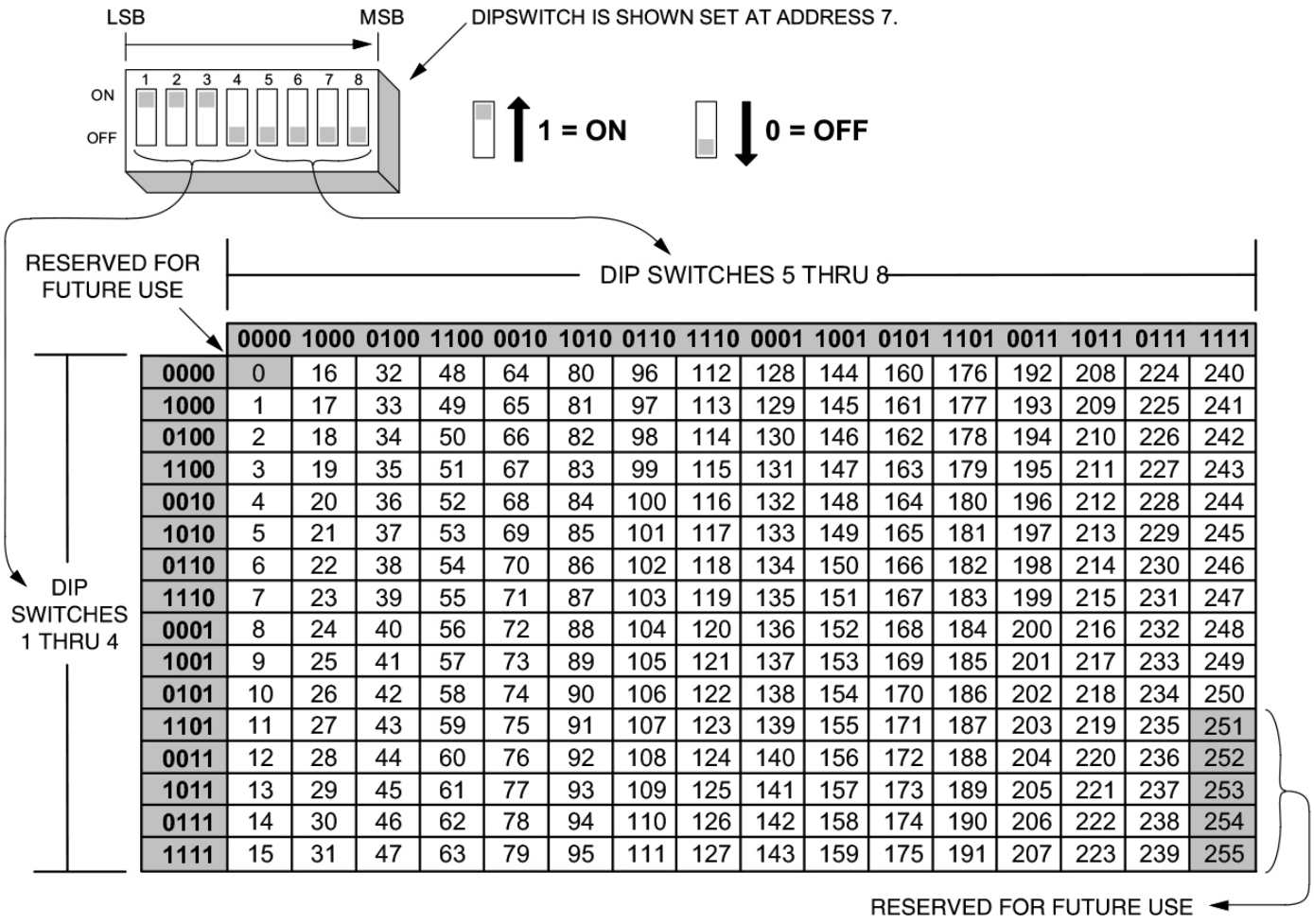
- IDNET1: This red LED corresponds to the head connected to DET1 on the device. When lit, it indicates a trouble or an alarm on the DET1 channel.
- IDNET2: This red LED corresponds to the head connected to DET2 on the device. When lit, it indicates a trouble or an alarm on the DET2 channel.

Addressing:

This device has a unique address that is set via an eight-position DIP switch. Position 1 is the least significant bit (LSB) and position 8 is the most significant bit (MSB).

To set the address:

1. Retrieve the address from the ES Programmer. Use the first address assigned by the programmer if multiple addresses are required for the device (see Programming and Editing the device point).
2. Use a small screwdriver or pen to set the switches to the address.
3. Record the set address.



	0000	1000	0100	1100	0010	1010	0110	1110	0001	1001	0101	1101	0011	1011	0111	1111
0000	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1000	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
0100	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
1100	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
0010	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
1010	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
0110	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
1110	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
0001	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
1001	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
0101	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
1101	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
0011	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
1011	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
0111	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
1111	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

Figure 3: Setting the Address

Programming and Editing the device point

To program or edit this device from the ES Programmer, follow these steps:

1. Open an already existing job or create a new one.
2. Click on the Programmer's **Hardware** tab.
3. Click on the **Grid View** subtab at the bottom of the **Hardware** tab field.
4. Go to the IDNet channel that you are adding the device to and double click on it. The card properties window will open.
5. Click on the card's **Point Editing** tab.

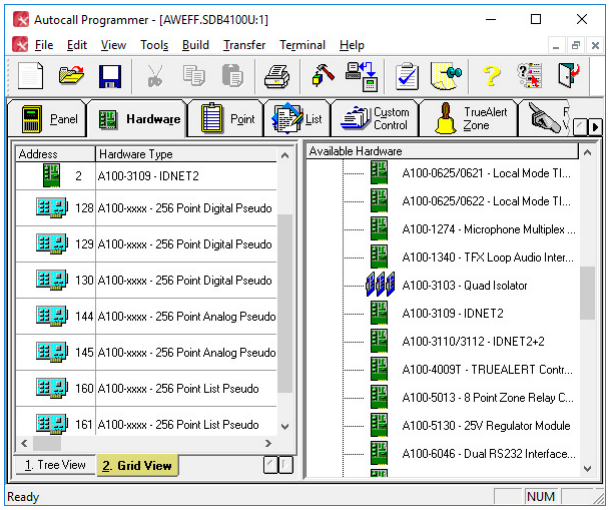


Figure 4: Accessing the IDNet Channel

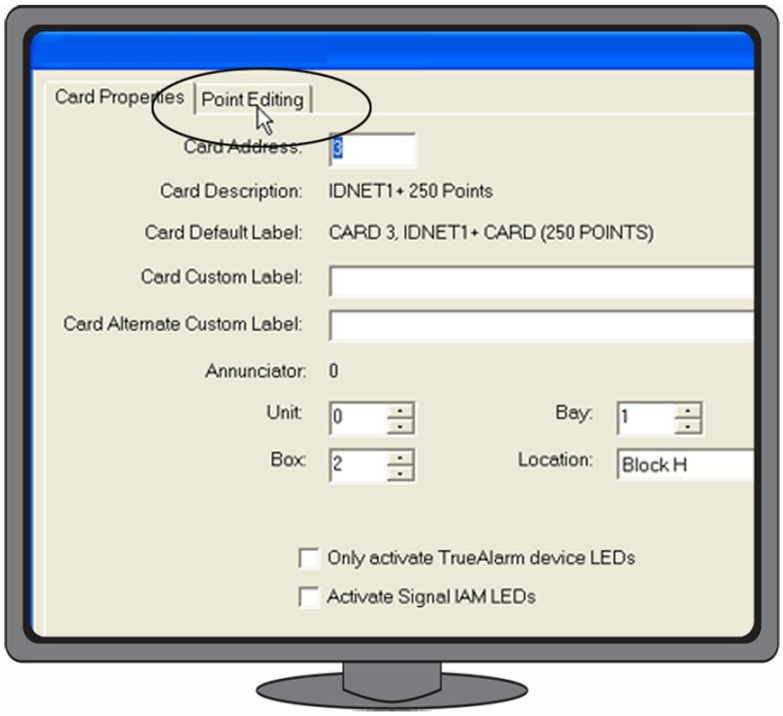


Figure 5: Accessing the Point Editing Tab

6. Use the options in the Point Editing tab, shown in Figure 6, to edit the following:

- ***Device Type***. Click on the Device Type drop down list box and select **BEAM**.
- ***Point Type***. Click on the Point Type drop down list box and select a point type.
  - Select ***FBEAM*** for the Beam Detector
  - Select ***LSBEAM*** for the Latched Supervisory Beam Detector
  - Select ***UBEAM*** for the Utility Beam Detector
- ***Custom Label.*** Assign a customized label to the device point.
- ***Alternate custom Label.*** Define an alternate label of up to 40 characters for the point, typically the function, location, or other descriptive text.
- ***PNIS Code.*** Allows selection of the PNIS code for the point*.
- ***Primary Action message***. This selection assigns a Primary State Action Message to the point*.
- ***Trouble Action message***. This selection assigns a Trouble Action Message to the point*.

Note: For more information on point editing consult the ES Programmer manual.

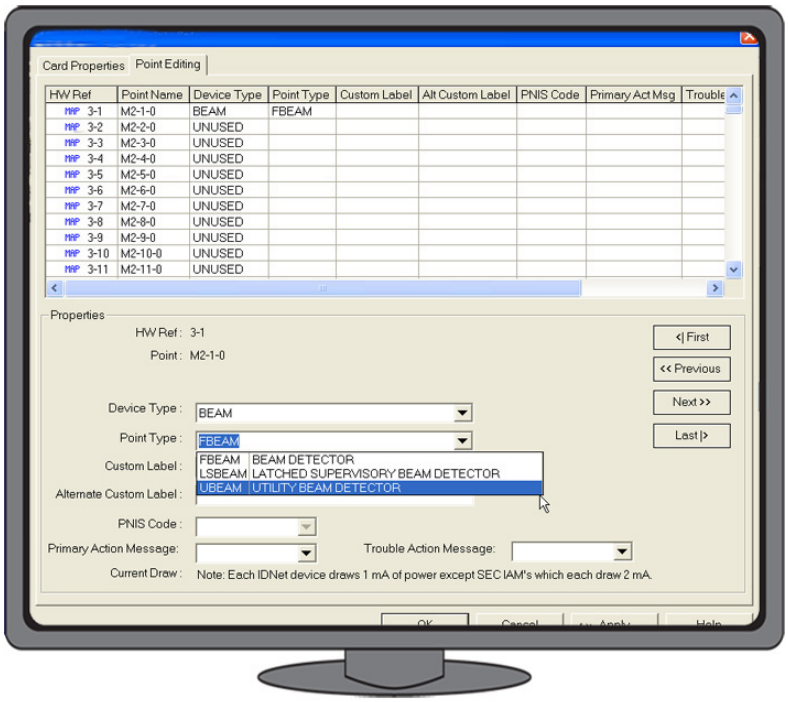


Figure 6: The Point Editing Tab

7. Setting the address:

The Beam Detector System requires two addresses per device:

- One address for the device and the "first" head. This address will also be the one associated with the address switch.
- One address for the second head on the device reporting to the system.

Both of the addresses for one same device must be added consecutively when programming the job. However, each head can be programmed for a separate point type, either "fire", "latched supervisory", or "utility".

Note: A warning pop-up will appear with the notification that the device requires more than one address, prompting you to click **Yes** if you wish to continue. You must click on **Yes** in order to install the device.



Figure 7: Multiple Address Prompting

Panel Operation

Each device head will appear on the FACP as an IDNet BEAM device type.

Since there are no trouble or alarm conditions specific to the system controller, all information can be reported against one of the heads. When the Beam Detector controller is physically missing or has failed, each head will have a "no answer" trouble for a total of up to two troubles.

The following operations can be performed from the FACP:

Table 2: Addressable Beam Detector FACP Operations

Operations	Status Name	State	Point Type
Acknowledge the Beam device from the panel	n/a	n/a	n/a
Disable and enable each head	n/a	Enabled / Disabled / Trouble	Trouble
Turn off and on each device LED	n/a	n/a	n/a
Measure the signal strength**	Signal Strength%	0 to 100	n/a
Measure the compensation level**	Compensation Level	-50 to 205	n/a
Edit the almost dirty threshold	Almost Dirty Threshold	-50 to 205 (default = 100)	n/a
Report the smoke status	Smoke Status	NORMAL, FIRE	Fire
Report the device communications*	Device Communications	NORMAL, TROUBLE	Trouble
Report a rapid obscuration trouble*	Rapid Obscuration	NORMAL, TROUBLE	Trouble
Report the self aligned status	Self Aligned status	FALSE, TRUE	n/a
Report the almost dirty status	Almost Dirty	FALSE, TRUE	n/a
Report the excessively dirty trouble*	Excessively Dirty	FALSE, TROUBLE	Trouble
Report a summary trouble*	Summary Trouble	NORMAL, TROUBLE	Trouble
Toggle the alarm test output	Alarm test	OFF, ON	ON triggers fire
Change the priority of the device	Priority	0 to 15	n/a
Add the device to the install mode list	n/a	INSTALL MODE	n/a
Edit the smoke threshold***	Smoke Threshold%	10 – 60 (default = 35)	n/a
***** This operation can also be completed or viewed at the Beam System Controller.			
****** This operation can be viewed at the FACP but must be edited at the Beam System Controller.			
******* The smoke threshold can also be set through the Custom Control option in the ES Programmer. See the example for a sample equation. Consult the *ES Panel Programmer Manual* 547-849 for more information on custom controls.	Example:[INPUTS] STATUS ON A34 I ANALOG I TIMER I SYSTEM STARTUP PULSE TIMER [END INPUTS] [OUTPUTS] SET_NUMERIC_OUTPUT 1 30 PRI=9,9 M1-1-0 I BEAM I FBEAM I 1ST BEAM DETECTOR [END OUTPUTS]		

When viewing the Beam Detector information through the FACP interface, the following information can be accessed by selecting the device on the panel and then using the “More Info” button.

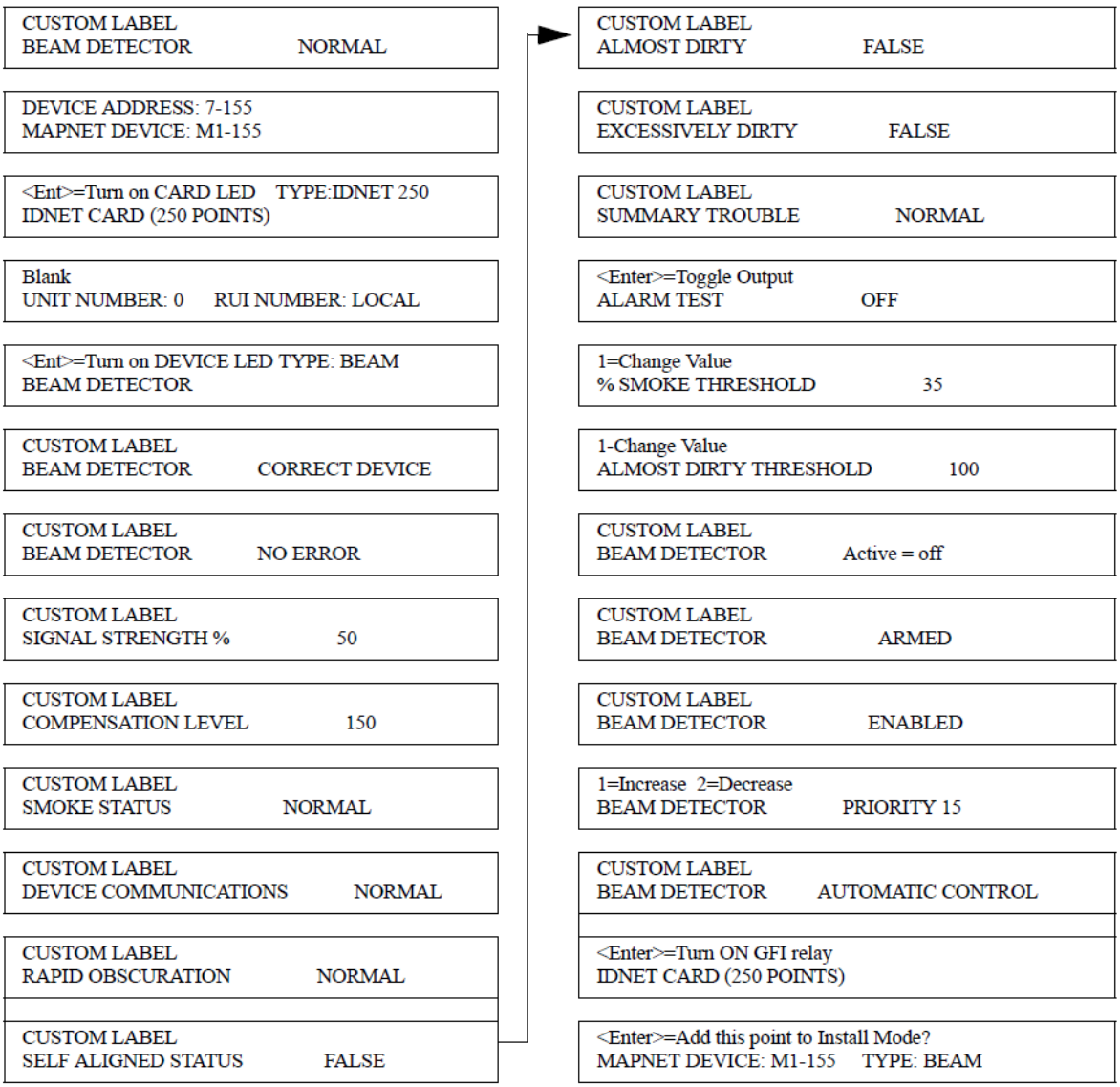


Figure 8: Beam Detector Information

Troubles Reported

The following trouble conditions are monitored by the FACP:

IDNet Troubles	Beam Detector Troubles
No Answer	Device Communications Status
Bad Answer	Rapid Obscuration
Wrong Device	Summary Trouble
Disable Trouble	Excessively Dirty
Manual Override Trouble	

Part Replacement

For replacement parts contact your certified Simplex representative.

Appendix A: Compatible Module Identification

- 4100-3101 566-044 IDNet Module – 250 Devices
- 4100-3104 566-329 IDNet Module – 127 Devices
- 4100-3105 566-330 IDNet Module – 64 Devices
- 4100-5111 566-071 Expansion System Pwr Supply (SPS)
- 4100-5112 566-072 Expansion System Pwr Supply (SPS)
- 4100-5113 566-071 Expansion System Pwr Supply (SPS)
- 4100-3106 566-421 4100-3106 IDNet Module – QuickConnect2
- 4100-3107 566-675 4100-3107 IDNet+ Module – 246 Devices, Quad Isolator
- 4010-9907 566-883 4010-9907 IDNet+ Module – 246 Devices, Quad Isolator
- 650-442 566-876 Main System Supply with IDNet+ (4010ES)
- 650-442 566-1104 Main System Supply with IDNet2 (4010ES)
- 650-1300/1301 566-1025 Extended System Supply (4010ES)

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