

1. **Insert the correct 'TransKey'.** This coded electronic key sets the unique operating parameters for a given control system. These parameters include, address code, operating frequency and function key (pushbutton) configurations. Note that an OCU will not operate without a 'TransKey' installed.

NOTE: If your controller uses the bottom row of keypad switches for 'ON', 'OFF', and 'STOP' functions, proceed directly to step 5 of this procedure.

2. **Set red STOP Switch to 'RUN'.** Pulling this switch upward enables power to be applied to the OCU. If the switch has been pushed down to the 'STOP' position, you will first have to unlatch the switch knob by rotating in a clockwise direction.
3. **Set ON/OFF Switch to 'ON'.** Rotating this switch clockwise applies power to the OCU. If the multicolor STATUS LED illuminates green and two short beeps are heard, the OCU is ready for use and a power up message has been sent to the target MCU. The targeted MCU will respond by energizing the mainline contactor of your controlled machine.



WARNING:

BEFORE ATTEMPTING TO USE THE REMOTE CONTROL SYSTEM, VERIFY THE TARGET CRANE OR MACHINE YOU WISH TO OPERATE IS UNDER THE DIRECT COMMAND OF YOUR OCU. THIS IS ACCOMPLISHED BY OPERATING A NON-MOTION OCU FUNCTION SUCH AS A HORN OR LAMP AND OBSERVING THAT THE RESPECTIVE FUNCTION ON THE TARGETED CRANE OR MACHINE RESPONDS.

FAILURE TO IMPLEMENT THE ABOVE MAY RESULT IN PERSONAL INJURY OR DEATH TO PERSONNEL AND DAMAGE TO EQUIPMENT.

4. **Press a non-motion Function Key (pushbutton)** such as a horn or lamp and observe that the targeted crane or machine responds. The OCU is now fully operational and transmitting a signal as indicated by the green 'TRANSMIT' LED flashing. Operate the keypad control and auxiliary pushbuttons as required, remembering that each pushbutton must be maintained in order for the function to continue to operate. Any or all functions may be operated simultaneously if the controlled machine permits such operation.

NOTES: A system STOP may be initiated at any time during the control function by pushing the red STOP switch downwards. It should be further noted that in “pitch and catch” control operations where two OCUs are used, only the OCU that sets the ‘STOP’ condition will re-set the ‘RUN’ condition.

When all control functions have been completed, we recommend you initiate a system STOP (push red STOP switch down) before setting the ON/OFF switch to the ‘OFF’ position.

5. Alternative Power-up procedure using bottom row keypad switches:

Referring to Figure 15 overleaf:

- a. Press the ‘ON’ keypad pushbutton once and observe the multicolor STATUS LED illuminates red.
- b. Press the ‘STOP’ keypad pushbutton once (1st & 2nd step) and observe the multicolor STATUS LED illuminates orange.
- c. Press the ‘ON’ keypad pushbutton once again and observe the multicolor STATUS LED illuminates green..

NOTE: The above Power-up sequence must be completed within 10 seconds.



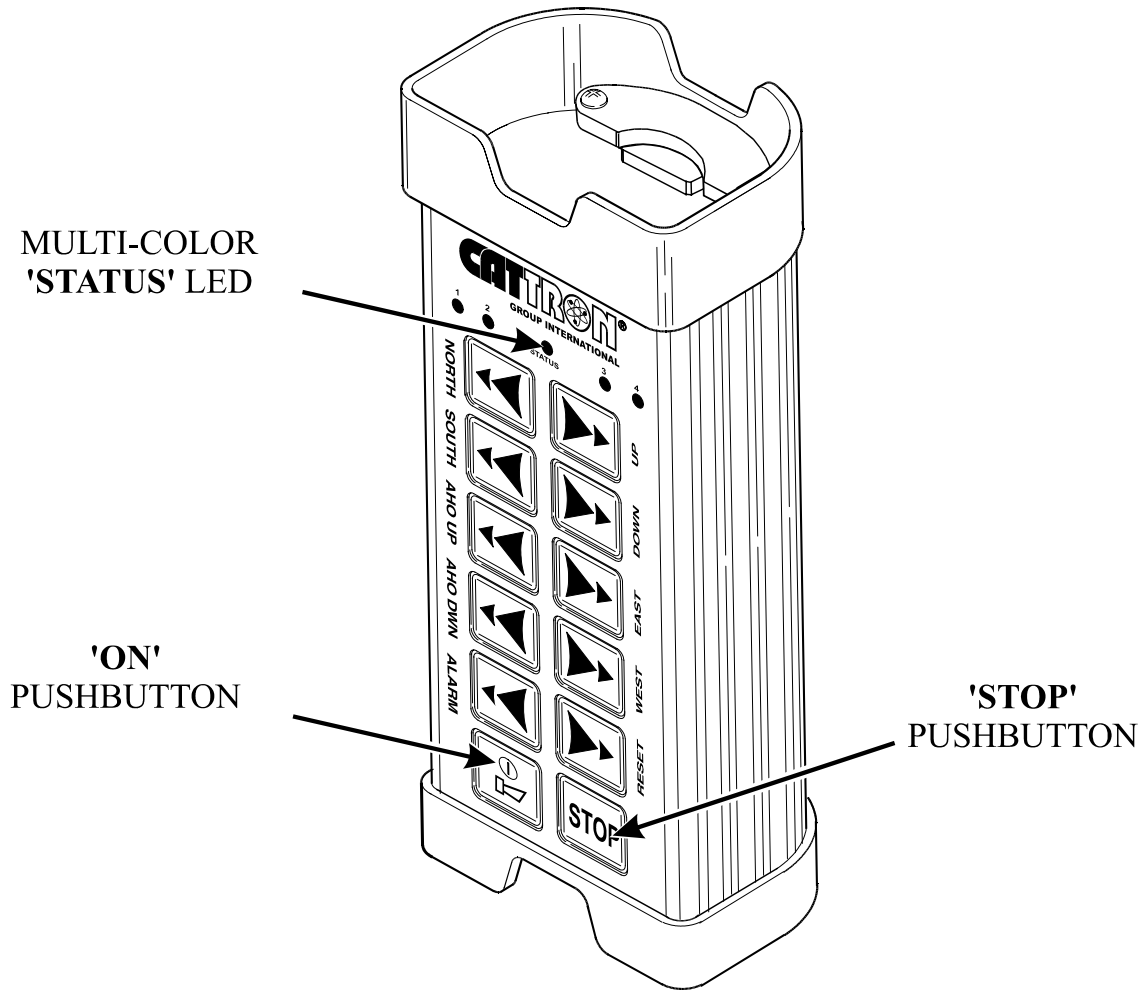
WARNING:

BEFORE ATTEMPTING TO USE THE REMOTE CONTROL SYSTEM, VERIFY THE TARGET CRANE OR MACHINE YOU WISH TO OPERATE IS UNDER THE DIRECT COMMAND OF YOUR OCU. THIS IS ACCOMPLISHED BY OPERATING A NON-MOTION OCU FUNCTION SUCH AS A HORN OR LAMP AND OBSERVING THAT THE RESPECTIVE FUNCTION ON THE TARGETED CRANE OR MACHINE RESPONDS.

FAILURE TO IMPLEMENT THE ABOVE MAY RESULT IN PERSONAL INJURY OR DEATH TO PERSONNEL AND DAMAGE TO EQUIPMENT.

6. **Press a non-motion Function Key (pushbutton)** such as a horn or lamp and observe that the targeted crane or machine responds. The MKU controller is now fully operational and transmitting a signal as indicated by the multicolor STATUS LED flashing green. Operate the keypad control and auxiliary pushbuttons as required, remembering that each pushbutton must be maintained in order for the function to continue to operate. Any or all functions may be operated simultaneously if the controlled machine permits such operation.

Figure 15. Alternative MKU Controller - Power-up using bottom row keypad switches

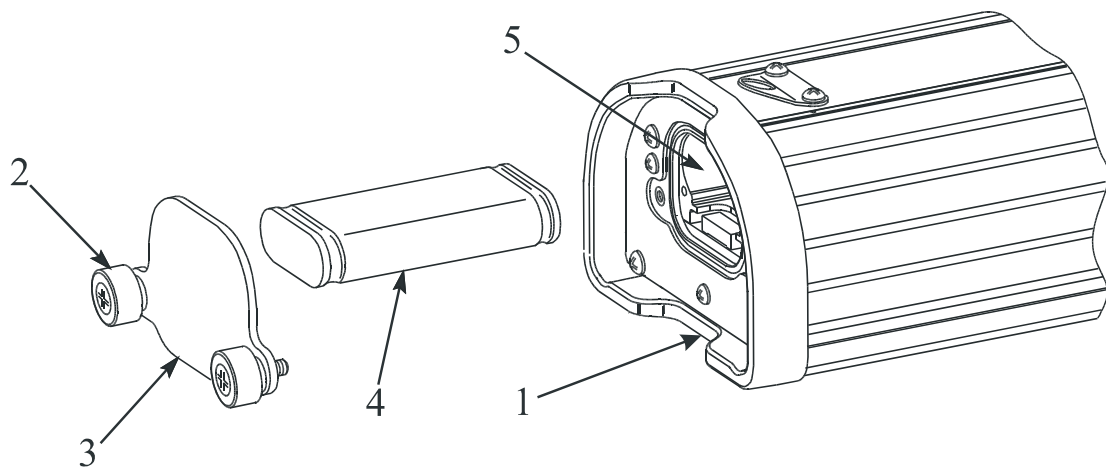


6.4 CHANGING THE BATTERY PACK

Referring to Figure 16 below, remove the battery pack as follows:

- a. Lay MKU controller (1) face down.
- b. Release two knurled thumbscrews (2) and withdraw cover-plate (3).
- c. Withdraw battery pack (4) from battery compartment (5).

Figure 16. Battery Pack, removal and replacement



Referring to Figure 16 above, replace the battery pack as follows:

- a. Position battery pack (4) with the four contact strips facing down and forwards. Install battery pack (4) by pushing fully home inside the battery compartment (5).
- b. Install cover-plate (3) and secure by evenly hand tightening two knurled thumbscrews (2). Do not overtighten - a snug fit is all that is necessary.




6.5 CHARGING THE BATTERY PACK

NOTES: Do not re-charge the battery pack until the OCU's LED indicates 'low battery'.

A CATTRON® External Battery Charging Unit (Part # 70C-0003) will be required for battery charging or conditioning.

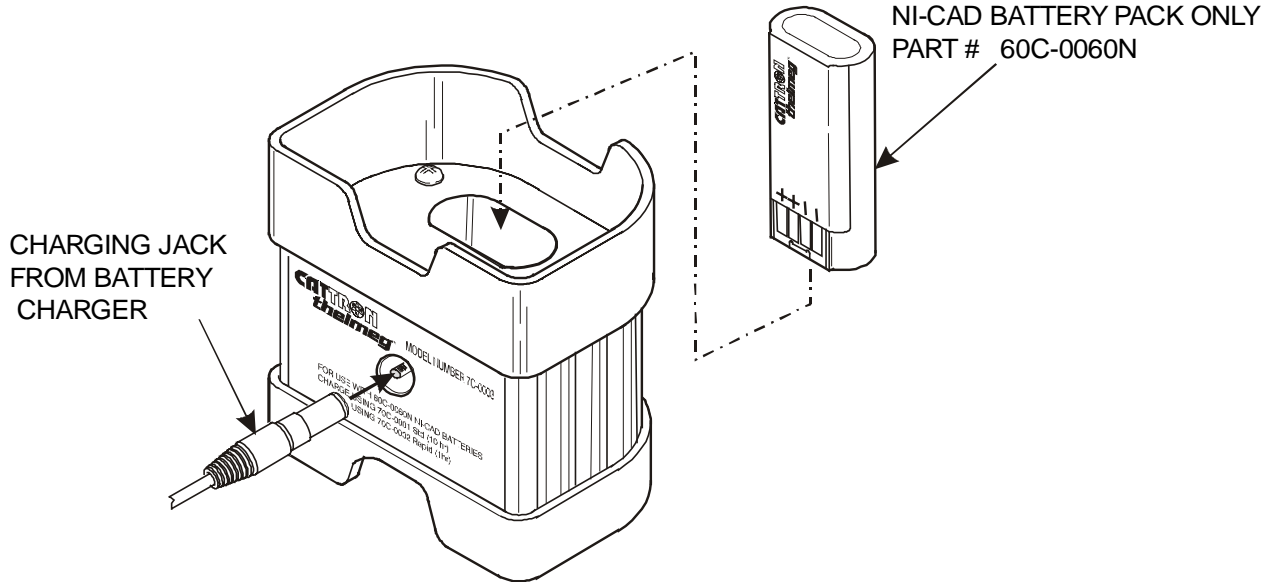
A CATTRON® 'Standard' **Battery Charger** (Part # 70C-0001) enables a Ni-Cad battery pack to be charged within a period of 10 hours from a 110-120 VAC mains supply. Standard rate chargers include a yellow LED to indicate charge mode.

A CATTRON® 'state of the art' **Battery Conditioner** (Part # 70C-0002) is also available for use with Ni-Cad battery packs only. For details, refer to Battery Pack Conditioning, below.

	<p>CAUTIONS: CATTRON® MKU Battery Conditioners and External Charging Units are designed for use with CATTRON® Ni-Cad Battery Packs only. Battery Packs must be removed or disconnected from Battery Conditioners/ External Charging Units within 48-hours of achieving the fully charged state. Failure to comply with these Cautions may result in equipment and/or battery damage and will void our warranty.</p>
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Battery Pack Charging: To charge a Ni-Cad Battery Pack, refer to Figure 17 opposite and connect the CATTRON® Battery Charger to the mains power supply. Install the charging jack to the external battery charging unit socket. Simply drop the battery pack into the battery charging unit, ensuring the battery pack contacts are positioned as shown. When the Ni-Cad battery pack is properly installed, the appropriate charging indicator on the connected battery charger will illuminate.

Figure 17. External Ni-Cad Battery Pack Charging



6.6 CONDITIONING THE BATTERY PACK

A 'state of the art' CATTRON[®] Battery Conditioner (Part # 70C-0002) is available for use with Ni-Cad battery packs only.

The Battery Conditioner automatically conditions the battery pack by first discharging it at 750mA for 1.5 hours before applying a rapid charge for 1.2 hours. The conditioner incorporates end of charge detection circuitry to accurately sense when the battery pack is fully charged. When this condition has been detected, the conditioner switches to a 'trickle' mode that keeps the battery pack fully charged and ready to use for up to 48-hours. To prevent damage to the battery pack, it should be removed from the conditioner within 48-hours of achieving a fully charged state.

The CATTRON[®] Battery Conditioner incorporates an LED that indicates status as follows:

Amber Color – indicates the battery pack is being discharged.

Red Color - indicates the battery pack is being charged at a rapid rate.

Green Color - indicates the battery pack is fully charged and that a 'trickle' charge is being applied to maintain the fully charged state. The battery pack is ready for use and should be removed from the conditioner within 48-hours.



CAUTIONS:

CATTRON[®] MKU Battery Conditioners and External Charging Units are designed for use with CATTRON[®] Ni-Cad Battery Packs only.

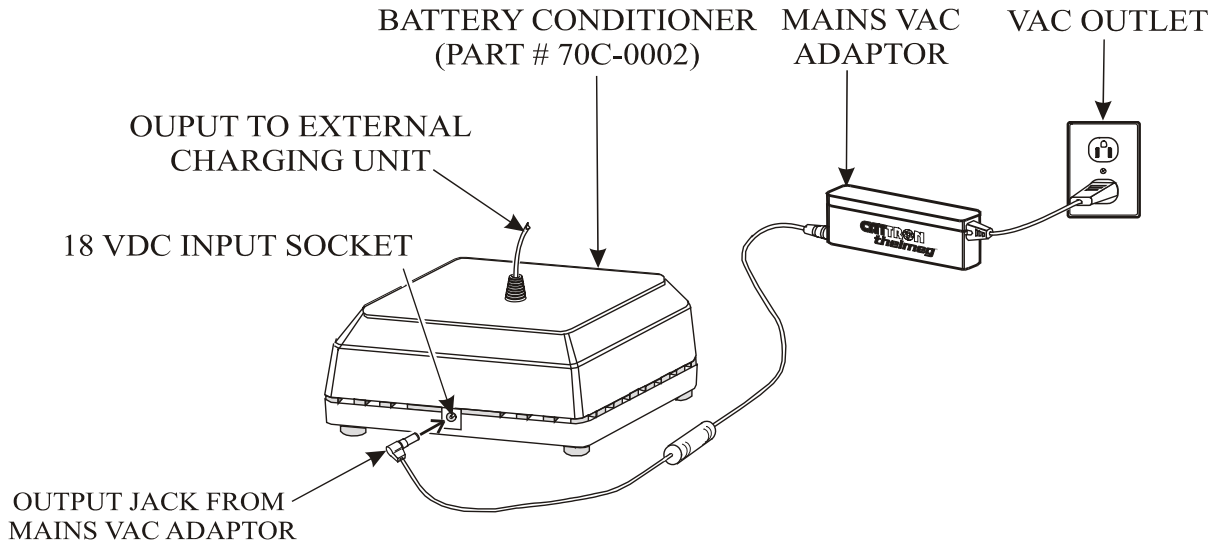
Battery Packs must be removed or disconnected from Battery Conditioners/ External Charging Units within 48-hours of achieving the fully charged state.

Failure to comply with these Cautions may result in equipment and/or battery damage and will void our warranty.

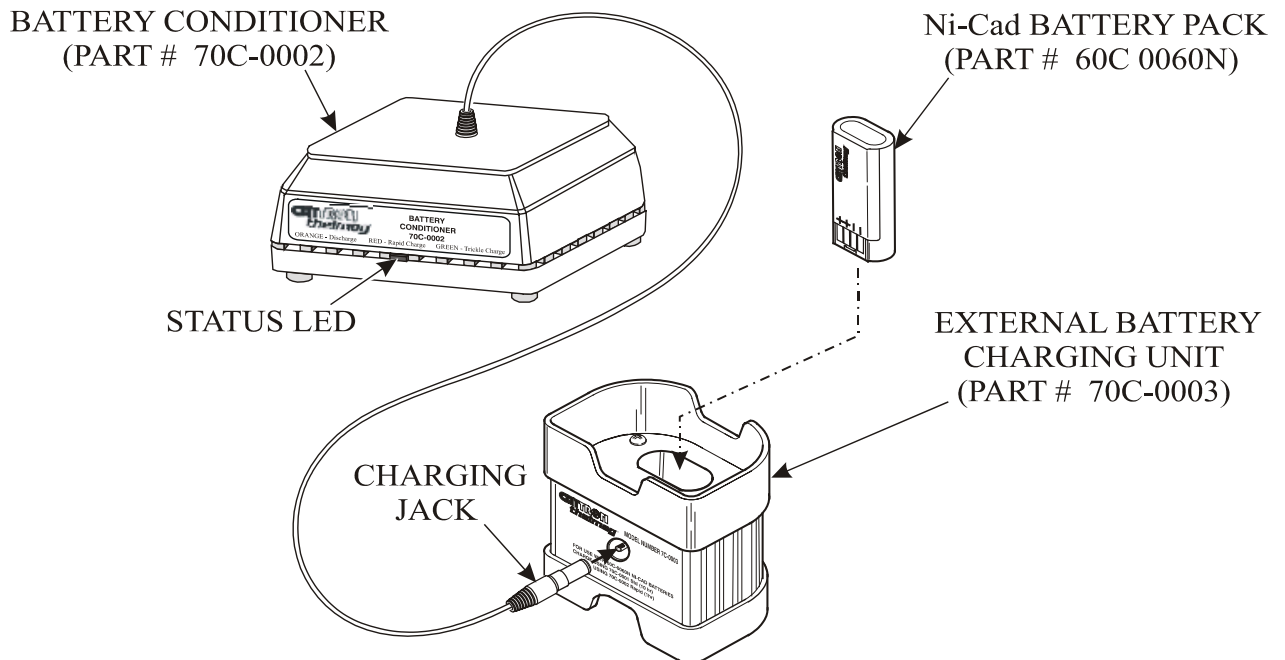
The Battery Conditioner includes a Mains VAC Adaptor that enables the conditioner to operate from mains supply voltages between 100 and 240 VAC @ 50/60 kHz. Referring to Figure 18 opposite, this adaptor is connected as shown. Similarly, when connecting the Battery Conditioner to the External Battery Charging Unit, refer to Figure 18 for the appropriate connections.

Figure 18. Battery Pack Conditioning – interconnection details

1. REAR VIEW - CONNECTING THE VAC ADAPTOR



2. FRONT VIEW - BATTERY PACK CONDITIONING/CHARGING

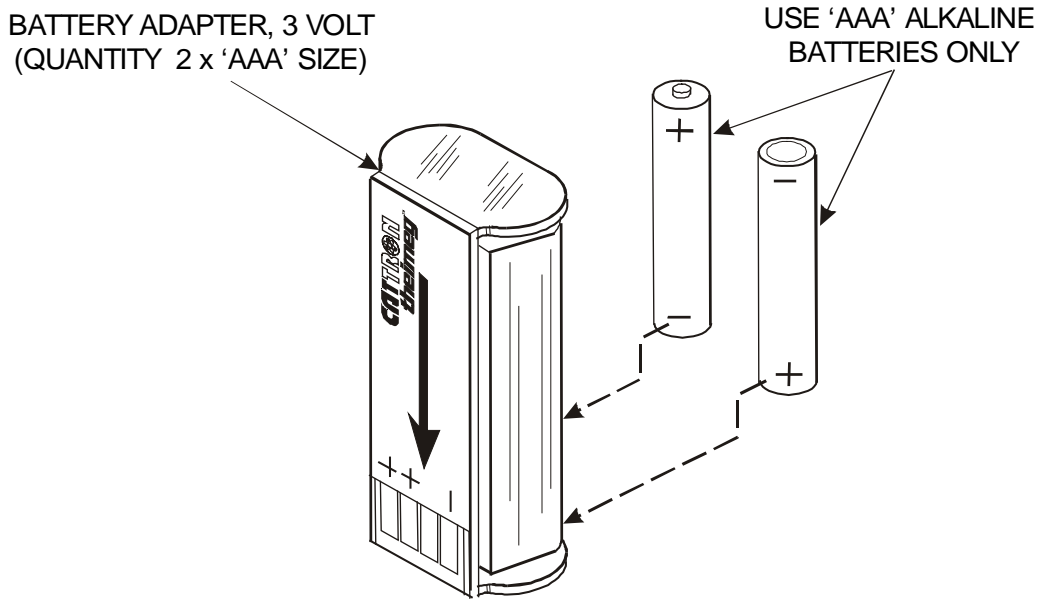


6.7 ALKALINE BATTERY ADAPTER

CAUTION:
CATTRON® MKU Battery Adapters are designed for use with non re-chargeable 'AAA' size Alkaline Batteries only. Carbon/Zinc, Lithium, or Ni-Cad Batteries are not to be used with this adapter. Damage to batteries will occur if this adapter is used for battery charging.

Referring to Figure 19 below, a CATTRON® Battery Adapter is available which will accept two 'AAA' size Alkaline 1.5-volt batteries only. It should be noted that when using 'AAA' size Alkaline 1.5-volt batteries with this adapter, battery life will only be 40% of that provided by a CATTRON® Alkaline Battery Pack.

Figure 19. 'AAA' Alkaline Battery Adapter



7 MAINTENANCE INSTRUCTIONS

Unless customer technicians have received formal maintenance training from CATTRON[®], our maintenance philosophy is that inoperative OCUs and MCUs be returned as complete units to our workshops for repair. This is because each system has been customized at our factory for a particular application, thus it is highly unlikely that two control systems will be the same.

NOTE: When returning an OCU for repair, the original 'TransKey' supplied with the unit should be removed and retained for use with your spare unit.

7.1 PREVENTIVE MAINTENANCE

Preventive maintenance for MKU systems is minimal because they are extremely durable and reliable units. Preventive maintenance is limited to the following:

Daily Visual Inspection:

Before use, visually inspect the OCU and MCU for cleanliness, physical damage, and security of external parts (screws, switches, rubber grips, etc.). CATTRON[®] emphasizes that regular visual inspections not only mean quickly locating a source of potential problems, but also may prevent serious problems from developing later.

Cleaning the Transmitter:

The OCU should be cleaned with a moist cloth (if necessary, with a little washing-up liquid), then wiped dry with a clean paper towel. **DO NOT IMMERSE THE OCU IN WATER.**

Functional Check:

A functional check is accomplished by operating the OCU in accordance with the Operating Procedures in Para. 6.3 on page 32 of this manual. Insure all system control functions are fully operational.

7.2 TRANSMITTER FAULT MESSAGES

The OCU has a multicolor STATUS LED indicator that displays the current system status to the operator. When an OCU fault is detected, the multicolor STATUS LED will illuminate red and signal this with a series of blinks. Refer to Table 2 overleaf for the blink sequence and the corresponding fault messages.

Note that any repairs or replacements should only be made by CATTRON[®] trained technicians.

Table 2. OCU Fault Messages - multicolor STATUS LED

LED Indication	Fault	Action
2-flashes	TransKey missing	Plug in the Transkey
3-flashes	TransKey cannot be read	Check the Transkey configuration*
4-flashes	Fault in the low-voltage test during switch-on	Switch the OCU off then on again. Replace/Charge Battery Pack If fault persists, investigate fault* Change Transmitter board* Return OCU for repair
5-flashes	Switch-on sequence not performed correctly	Insure the STOP pushbutton is released Switch the OCU OFF then ON again.
6-flashes	Fault during reading of command initiator	Investigate fault* Change Transmitter board/Keyboard* Return OCU for repair
7-flashes	Incorrect RF module or RF module incorrectly configured	Replace the RF module or correct the configuration* Return OCU for repair
8-flashes	General system fault	Investigate fault* Change Transmitter board* Return OCU for repair
9-flashes	Low Power Supply voltage	Replace/Charge Battery Pack Change Transmitter board* Return OCU for repair
10-flashes	Hardware Fault	Change Transmitter board* Return OCU for repair

*CATTRON[®] customer trained technicians only. If necessary, contact the factory for the replacement part number applicable to your system configuration - refer to the rear cover of this manual for telephone numbers and e-mail addresses.

7.3 RECEIVER FAULT MESSAGES

The MCU has five externally visible LED indicators that display the current system status to the operator. Referring to Figure 20 below and Table 3 overleaf, these are:

Figure 20. MCU System Status LEDs

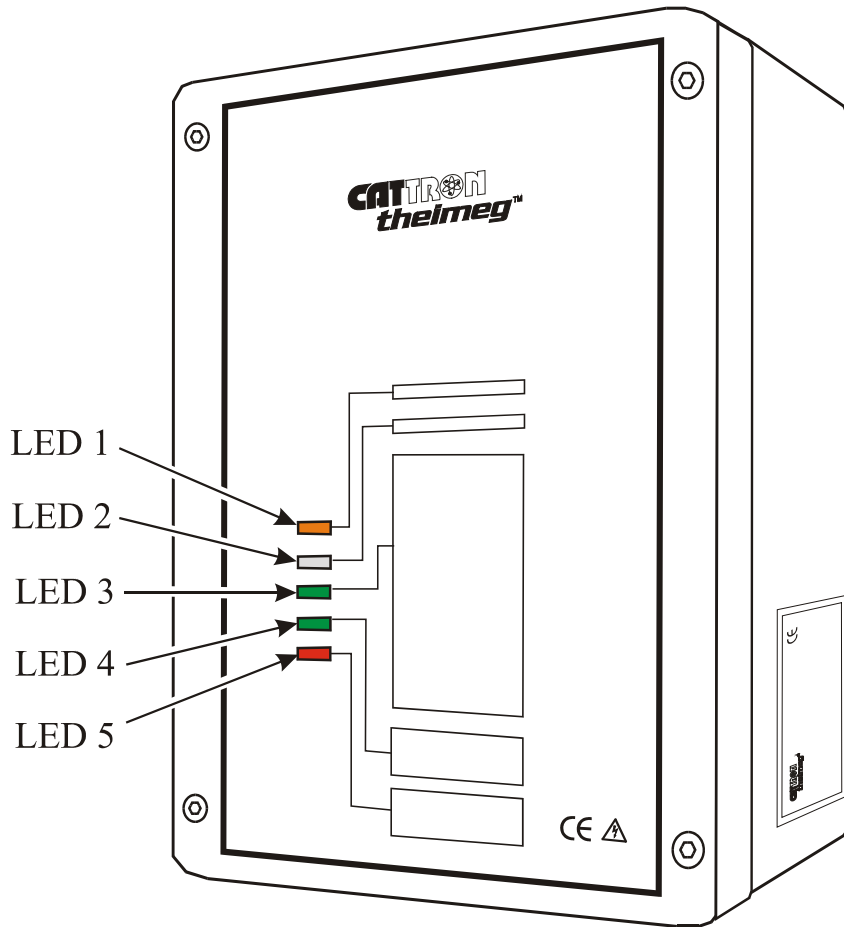
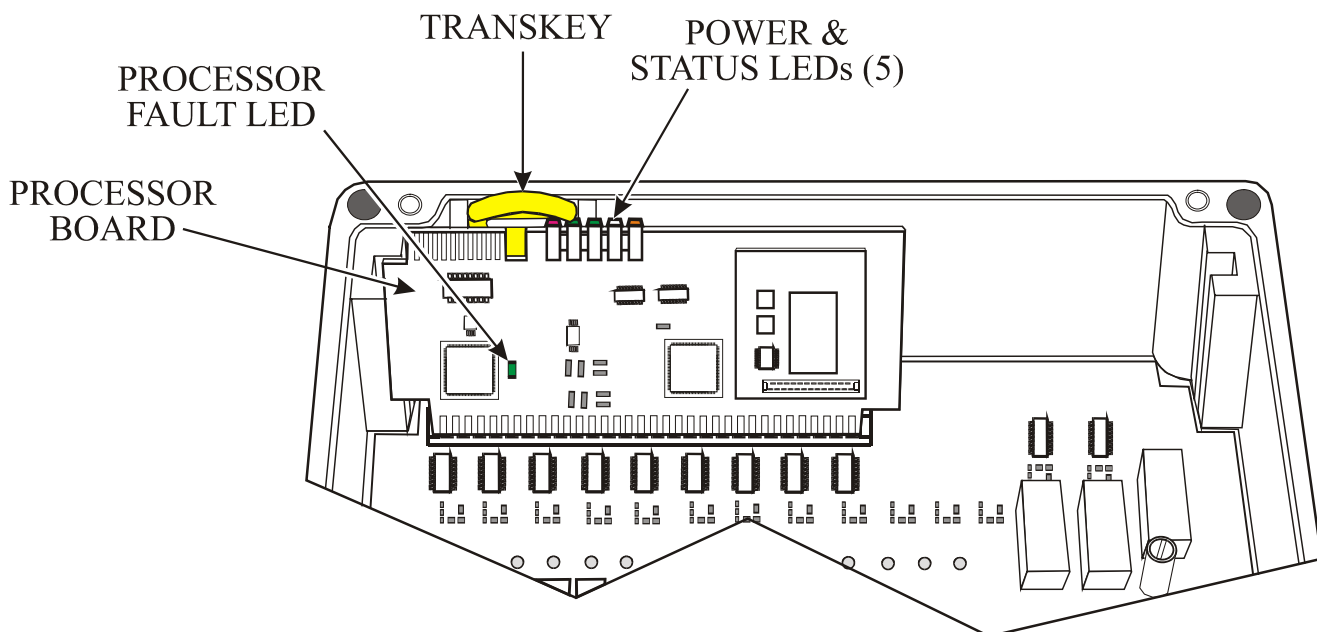


Table 3. MCU External Status LEDs

LED	Description
1. Power On	Illuminates orange when the MCU receiver has voltage
2. Scan Mode Not used when system is configured for fixed frequency	Flashes red/orange in Scan Mode
3. RF Reception	Illuminates green when valid data from the OCU is received and both OPR relays are energized Illuminates orange if valid data from the OCU is received and the OPR relays are de-energized Illuminates red if data from another OCU (with invalid address) is received
4. Command	Illuminates green when commands are received from the OCU (normal condition)
5. Fault indication	Blinks red when the MCU detects a fault (refer to Table 4 below for the blink sequence and the corresponding fault messages).

Referring to Figure 21 below, an additional PROCESSOR FAULT LED indicator is mounted on the MCU processor board and may be viewed by removing the MCU front cover.

Figure 21. MCU Status and Fault LEDs



The PROCESSOR FAULT LED blinks **orange** if the receiver does not detect a transmitter, and **green** when valid RF Transmissions are received. If the processor detects a fault, it will signal this by blinking in **red**. Refer to Table 4 below for the blink sequence and the corresponding fault messages.

Note that any repairs or replacements should only be made by CATTRON[®] trained technicians.

Table 4. MCU Fault Messages

LED Indication	Fault	Action
2-flashes	TransKey missing	Plug in the Transkey
3-flashes	TransKey cannot be read	Check the Transkey configuration*
4-flashes	Fault in the low-voltage test during switch-on	Switch the MCU off then on again. If fault persists, investigate fault* Change Processor Board* Return MCU for repair
5-flashes	OPR relay fault	Check the OPR Relay(s)* Change the OPR Relay(s)* Return MCU for repair
6-flashes	Relay board fault	Investigate fault* Change Relay Motherboard* Return MCU for repair
7-flashes	Incorrect RF module or RF module incorrectly configured	Replace the RF module or correct the configuration* Return MCU for repair
8-flashes	General system fault	Investigate fault* Change appropriate board* Return MCU for repair
9-flashes	Low Power Supply voltage	Check power inputs and outputs* Change appropriate board* Return MCU for repair
10-flashes	Processor fault	Change Processor Board* Return MCU for repair

*CATTRON[®] customer trained technicians only. If necessary, contact the factory for the replacement part number applicable to your system configuration - refer to the rear cover of this manual for telephone numbers and e-mail addresses.

8 ACCESSORIES AND CONSUMABLE ITEMS

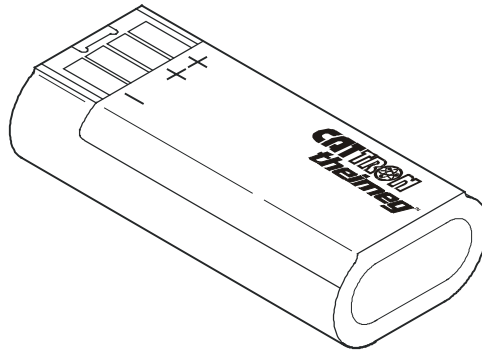
Contact CATTRON[®] sales department for availability and pricing of the following accessories and consumable items. These items are itemized in Table 5 below and illustrated on the following pages.

Table 5. Optional Accessories

Item #	Part Number	Order Quantity	Item Description
1	60C-0060A	1	Battery pack, alkaline, non-rechargeable, 3-volt, 2,500 mAH
2	60C-0060N	1	Battery pack, Ni-Cad, re-chargeable, 2.4-volt, 1,100 mAH
3	42C-0066	1	Carrying Strap, Belt, loop, 2", nylon, black
4	70C-0001	1	Battery Charger, Ni-Cad, standard charge (10-hour), 110 VAC
5	70C-0002	1	Battery Conditioner, 100-240 VAC input
6	42C-0057	1	Carrying strap, shoulder
7	70C-0003	1	External Battery Charging Unit (use with items 2, 4, & 5)
8	60C-0062	1	Battery Adapter, 3-volt (for qty. 2 'AAA' Alkaline batteries only)
9	54C-0088A	1	Standard Label Kit, English Text*
10	54C-0088SPA	1	Special Label Kit, English Text*

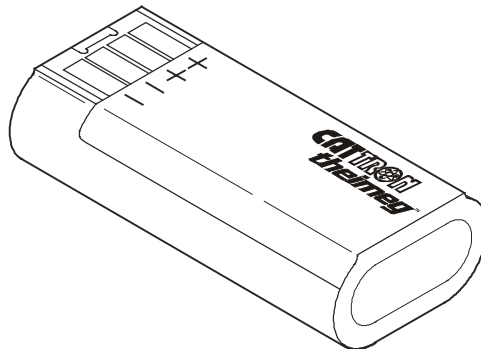
*Non-English language text labels are available. Contact CATTRON[®] sales department for details - refer to the rear cover of this manual for telephone numbers and e-mail addresses.

8.1 ACCESSORIES/CONSUMABLE ITEMS - ILLUSTRATIONS



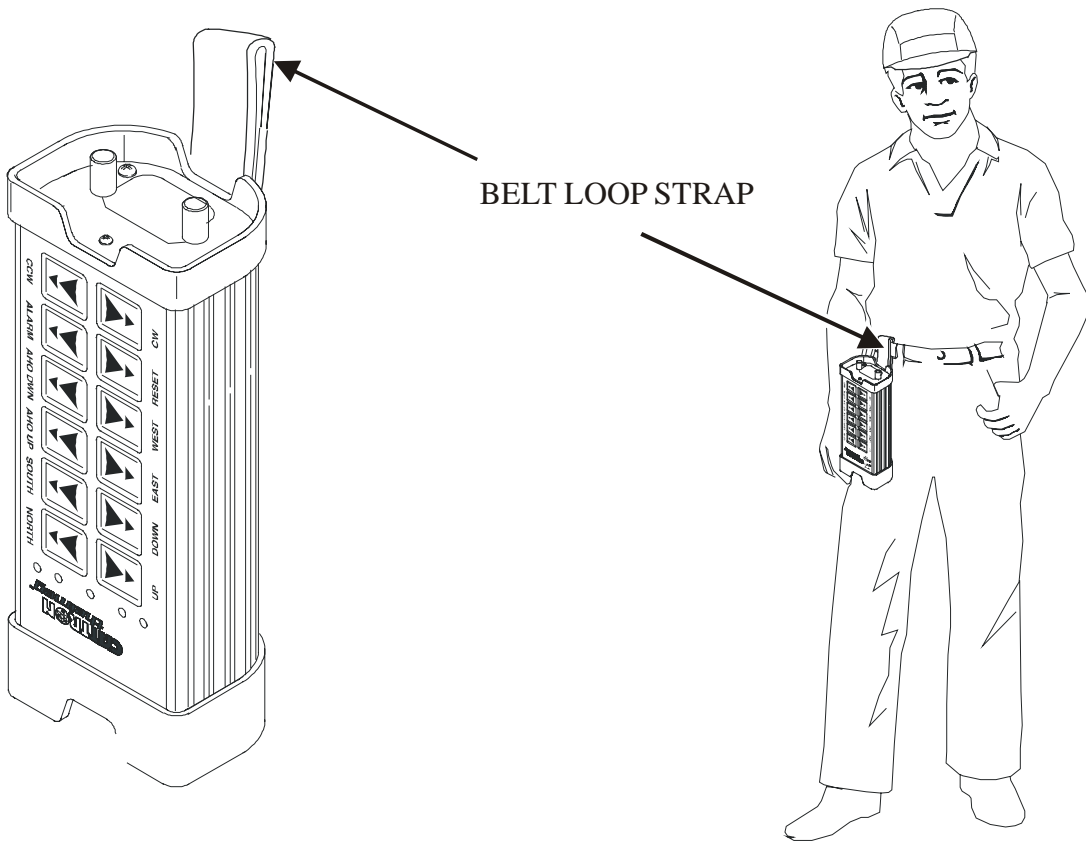
White color

Item 1. Battery pack, alkaline, non-rechargeable, 3-volt, 2,500 mAH – Part # 60C-0060A

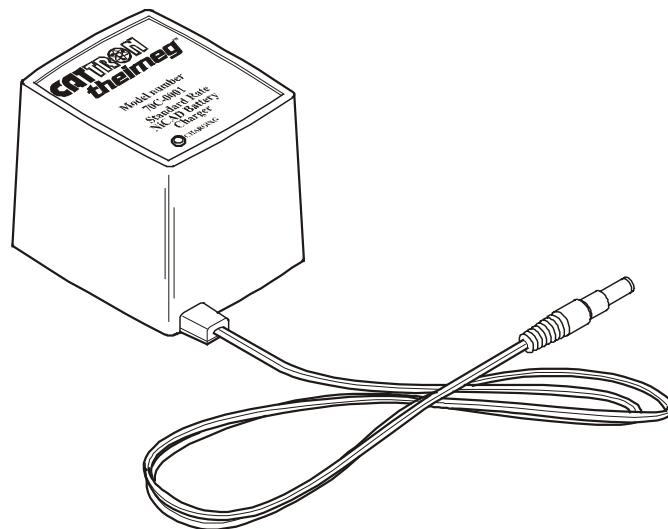


Yellow color

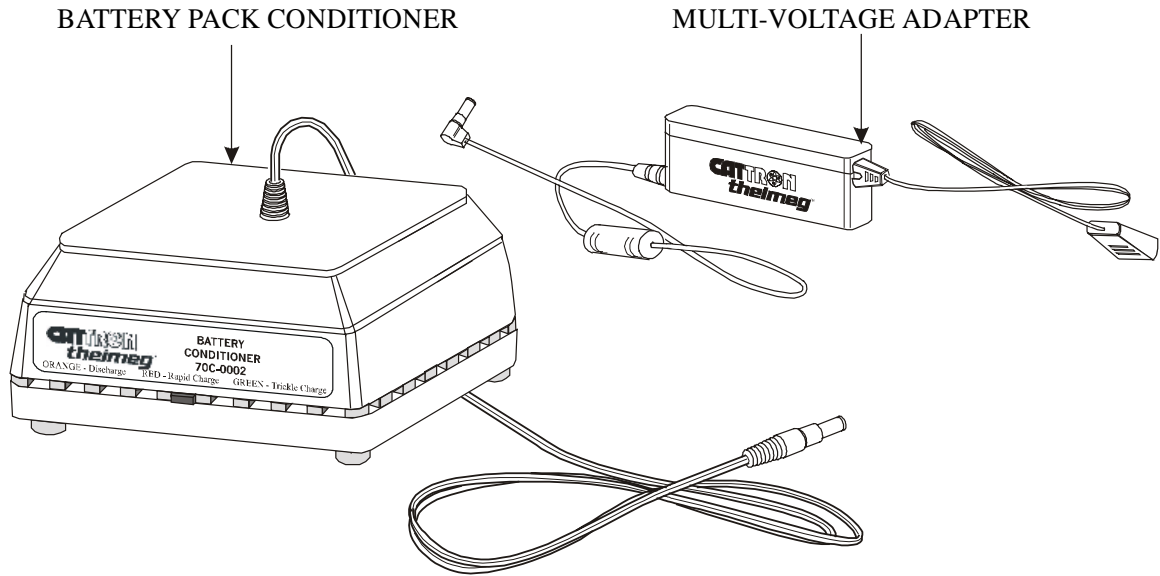
Item 2. Battery pack, Ni-Cad, re-chargeable, 2.4-volt, 1,100 mAH – Part # 60C-0060N



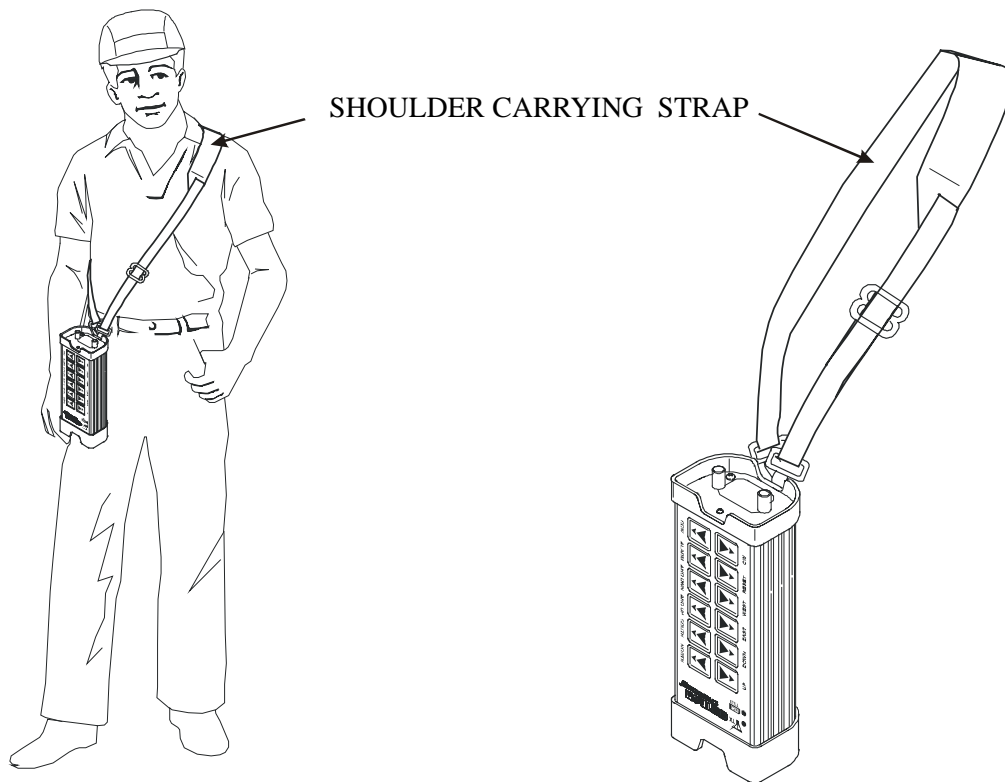
Item 3. Carrying strap, belt, loop, 2", nylon, black - Part # 42C-0066



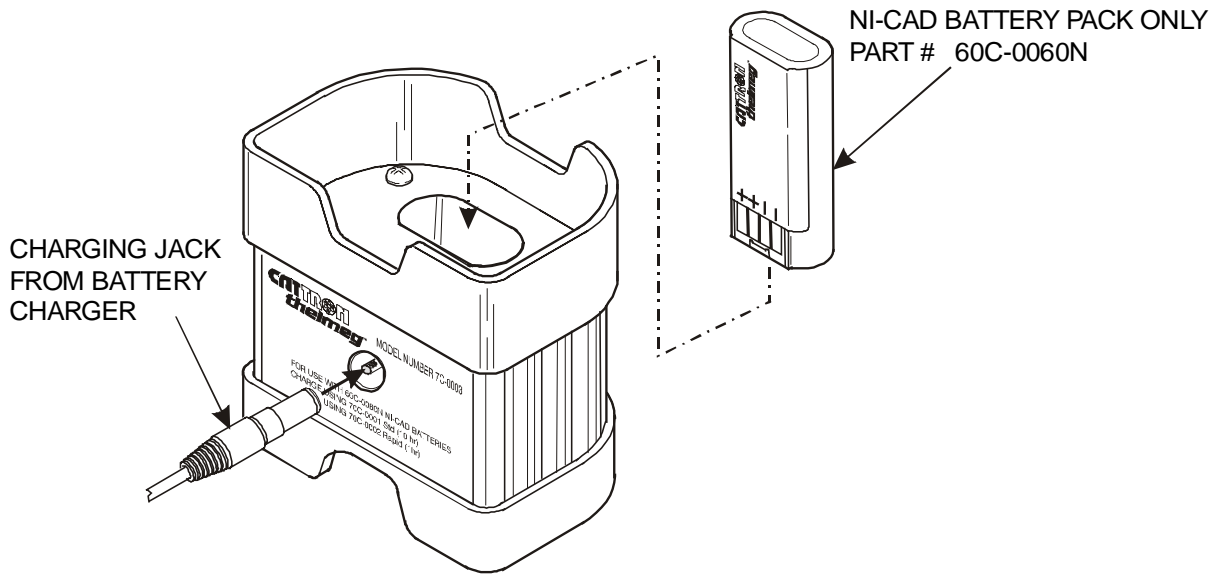
Item 4. Battery Charger, Ni-Cad, standard charge (10-hour), 110 VAC - Part # 70C-0001



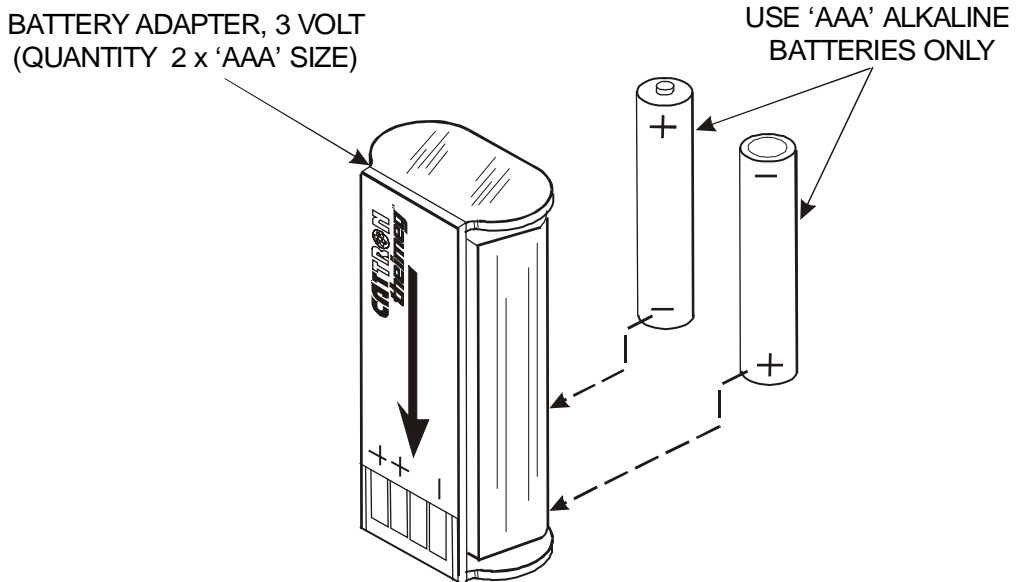
Item 5. Battery Conditioner, 100-240 VAC input, complete with multi-voltage adapter - Part # 70C-0002



Item 6. Carrying strap, shoulder - Part # 42C-0057

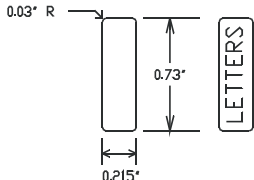

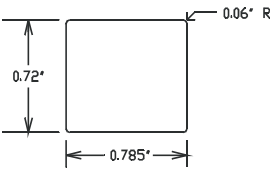


Item 7. External Battery Charging Unit (used with items 2, 4, & 5 above) - Part # 70C-0003

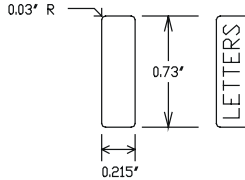

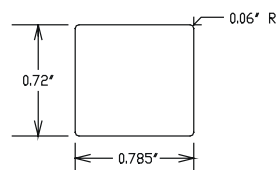


Item 8. Battery Adapter for Quantity 2 x 'AAA' Alkaline Batteries - Part # 60C-0062

Item 9. Standard Label Kit, English Text - Part # 54C-0088A

MATERIAL: LAMINATE WITH CLEAR NYLAR TOP LAYER PRINTED MATERIAL SECOND LAYER PERMANENT ADHESIVE BACK(3M 468HP).	 <p>0.03" R</p> <p>0.73"</p> <p>0.215"</p> <p>LETTERS</p> <p>NOTES: DIRECTION OF LETTERING, ALL LETTERING SAME SIZE MAKE 11 LABELS BLANK - NO TEXT</p>																																																																																																				
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Item 10. Special Label Kit, English Text - Part # 54C-0088SPA

<p>MATERIAL: LAMINATE WITH CLEAR MYLAR TOP LAYER PRINTED MATERIAL SECOND LAYER PERMANENT ADHESIVE BACK(3M 468HP).</p> <p>COLORING: BACKGROUND-SILVER PRINT-BLACK</p> <p>LETTERING CONTENT: SEE TEXT BELOW</p> <p>LETTERING HEIGHT: ALL LETTERING SHOULD BE AS LARGE AS PRACTICABLE YET MAINTAIN ADEQUATE DISTANCE FROM EDGES.</p> <p>LETTERING LOCATION: ALL LETTERING SHOULD BE CENTERED WITHIN LABEL AREA. TEXT SHOULD BE ALIGNED AS SHOWN.</p> <p>LETTERING STYLE: UPPER CASE GOTHIC OR SIMILAR STYLE</p> <p>ENVIRONMENTAL: LABEL TO REMAIN READABLE AND SHOULD STICK TO MOST METAL AMBIENT TEMPERATURE PLASTIC & METAL SURFACES IN HUMID & DRY, HOT & COLD INDUSTRIAL ENVIRONMENTS.</p> <p>TOLERANCES: ALL TOLERANCES +/- 0.005</p> <p>CUT: LABELS SHOULD BE KISS CUT</p>	<div style="text-align: center;">  <p>0.03" R</p> <p>0.73"</p> <p>0.215"</p> <p>LETTERS</p> </div> <p>NOTE: DIRECTION OF LETTERING, ALL LETTERING SAME SIZE. EXCEPT FOR WORDS WITH 9 CHARACTER'S THEY MAY BE A DIFFERENT TEXT SIZE.</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px auto; width: fit-content;"> <p>MAKE ONE LABEL FOR EACH OF THE FOLLOWING:</p> </div> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <tr><td>JOG</td><td>ACCEL</td><td>6</td><td>SWING RT</td></tr> <tr><td>HORN</td><td>DECEL</td><td>7</td><td>BOOM UP</td></tr> <tr><td>OPEN</td><td>DECEL</td><td>8</td><td>BOOM DN</td></tr> <tr><td>CLOSE</td><td>B ACCEL</td><td>9</td><td>DUST ON</td></tr> <tr><td>UP</td><td>B DECEL</td><td>0</td><td>DISC FWD</td></tr> <tr><td>DOWN</td><td>T ACCEL</td><td>1</td><td>DISC OFF</td></tr> <tr><td>NORTH</td><td>T DECEL</td><td>START 2</td><td>DISC REV</td></tr> <tr><td>SOUTH</td><td>H ACCEL</td><td>START 3</td><td>ROLL FWD</td></tr> <tr><td>PWR ON</td><td>H DECEL</td><td>START 4</td><td>ROLL REV</td></tr> <tr><td>PWR OFF</td><td>1</td><td>START 5</td><td>ROLL OFF</td></tr> <tr><td>EAST</td><td>2</td><td>START 6</td><td>FLOOR FWD</td></tr> <tr><td>WEST</td><td>3</td><td>START 7</td><td>FLOOR REV</td></tr> <tr><td>DUMP</td><td>4</td><td>START 8</td><td>FLOOR OFF</td></tr> <tr><td>TARE</td><td>5</td><td>START 9</td><td>SCREW UP</td></tr> <tr><td>BUTTERFLY</td><td>START</td><td>START 10</td><td>SCREW DN</td></tr> <tr><td>EJECT</td><td>STOP</td><td>START 11</td><td>FEED ST</td></tr> <tr><td>SWIVEL</td><td>SEND</td><td>START 12</td><td>FEED SP</td></tr> <tr><td>POUR</td><td></td><td>CRP U</td><td>DUST ST</td></tr> <tr><td>BACK</td><td></td><td>CRP D</td><td>DUST SP</td></tr> <tr><td>OPER REL</td><td></td><td>HRN/RST</td><td>ASB ST</td></tr> <tr><td>LIGHTS</td><td></td><td>AUX</td><td>ASB SP</td></tr> <tr><td>MAG LIFT</td><td></td><td>SCOPE IN</td><td>BUMP UP</td></tr> <tr><td>MAG DROP</td><td></td><td>SCOPE OUT</td><td>BUMP DN</td></tr> <tr><td>ACCEL</td><td></td><td>SWING LT</td><td></td></tr> </table> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>MAKE 2 OF THIS STYLE. BLANK CLEAR TOP LAYER <u>ONLY</u> WITH THIN BLACK BORDER.</p> <div style="text-align: center; margin-top: 5px;">  </div> </div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>MAKE 8 OF THIS STYLE SOLID BLANK (COLOR BLACK)</p> <div style="text-align: center; margin-top: 5px;">  <p>0.06" R</p> <p>0.72"</p> <p>0.785"</p> </div> </div>	JOG	ACCEL	6	SWING RT	HORN	DECEL	7	BOOM UP	OPEN	DECEL	8	BOOM DN	CLOSE	B ACCEL	9	DUST ON	UP	B DECEL	0	DISC FWD	DOWN	T ACCEL	1	DISC OFF	NORTH	T DECEL	START 2	DISC REV	SOUTH	H ACCEL	START 3	ROLL FWD	PWR ON	H DECEL	START 4	ROLL REV	PWR OFF	1	START 5	ROLL OFF	EAST	2	START 6	FLOOR FWD	WEST	3	START 7	FLOOR REV	DUMP	4	START 8	FLOOR OFF	TARE	5	START 9	SCREW UP	BUTTERFLY	START	START 10	SCREW DN	EJECT	STOP	START 11	FEED ST	SWIVEL	SEND	START 12	FEED SP	POUR		CRP U	DUST ST	BACK		CRP D	DUST SP	OPER REL		HRN/RST	ASB ST	LIGHTS		AUX	ASB SP	MAG LIFT		SCOPE IN	BUMP UP	MAG DROP		SCOPE OUT	BUMP DN	ACCEL		SWING LT	
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APPENDIX 'A' – OCU CHANNEL CHANGING OPTION

Occasionally, a change of RF channel may be necessary due to radio interference or the fact that the factory pre-programmed RF channel is already in use.

This is normally accomplished by reprogramming the TransKey (external programming). However, some OCUs are equipped with a Channel Changing Option that allows the operator to change the RF channel using the OCU keypad. If this option is available, an RF Frequency Color Code Table similar to the example shown below will be supplied with your Remote Control System.

Table A-1. Example RF Frequency Color Code Table

902 MHz		LED			
Channel	Frequency	1	2	3	4
0	902.000	-	-	red	-
1	902.100	-	-	-	red
2	902.200	-	-	-	green
3	902.300	-	-	-	orange

NOTES: Regardless of the OCU model (6, 8, 10 or 12 buttons), in addition to the 'ON' and 'STOP' buttons, only the top two rows of buttons are used to change the RF channel.

The programming mode can be exited at any time by pressing the STOP button. In this case the previously stored RF channel will remain in effect.

A.1 ACTIVATING THE PROGRAMMING MODE.

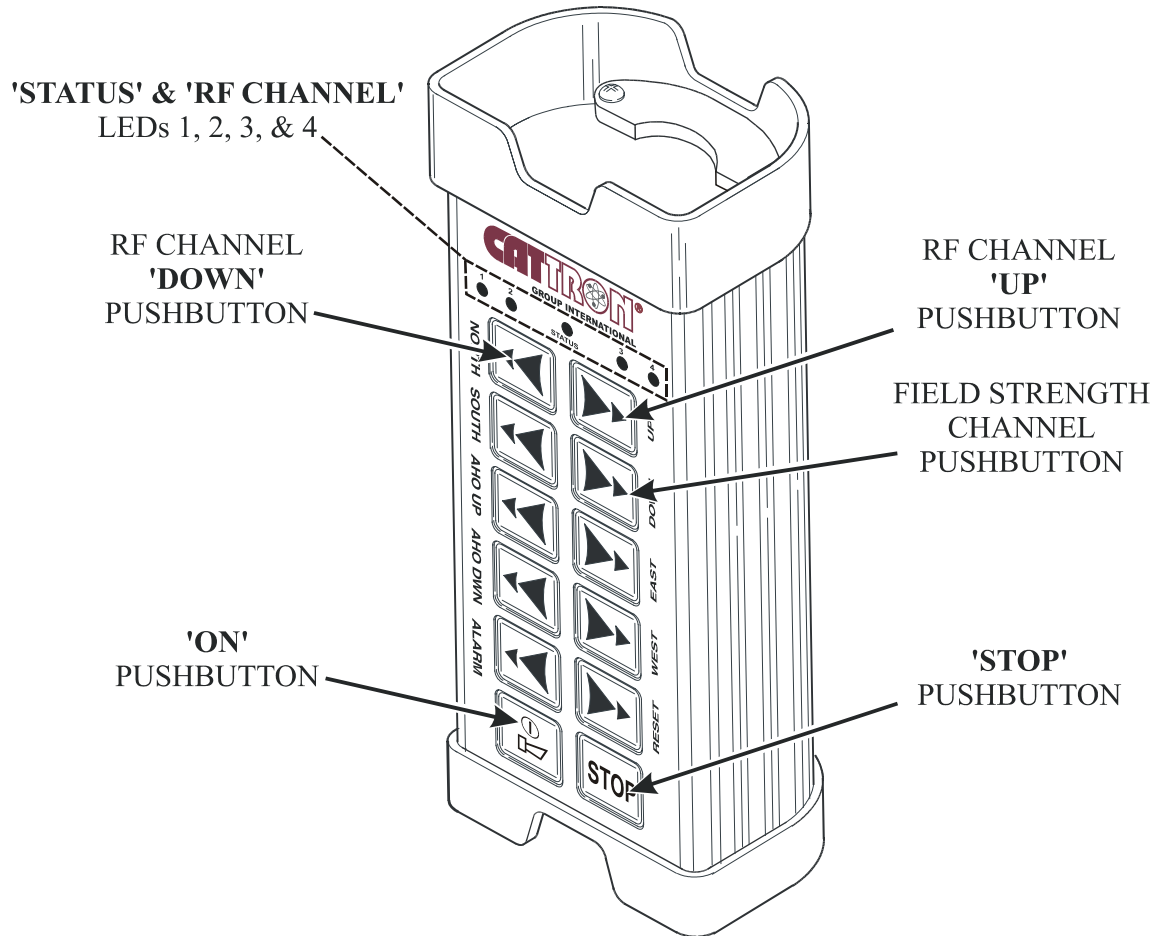
Refer to Figure A-1, overleaf

Step 1: Switch the OCU OFF and then keep the 'ON' button pressed for approximately 5-seconds until the red 'STATUS' LED switches from permanently red to fast blinking red.

Step 2: Within 3 seconds press the 'UP' and 'DOWN' buttons (in the top row), first and second step, at the same time.

Step 3: The OCU is now in the programming mode. The 'STATUS' LED blinks orange and the set RF channel is indicated via a color code (see example Table A-1, above) using the 4 LEDs.

Figure A-1. RF Programming Mode Pushbuttons and LEDs



A.2 SELECTING THE RF CHANNEL

Pressing the first level of the UP and DOWN buttons selects the next higher or next lower RF channel respectively.

Alternatively, holding down the second level initiates a fast run (approx. 0.3 seconds per channel) in order to set the system to the desired RF channel (see example Table A-1, above).

When the desired RF channel has been selected, pressing the ON button stores the selected RF channel in the OCU, exits the programming mode and switches off the OCU.

When the OCU is switched on again it then transmits on the selected channel.

NOTE: After the first activation of the OCU following an RF channel change, it can take up to 1-minute before the MCU is ready for operation.

A.3 RE-ACTIVATING THE TRANSKEY RF CHANNEL

Pressing the first level of the Field Strength Channel Pushbutton and the 'ON' Pushbutton re-activates the RF channel originally configured in the TransKey (basic configuration). This action exits the programming mode and switches off the OCU.

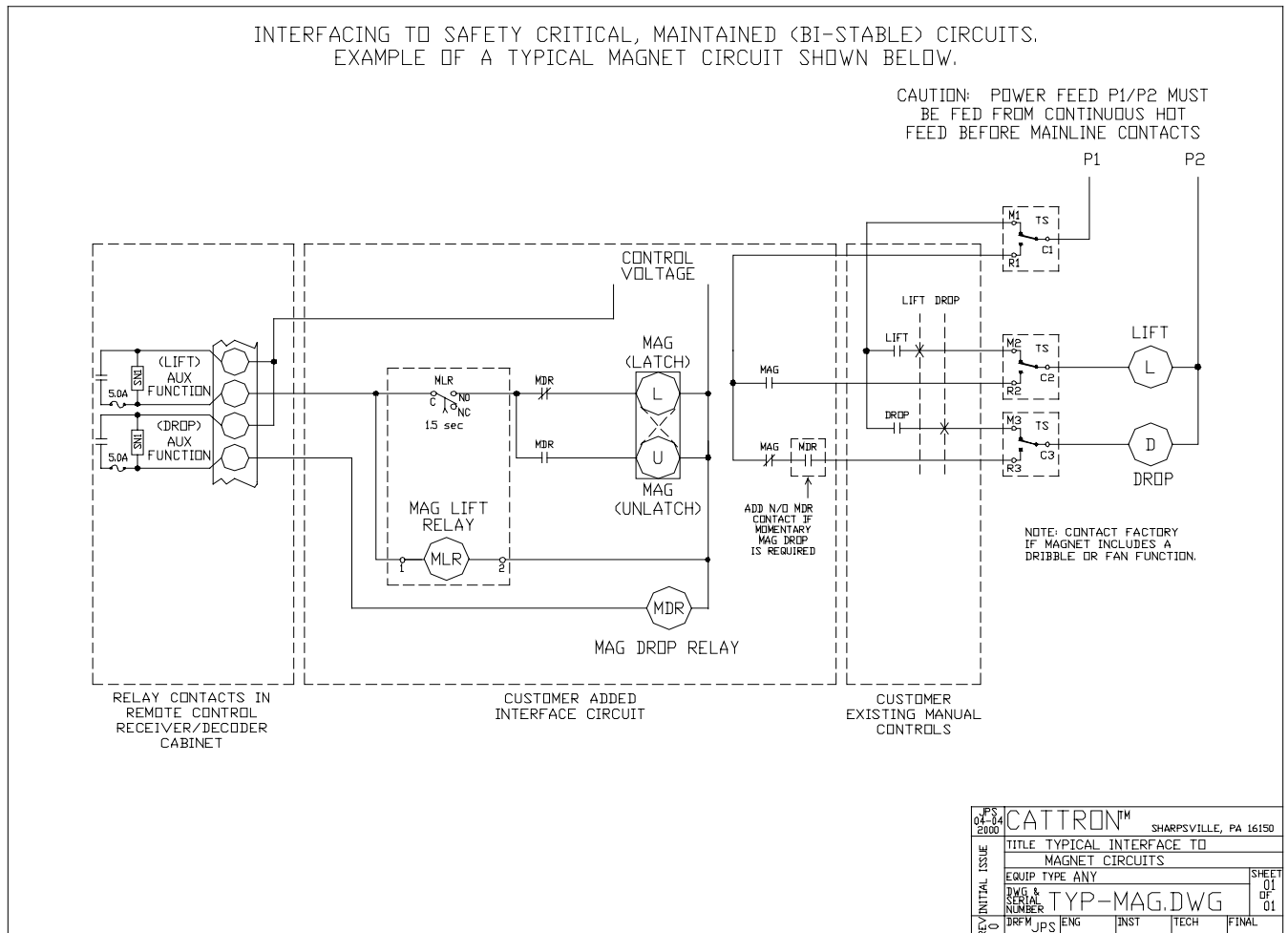
When the OCU is switched on again, it will transmit on the RF Channel stored in the TransKey



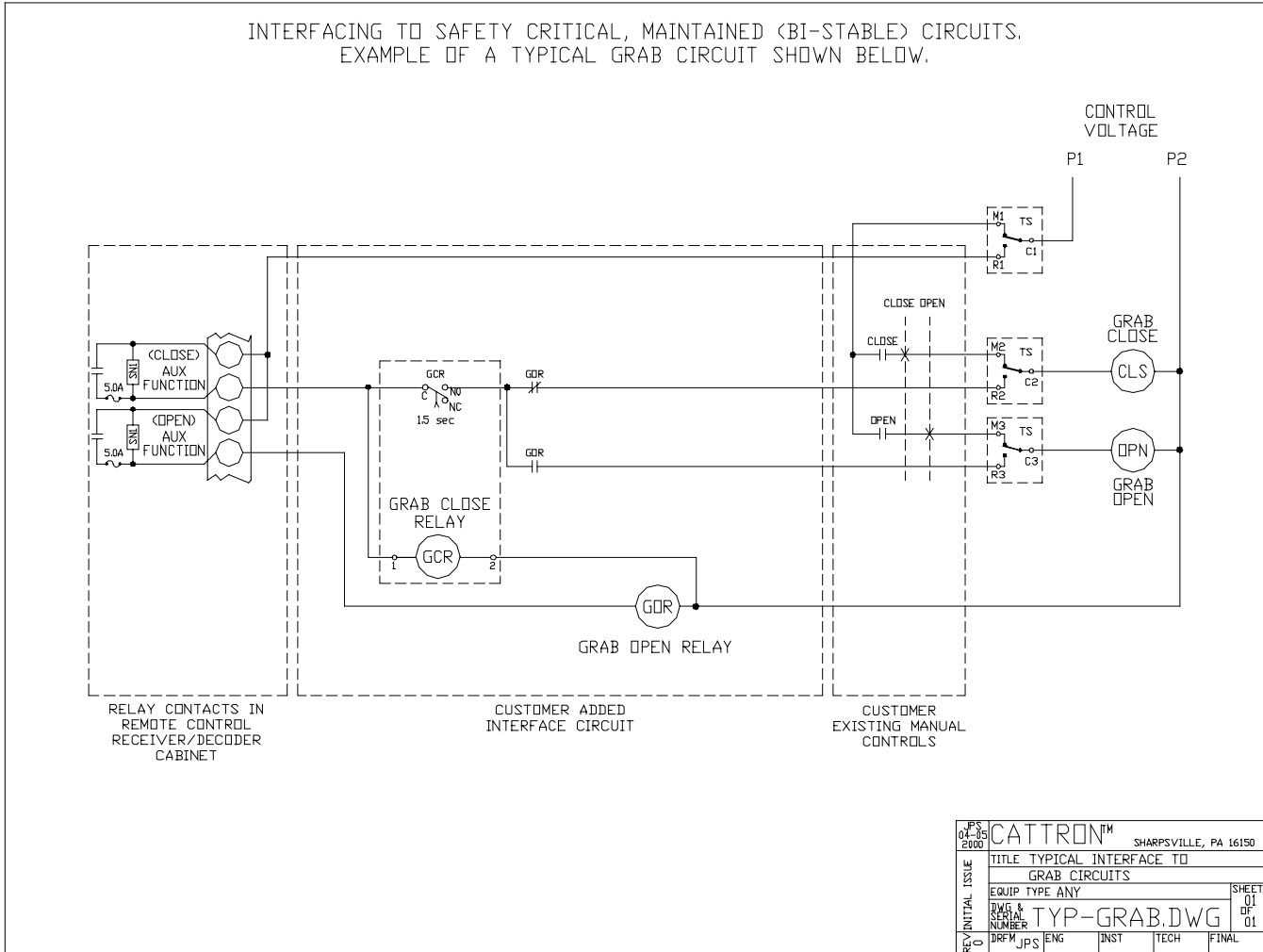
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APPENDIX 'B' – INTERFACING TO SAFETY CRITICAL MAINTAINED BI-STABLE CIRCUITS

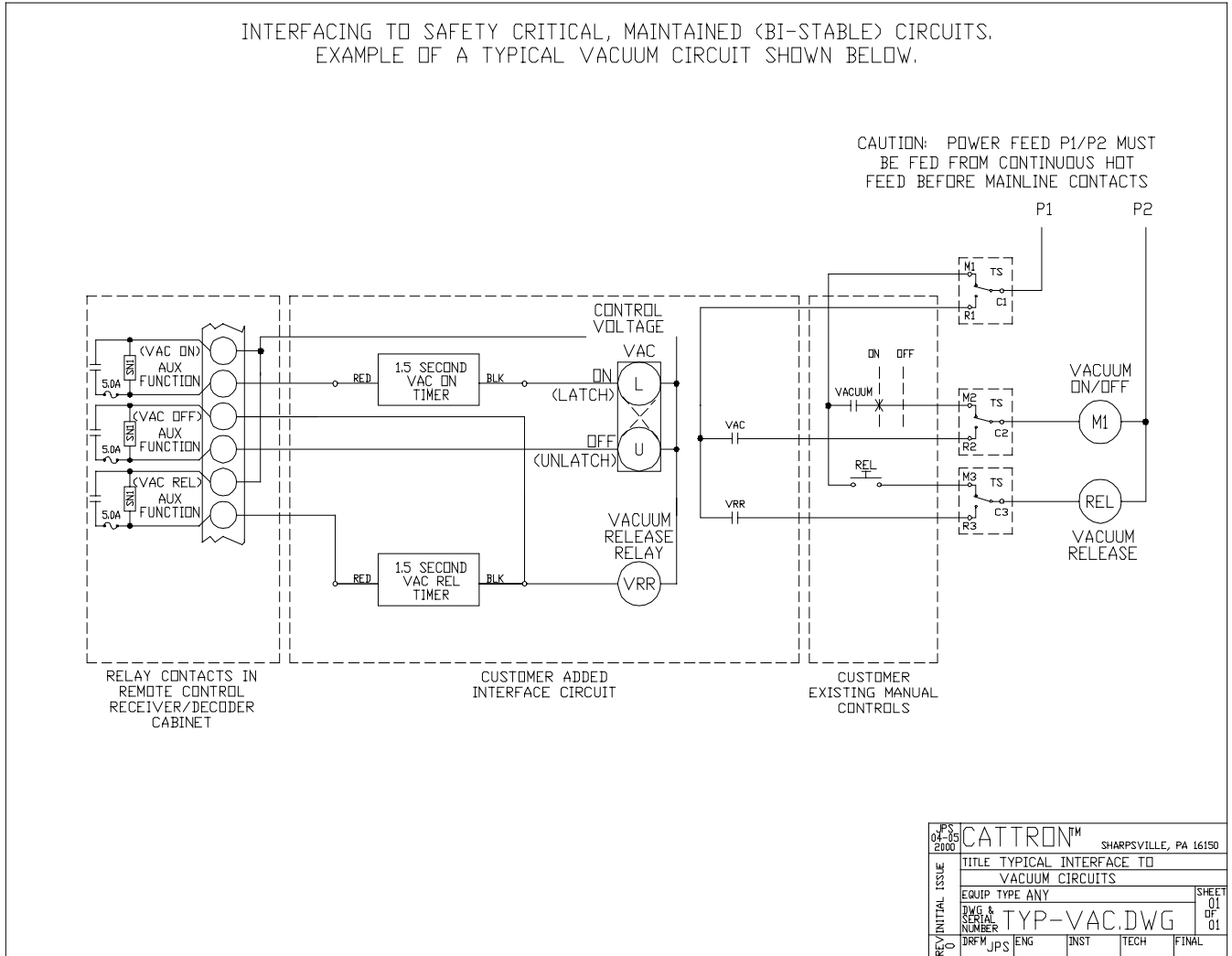
B.1 EXAMPLE CIRCUIT DIAGRAM - MAGNET



B.2 EXAMPLE CIRCUIT DIAGRAM - GRAB



B.3 EXAMPLE CIRCUIT DIAGRAM - VACUUM





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