



PSR Professional Service & Repair Inc.

Professional Service & Repair Inc. is a full-service mobile crane repair, inspection, and certification company. At Professional Service & Repair we understand the critical aspect of your crane being operational to your project schedule and budget. We will deliver world class service to have your crane operational in the minimum amount of time.

PSR is the global provider for sales, repair and installation of Load Moment Indicating (LMI) systems, Anti-Two Block Systems (A2B), and Rated Capacity Indicating systems. Please contact us with your crane repair and certification needs today.

PSR is the name businesses trust for crane repair, inspection, and certification.

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SERVICE AND MAINTENANCE

Maintenance of the PAT DS 150 Load Moment Indicator System consists of inspecting:

1. The cabling connecting the various parts of the system. If a cable is damaged, it must be replaced immediately.
2. The insulation of the length sensor cable and the cable guides. If the insulation is worn or the cable damaged, these parts must be replaced.
3. Check the anti-two-block limit switches for freedom of movement
4. The cable reel must be properly tensioned to operate properly.
5. Check the pressure transducers at the lift cylinder and the connecting hoses for oil leakage.

7 TROUBLESHOOTING

The service console displays 16 variables to assist the setup and diagnostics of this system. The first numeral displayed is the reference number 1 thru 16.

The second value displayed is as follows:

REF # VALUE

1	Main Boom Length
2	Main Boom Angle
3	Radius
4	Jib Angle (with jib only, otherwise blank)
5	Tip Height
6	Operating Mode
7	Error Code (in case of error only, otherwise blank)
8	Real Moment
9	Jib Length (with jibs only, otherwise blank)
10	Rated Load (in t or 1,000 lbs)
11	Actual Load (in t or 1,000 lbs)
12	Reeving
13	Load Moment in %
14	Piston side Pressure in mV
15	Rod side Pressure in mV
16	Test

By depressing either the page up or page down" button, the display will sequence through the variables.

In case of a malfunction of the system, both the OVL and A2B lights will illuminate simultaneously. By selecting variable #7 on the service console, the display will indicate a code, which identifies the system malfunction.

ADDENDUM A BASIC ADJUSTMENT AND VOLTAGE CHECKS

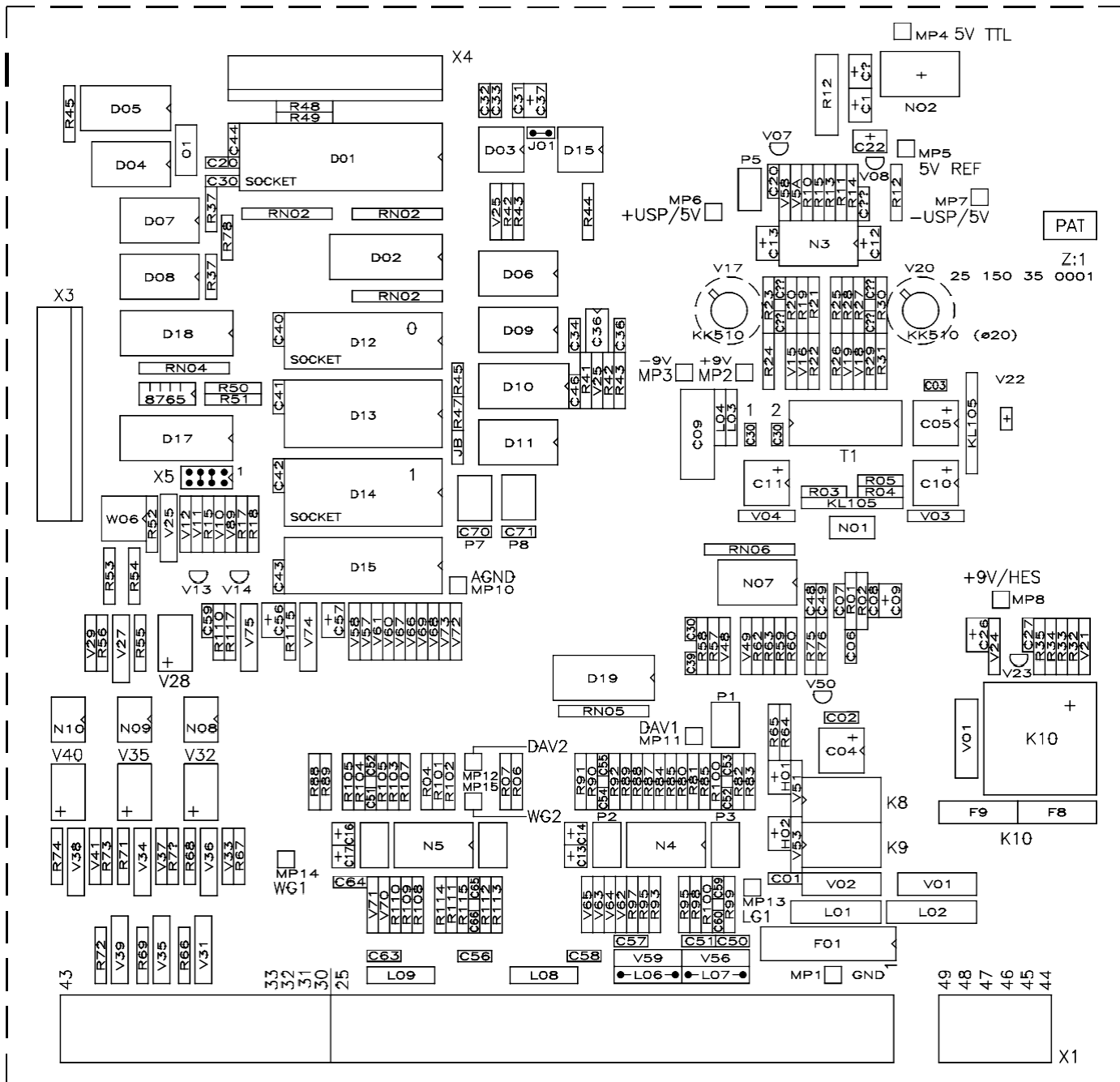
MODEL: _____

S/N: _____

PAT DS150 P/N 024-150-060-002 central unit / 024-150-300-001 main board

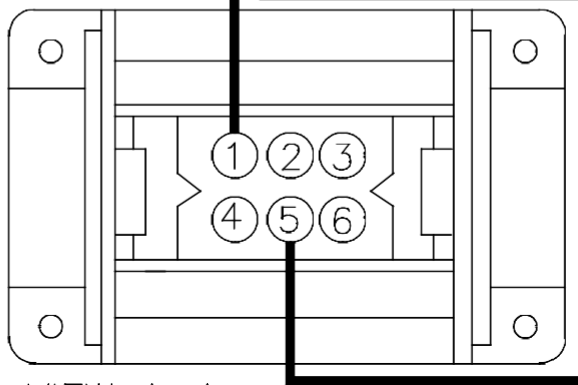
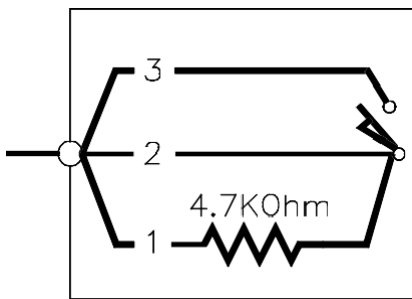
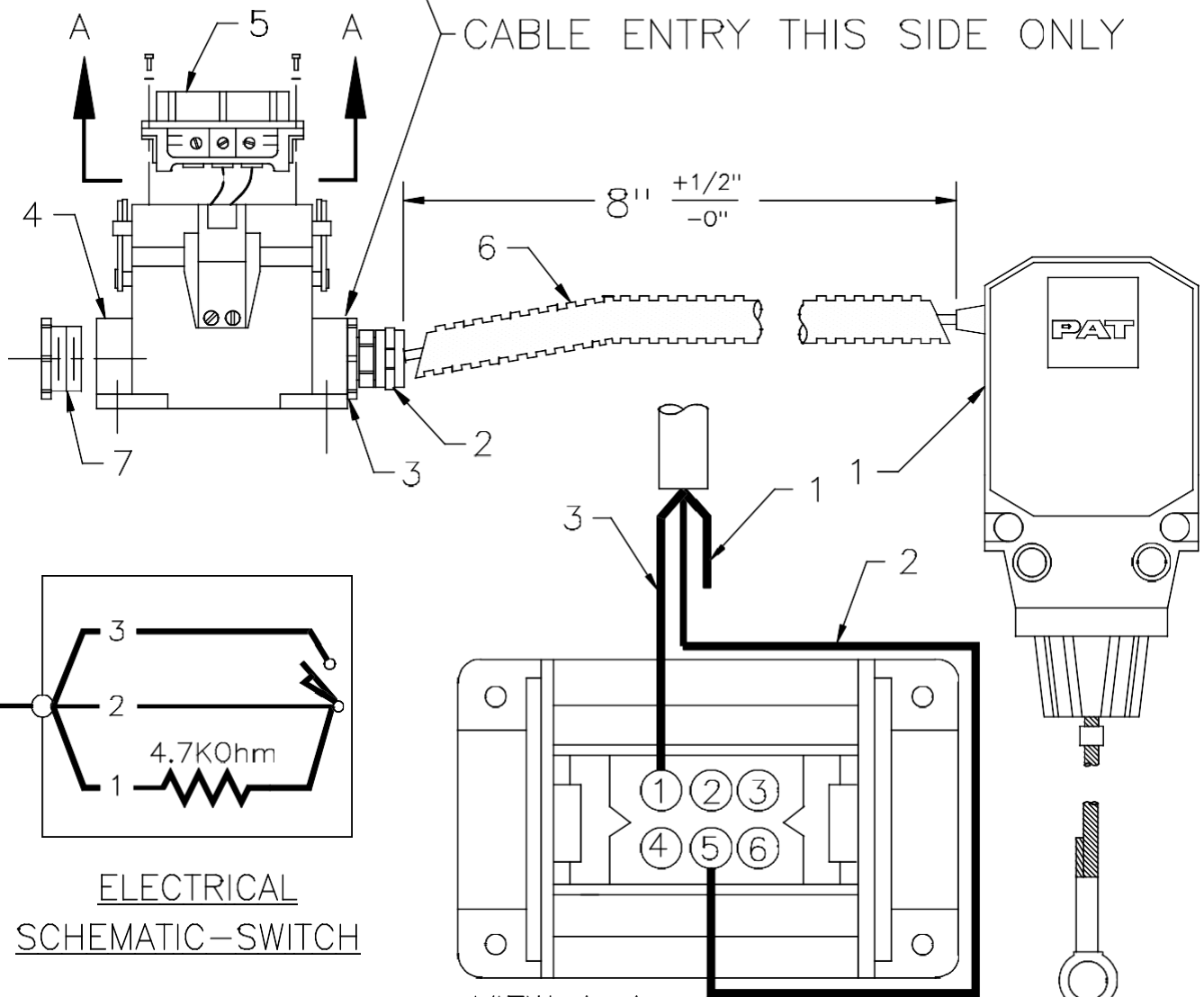
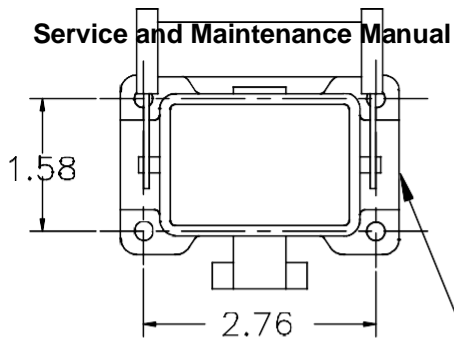
1. Crane Supply Voltage @ X1-1 (+) & X1-4 (GND) = VDC
2. Main Board Power Supply (Reference Voltages +/- 50 MV):
 - + 9V @ Mp2 = _____ VDC Mp 10 Ground - Piston & Rod Pressure
 - 9V @ Mp3 = _____ VDC Mp 10 Ground - Piston & Rod Pressure
 - 5V @ Mp4 = _____ VDC Mp 10 Ground – TTL on Board
 - 5V @ Mp5 = _____ VDC Mp 10 Ground – Reference on Board
 - + 5V @ Mp6 = _____ VDC Mp 10 Ground – Internal on Board
 - 5V @ Mp7 = _____ VDC Mp 10 Ground – Length and Main/Jib Angle
4. Boom Length: (MP10 Ground for Meter)
 - Fully Retracted _____ Ft. _____ VDC @ X1:10 _____ DC @ MP13
 - Fully Extended _____ Ft. _____ VDC @ X1:10 _____ DC @ MP13
 - 5 Volt Reference Voltage _____ VDC @ X1:11
5. Boom Angle: (MP10 Ground for Meter)
 - Minimum Angle _____ ° _____ VDC @ X1:9 _____ VDC @ Mp14
 - Maximum Angle _____ ° _____ VDC @ X1:9 _____ VDC @ Mp14
 - 5 Volt Reference Voltage _____ VDC @ X1:11
6. Pressure Transducers: (MP10 Ground for Meter)
 - Piston Zero Point _____ VDC @ X1:21 _____ VDC @ Mp11
 - Rod Zero Point _____ VDC @ X1:16 _____ VDC @ Mp12
 - +5 Volt Reference Voltage _____ VDC @ X1:13 & 18
 - 5 Volt Reference Voltage _____ VDC @ X1:15 & 20

MAIN BOARD



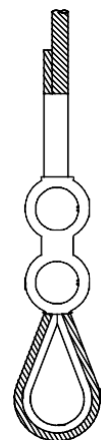
- MP 7 : -5,000V geg. AGND (P6)
- MP 5,6 : +4,990V-+5,010V
- MP11/P1 : DAV1
- MP12/P2 : DAV2
- MP13/P3 : LG1
- MP14/P4 : WG1
- MP15/P5 : WG2

ITEM	PART NUMBER	DESCRIPTION	QTY
1	031-002-060-011	SWITCH, A2B WITH CRIMP (NEW STYLE)	1
2	021-441-060-409	STRAIN RELIEF, PG 9, 4-6mm, YELLOW+WHITE INSERT	1
3	000-214-261-609	REDUCER, PG 16 TO PG 9	1
4	000-301-022-296	RECEPTACLE, 6 PIN	1
5	000-301-025-062	INSERT, 6 PIN, FEMALE	1
6	031-300-100-110	CONDUIT, 1/4", (PER FOOT)	1'
7	000-214-340-016	HOLE PLUG, PG16	1

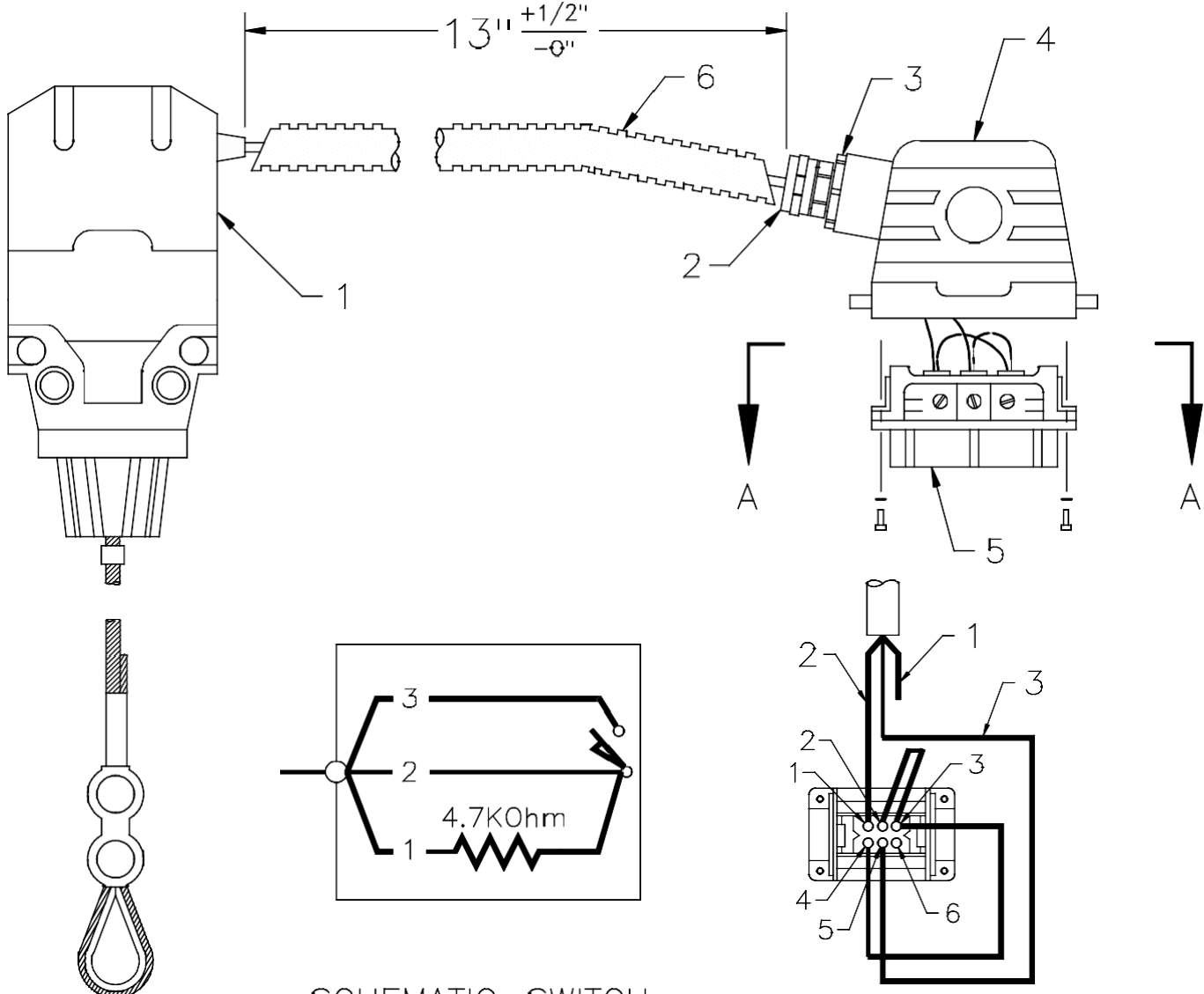


NOTES:

1. CABLE LENGTH WILL BE 8.5 INCHES MAXIMUM AND 8.0 INCHES MINIMUM. MEASURE FROM THE END OF THE RUBBER GROMMET ON THE A2B SWITCH TO THE STRAIN RELIEF ON THE RECEPTACLE, WITH NO SLACK IN THE CABLE.
2. THE CONDUIT LENGTH WILL BE EQUAL TO THE CABLE LENGTH, WITH A MAXIMUM GAP OF .25 INCHES WHEN MEASURED AS FOLLOWS:
 A. PUSH CONDUIT FIRMLY AGAINST THE RUBBER GROMMET ON THE A2B SWITCH.
 B. MAXIMUM GAP ALLOWED FROM STRAIN RELIEF TO CONDUIT IS .25 INCHES.



ITEM	PART NUMBER	DESCRIPTION	QTY
1	031-002-060-011	SWITCH, A2B WITH CRIMP (NEW STYLE)	1
2	021-441-060-409	STRAIN RELIEF, PG 9, 4-6mm, YELLOW+WHITE INSERT	1
3	000-214-261-309	REDUCER, PG 13.5 TO PG 9	1
4	000-301-022-060	PLUG, 6 PIN	1
5	000-301-025-061	INSERT, 6 PIN, MALE	1
6	031-300-100-110	CONDUIT, 1/4", (PER FOOT)	1.1



SCHEMATIC-SWITCH

VIEW A-A

- NOTES:
1. CABLE LENGTH WILL BE 13.5 INCHES MAXIMUM AND 13.0 INCHES MINIMUM. MEASURE FROM THE END OF THE RUBBER GROMMET ON THE A2B SWITCH TO THE STRAIN RELIEF ON THE RECEPTACLE, WITH NO SLACK IN THE CABLE.
 2. THE CONDUIT LENGTH WILL BE EQUAL TO THE CABLE LENGTH, WITH A MAXIMUM GAP OF .25 INCHES WHEN MEASURED AS FOLLOWS:
 A. PUSH CONDUIT FIRMLY AGAINST THE RUBBER GROMMET ON THE A2B SWITCH.
 B. MAXIMUM GAP ALLOWED FROM STRAIN RELIEF TO CONDUIT IS .25 INCHES.

NOTES:

- 1 CABLE TO INCORPORATE ADHESIVE HEAT SHRINK TUBING, (MIN. 2") AS A STRAIN RELIEF. TUBING TO BE SAME OR AS EQUIVALENT TO TEREX-RO PART #0-400-15092: ALPHA ϕ 1.6" TYPE FIT-321, MINIMUM 3:1 RATIO AT 125°F, DUAL WALL ENCAPSULATING ADHESIVE INNER WALL.
- 2 INSERT THE GROUND SCREW SIDE OF THE CONNECTOR INTO THE STRAIN RELIEF SIDE OF PLUG HOUSING

ITEM	PART NUMBER	DESCRIPTION	QTY
1	000-301-022-060	PLUG, 6 PIN	2
2	000-301-025-061	INSERT, 6 PIN MALE	2
3	021-441-090-909	STRAIN RELIEF, PG 9 WHITE 3mm	2
4	000-673-030-022	CABLE, 3 X .5mm \pm 2 S.S (PER FOOT)	47'
5	000-214-261-309	REDUCER, PG 13.5 TO PG 9	2
6	031-300-100-720	ADHESIVE HEAT SHRINK TUBING, 1/4 DIA	2"
7	031-300-100-170	THIMBLE	1

