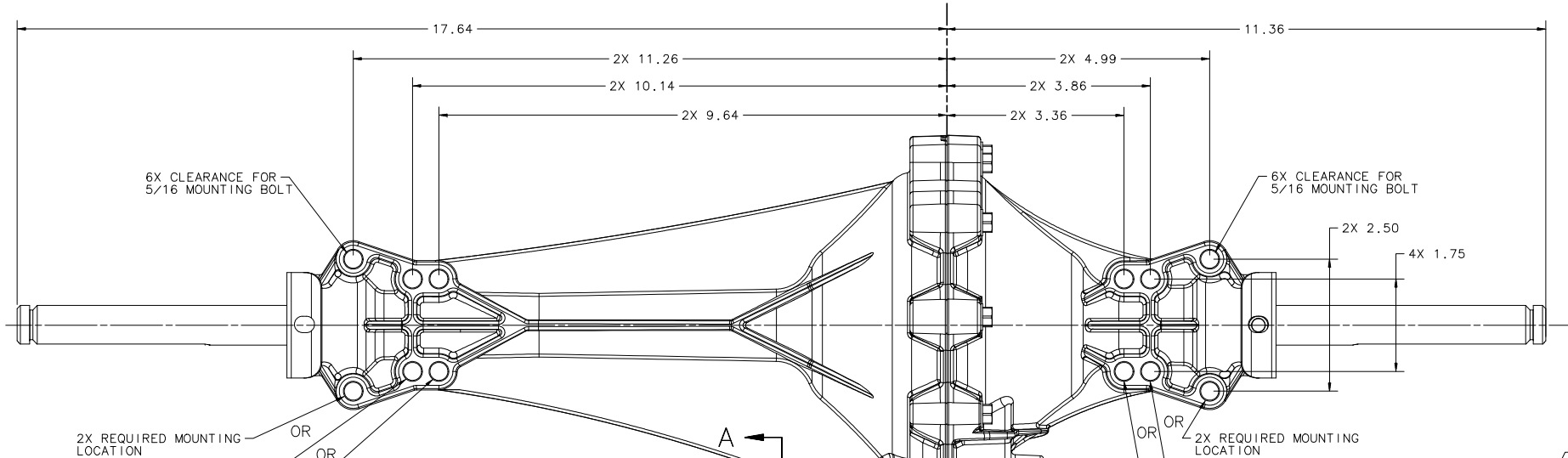


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NOTES:
 1. REFERENCE MATERIAL:
 ASSEMBLY GUIDE: 71823
 BOM CONFIGURATION GUIDE: 71866
 PRODUCTION PARTS SCHEMATIC: 71797
 ELECTRICAL WIRING LAYOUT: 71936



BRAKE CONNECTOR
 MATING CONNECTOR:
 HOUSING (FEMALE): AMP 350778-1
 SOCKET (FEMALE): AMP 926895-1
 WIRE SEAL: AMP 794270-1
 WIRE: USE 20 AWG

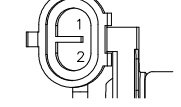
PIN 1 = (-)
 PIN 2 = (+)

PIN 1, PIN 2

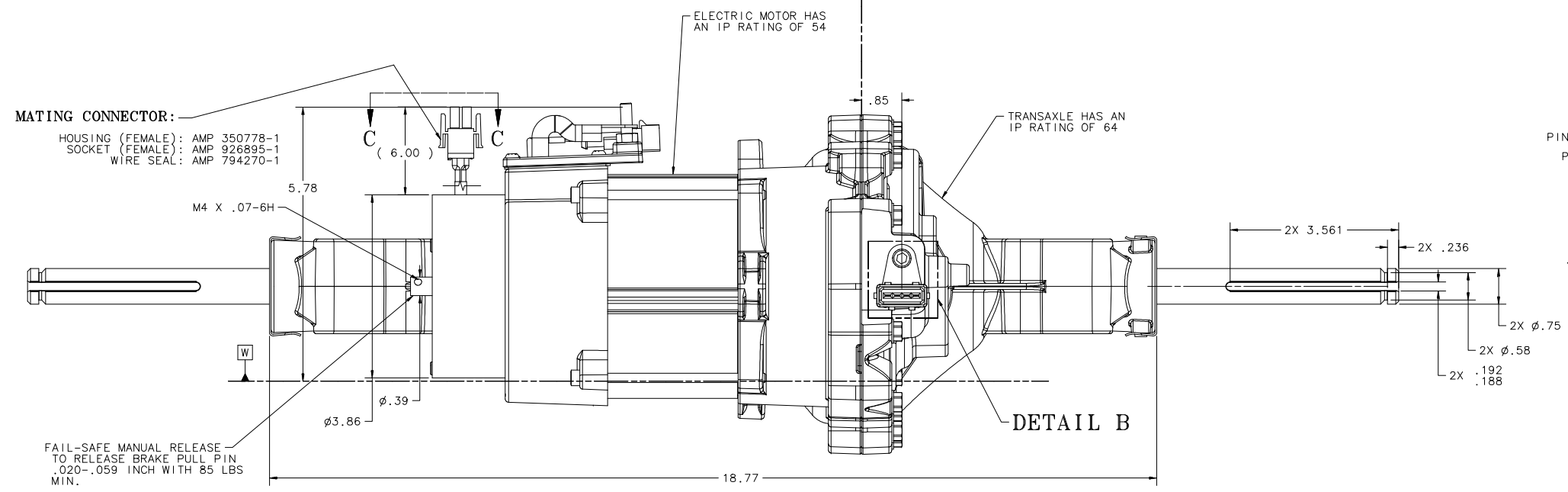
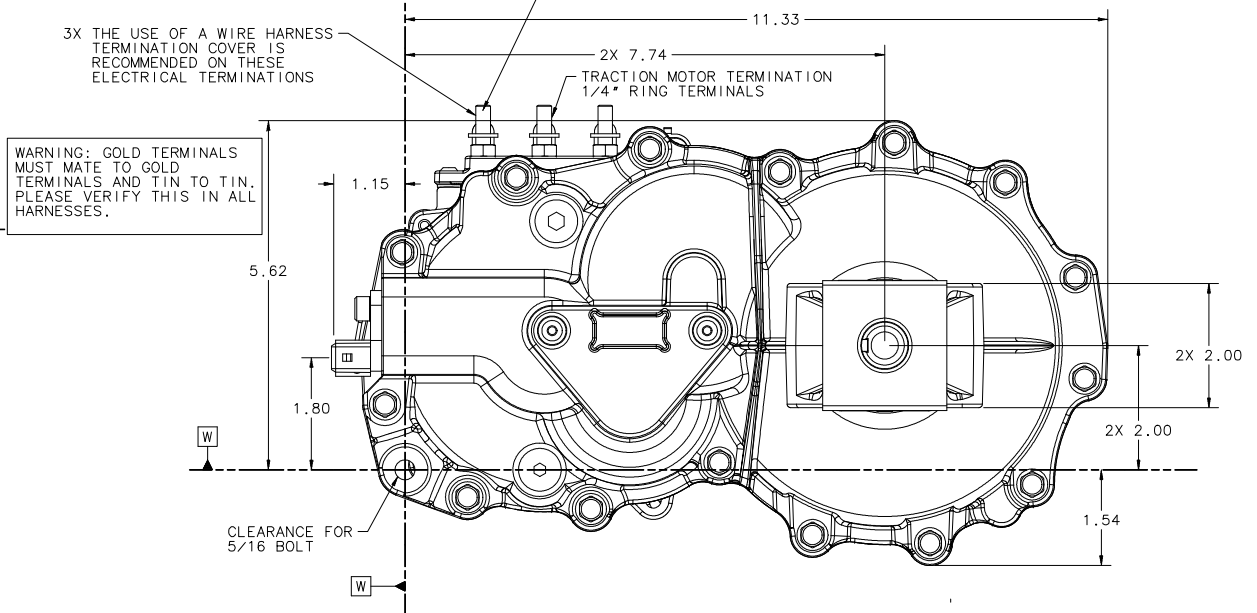
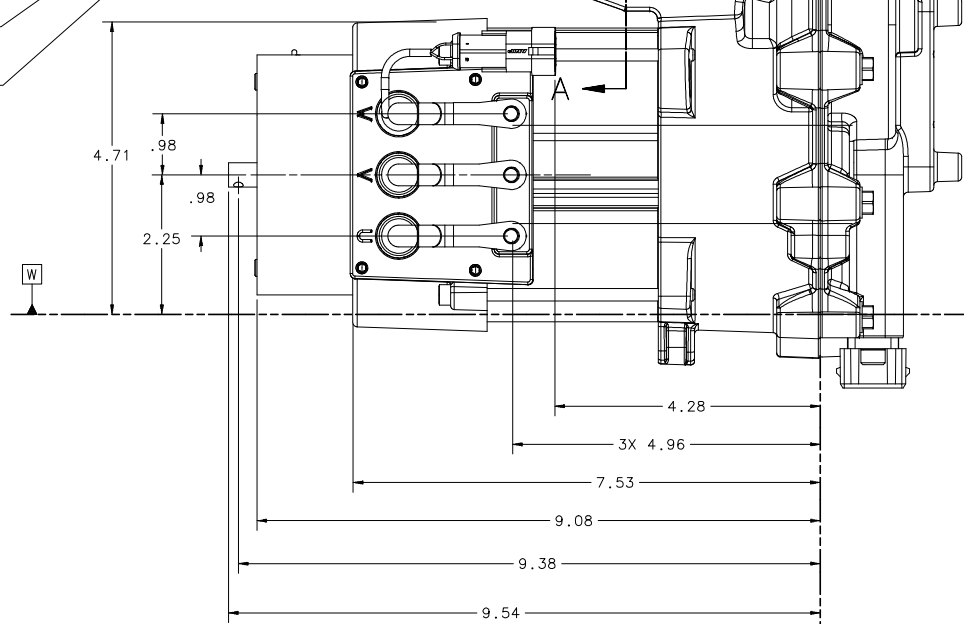
VIEW C-C
 SCALE 2:1

MOTOR TEMPERATURE SENSOR CONNECTION
 1 = PIN 1 WHITE (-)
 2 = PIN 2 RED (+)

MATING CONNECTOR: AMP 282080-1
 MATING PIN: AMP 282403-1
 WIRE SEAL: AMP 281934-2
 WIRE: USE 20 AWG



VIEW A
 SCALE 2:1



SPEED SENSOR
 MATING CONNECTOR: AMP C-282192
 MATING PINS: AMP 929940-1
 WIRE SEAL: AMP 828904-1
 WIRE: USE 20 AWG

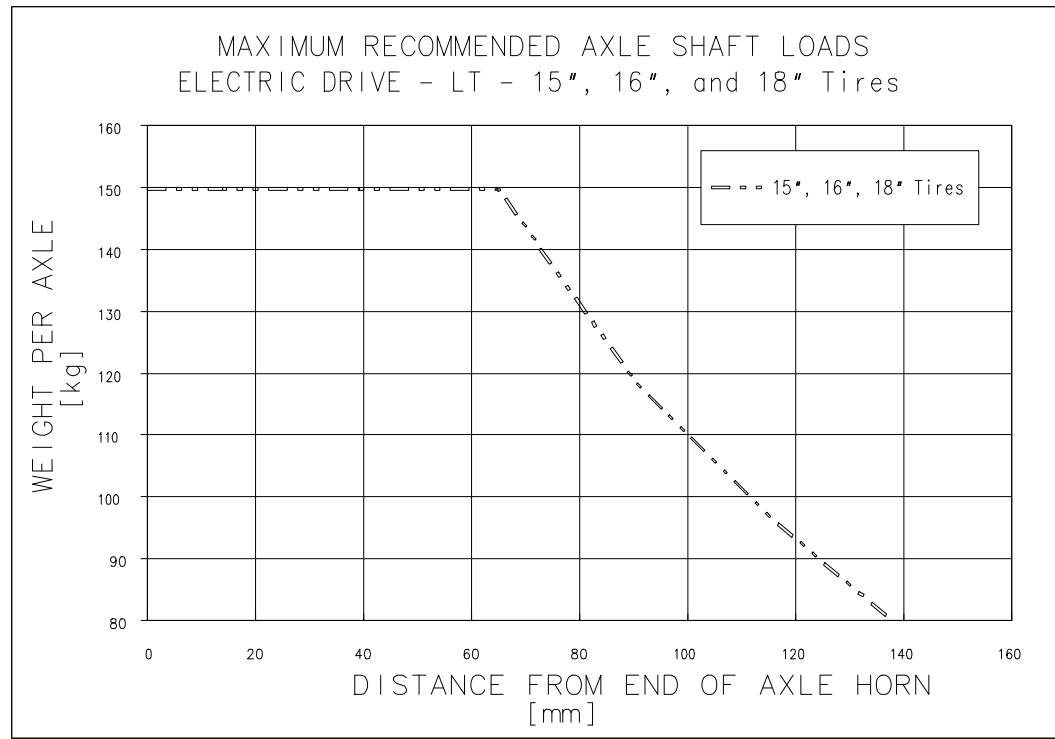
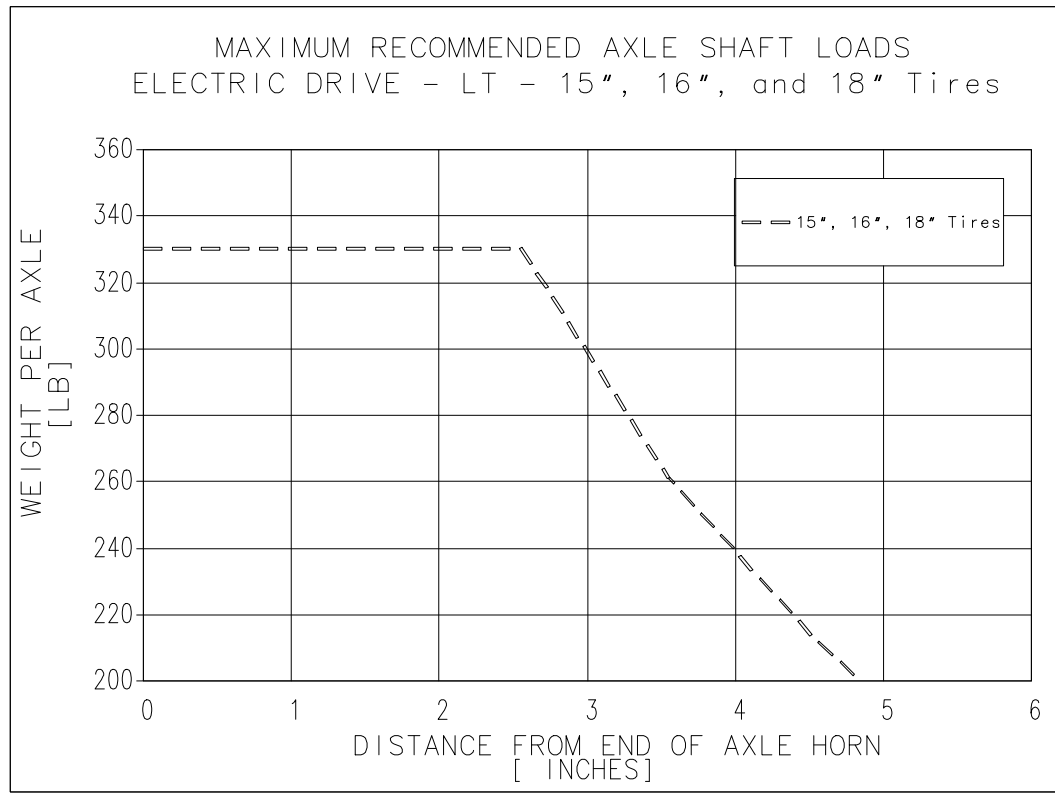
PIN 4 (B)
 PIN 3 (-)
 PIN 2 (A)
 PIN 1 (+)

DETAIL B
 SCALE 2:1

NOTE: A MANUAL BRAKE RELEASE SWITCH IS REQUIRED. IF THIS MANUAL BRAKE BYPASS IS USED, SEE *MANUAL BRAKE RELEASE SWITCH* ON SCHEMATIC ON PAGE 4.

TIRE SIZE (IN)	OVERALL RATIO	MAXIMUM WEIGHT ON DRIVE TIRES (LBS)	CONTINUOUS OPERATING TORQUE (FT-LB)	PEAK TORQUE (FT-LB)
18"	45.11	694	80	322
16"	45.11	694	80	322
15"	45.11	694	80	322

TIRE SIZE (IN)	OVERALL RATIO	MAXIMUM WEIGHT ON DRIVE TIRES (kg)	CONTINUOUS OPERATING TORQUE (N-m)	PEAK TORQUE (N-m)
18"	45.11	315	109	437
16"	45.11	315	109	437
15"	45.11	315	109	437



WARNING: GOLD TERMINALS MUST MATE TO GOLD TERMINALS AND TIN TO TIN. PLEASE VERIFY THIS IN ALL HARNESSSES.

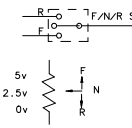
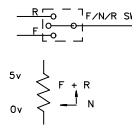
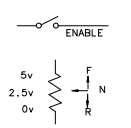
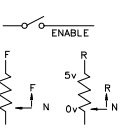
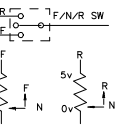
SHEET 2 OF 11

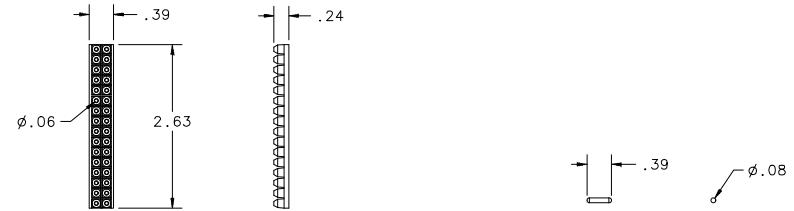
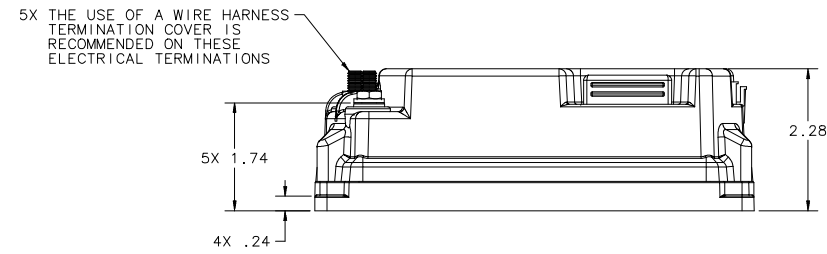
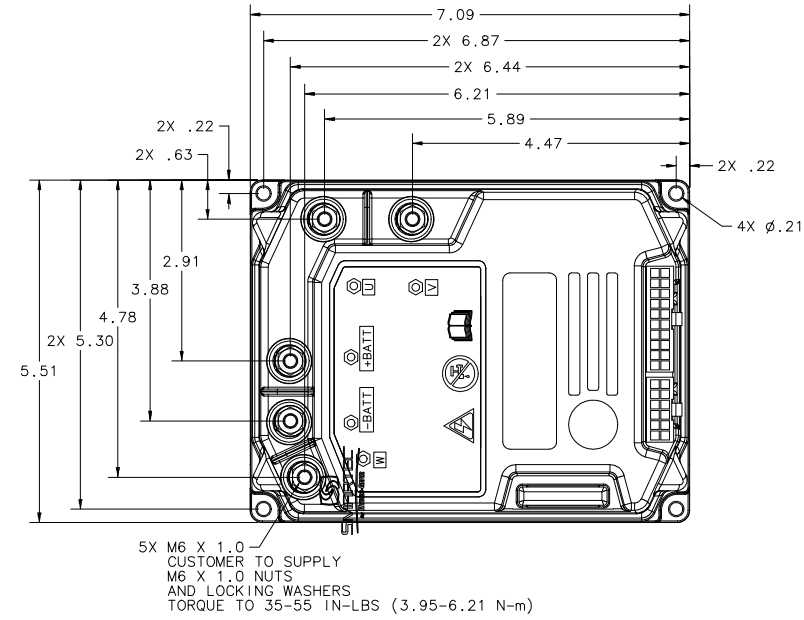
HYDRO-GEAR		FRAME E	I-DEAS
1411 S. HAMILTON ST. BELLVILLE, IL 61951 PHONE (217) 728-2581		DATE DRAWN	01/16/08
NAME ELECTRIC LT SALES DRAWING		DRAWN BY	TR
PART NUMBER 71801		SCALE	FULL
		REVISION DATE	07/16/12

TRACTION CONTROLLER ASS'Y P/N 53317

TECHNICAL DATA

1. APPLICATION: LT
2. MOUNTING REQUIREMENTS
 - a. THE CONNECTOR SIDE OF THE TRACTION CONTROLLER MUST BE PROTECTED FROM BEING SPRAYED WITH DIRECT WATER PRESSURE. SMARTEC TRACTION CONTROLLER COVER P/N 52953 IS AVAILABLE TO HELP PROTECT THE CONTROLLER.
 - b. IT IS RECOMMENDED THAT THE TRACTION CONTROLLER BE MOUNTED IN A VERTICAL OR STANDING POSITION WITH THE A AND B CONNECTORS AT THE BOTTOM. OR HORIZONTALLY WITH THE HEAT SINK FACING UP AND ALL CONNECTORS FACING EARTH.
 - c. THE MINIMUM HEAT SINK DESIGN IS TO USE AN UNPAINTED ALUMINUM PLATE THAT IS APPROXIMATELY (5.7" X 7.9" X 0.5"). APPLYING THERMAL GREASE OR A THERMAL TRANSFER PAD BETWEEN THE TRACTION CONTROLLER MOUNTING PLATE AND THE HEAT SINK IS REQUIRED TO FACILITATE ACCEPTABLE HEAT TRANSFER RATES.
 - d. THE MINIMUM HEAT SINK SPECIFIED IS FOR A MACHINE WEIGHT OF APPROXIMATELY 660lbs (300kg) RUNNING A DRIVE CYCLE OF MOWING, LEVEL 66.67%, TURNING 6.67%, TRANSPORTING 8.33%, 10° CLIMB 5%, 17° CLIMB 1.11%, TOWING SWEEPER 5.56% AND TOWING A CART 6.67% ON A 100°F AMBIENT TEMPERATURE DAY. THE GOAL IS TO ACHIEVE TEMPERATURE STABILIZATION WITHOUT EXCEEDING 78°C (172.4°F) INTERNAL TEMPERATURE OF THE TRACTION CONTROLLER.
3. SPECIFICATIONS:
 - a. CONTROLS A SINGLE SMARTEC ELECTRIC LT TRANSAXLE.
 - b. INTERNAL HOUR METER CAN BE DISPLAYED ON THE SMARTEC VEHICLE DISPLAY P/N 53143
 - c. WEIGHT: 3.2LBS
 - d. VOLTAGE: 48VDC
 - e. OPERATING/SWITCHING FREQUENCY: 8kHz
 - f. AMBIENT TEMPERATURE RANGE: -20°F to 110°F
 - g. MAXIMUM CONTROLLER TEMPERATURE: 212°F
 - h. IP 54
 - i. THROTTLE
 - i. THROTTLE OPTIONS

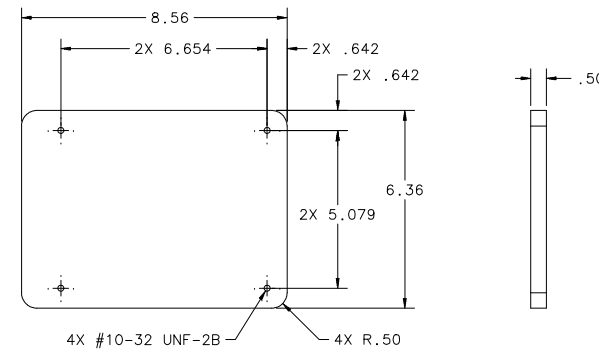
OPTION 1 	OPTION 2 	OPTION 3 	OPTION 4 	OPTION 5 
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 - ii. POTENTIOMETER
 1. SMARTEC OFFERS A COMPLETE SOLUTION FOR OPTION 3 (SMARTEC P/N 53419).
 2. THE THROTTLE UNIT CAN CONSIST OF A POTENTIOMETER OR A HALL EFFECT DEVICE. THE SENSOR SHOULD BE A 3-WIRE CONFIGURATION. POTENTIOMETER VALUE SHOULD BE IN THE 0.5 - 10 kΩ RANGE; GENERALLY, THE LOAD SHOULD BE IN THE 1.5mA to 30mA RANGE. FAULTS CAN OCCUR IF IT IS OUTSIDE THIS RANGE.
 3. THE PROCEDURE FOR CALIBRATING THE CONTROLLER WITH THE MINIMUM AND MAXIMUM USEFUL THROTTLE RANGE IS CARRIED OUT USING THE SMARTEC CALIBRATION TOOL P/N 53096. THIS PROCEDURE WILL BE REQUIRED ON EVERY VEHICLE MANUFACTURED, PRIOR TO INITIAL OPERATION.
 - iii. MICROSWITCHES
 1. THE THROTTLE MICROSWITCHES MUST HAVE A CONTACT RESISTANCE LOWER THAN 0.1Ω AND A LEAKAGE CURRENT LOWER THAN 100uA.
 2. WITH FULL LOAD CONNECTED, THE VOLTAGE BETWEEN THE SWITCH CONTACTS MUST BE LOWER THAN 0.1V.
 3. THE MICROSWITCHES SEND A VOLTAGE SIGNAL TO THE TRACTION CONTROLLER WHEN A DRIVE REQUEST IS MADE.
4. VEHICLE PERFORMANCE PARAMETERS
 - a. A TRACTION CONTROLLER VEHICLE MODEL NUMBER WILL BE ASSIGNED TO EACH UNIQUE SET OF VEHICLE PERFORMANCE PARAMETERS.
 - i. TRACTION CONTROLLER VEHICLE MODEL NUMBERS WILL BE ASSIGNED BY SMARTEC AS REQUIRED. THE MODEL NUMBERS WILL BE A 5 DIGIT NUMBER CONSISTING OF A SEQUENCE OF DIGITS RANGING FROM 1 TO 4.
 - ii. THIS MODEL NUMBER WILL BE REQUIRED TO BE ENTERED INTO EACH VEHICLE'S TRACTION CONTROLLER, UPON INITIAL POWER UP, USING THE SMARTEC CALIBRATION TOOL P/N 53096.
5. WIRE HARNESS REQUIREMENTS
 - a. IT IS NECESSARY TO USE A MAIN CONTACTOR IN-LINE TO THE CONTROLLER'S +48 VOLT POWER INPUT TO PROTECT THE CONTROLLERS AGAINST REVERSE BATTERY POLARITY AND FOR SAFETY REASONS. SMARTEC OFFERS A MAIN CONTACTOR P/N 53082.
 - b. CONNECTOR *A* MATING CONNECTOR IS MOLEX P/N 0039012120 WITH MOLEX TERMINAL P/N 5556 GOLD PLATED.
 - c. CONNECTOR *B* MATING CONNECTOR IS MOLEX P/N 0039012200 WITH MOLEX TERMINAL P/N 5556 GOLD PLATED.
 - d. CONNECTOR *A* AND *B* REQUIRE WIRE SEAL SMARTEC P/N 53135 (ONE 32 HOLE WIRE SEAL WILL BE CUT TO CREATE BOTH CONNECTOR SEALS).
 - e. ALL EMPTY CONNECTOR CAVITIES MUST BE PLUGGED USING SMARTEC CONNECTOR CAVITY PLUG P/N 53159
 - f. ALL CONTROLLER BOLT CONNECTIONS REQUIRE 1/4" (6mm) RING TERMINALS.
 - g. ALL WIRES CONNECTED TO CONNECTORS *A* AND *B* MUST BE 20 AWG MINIMUM.
 - h. ALL WIRES CONNECTED TO -B, +B, U, V, W, AND ALL WIRES CONNECTED BETWEEN THE BATTERIES MUST BE 5 AWG (.025in² [16mm²] CROSS SECTIONAL AREA) MINIMUM.
 - i. FOR OPTIMUM CONTROLLER PERFORMANCE, THE CABLES TO THE BATTERY SHOULD BE RAN SIDE BY SIDE AND AS SHORT AS POSSIBLE.
 - j. CAN-BUS WIRING MUST BE SHIELDED, WITH SHIELD TIED TO VEHICLE CHASSIS OR BATTERY GROUND. CAN-BUS WIRING MUST *NOT* BE ROUTED ALONG POWER WIRES. CAN-BUS WIRES MAY CROSS POWER WIRES PERPENDICULARLY, BUT MAY NOT RUN IN PARALLEL.
6. PROTECTION FEATURES
 - a. PROTECTION AGAINST ACCIDENTAL START
 - b. IF THE CONTROLLER TEMPERATURE EXCEEDS 173°F, THE MAXIMUM CURRENT IS REDUCED IN PROPORTION TO THE THERMAL INCREASE. THE CONTROL WILL SHUTDOWN COMPLETELY IF THE TEMPERATURE REACHES 212°F
 - c. IF MOVEMENT IS COMMANDED WITH NO RESPONSE, THE VEHICLE WILL SHUTDOWN.
 - d. LOW BATTERY SHUTDOWN - 80% DISCHARGE
7. EMI TESTING:
 - a. IT IS RECOMMENDED THAT COMPLETE EMC AND EMI TESTING OF ALL VEHICLES BE PERFORMED BEFORE PRODUCTION RELEASE.



WIRE SEAL P/N 53135

CAVITY PLUG P/N 53159

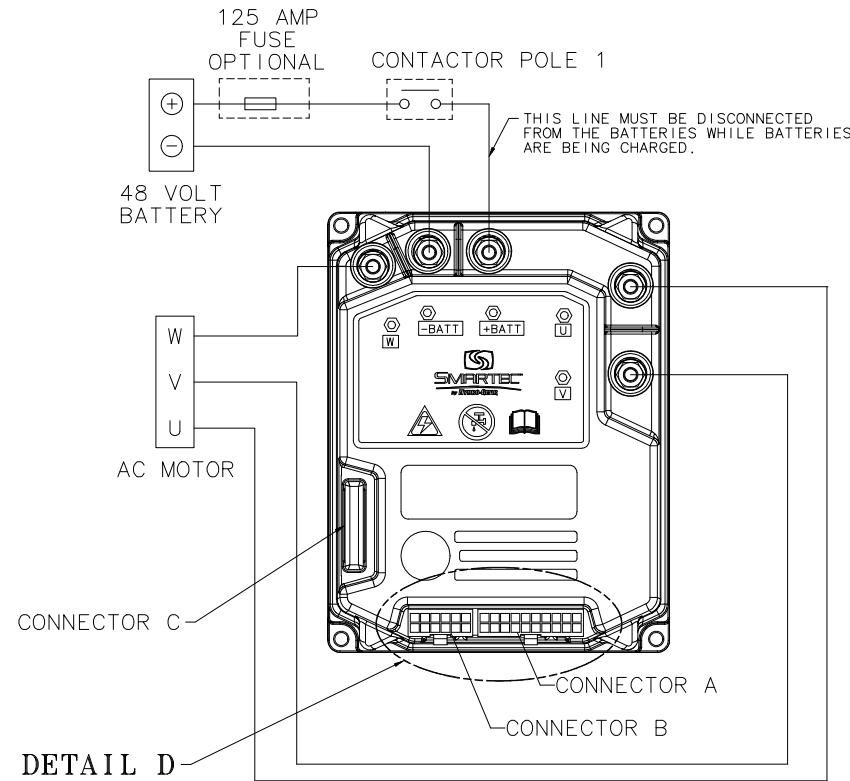
WARNING: GOLD TERMINALS MUST MATE TO GOLD TERMINALS AND TIN TO TIN. PLEASE VERIFY THIS IN ALL HARNESSSES.



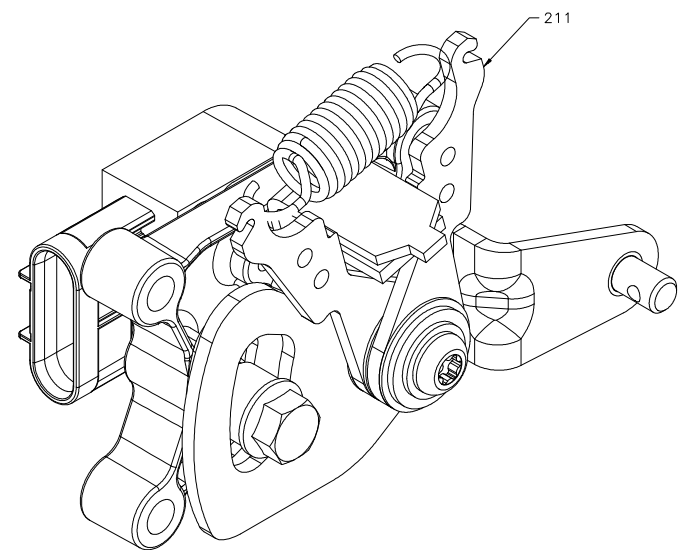
HEAT SINK P/N 54103

TRACTION CONTROLLER ASS'Y P/N 53317

WARNING: IF THE MANUAL "BRAKE RELEASED" SWITCH TIED TO B3 AND B4 IS NOT ACTIVATED WHEN THE FAIL-SAFE BRAKE IS MANUALLY ACTUATED, THE VEHICLE WILL STILL BE ENABLED BUT NOT SAFETY PROTECTED. THIS SWITCH IS REQUIRED.



DETAIL D
SCALE 2:1

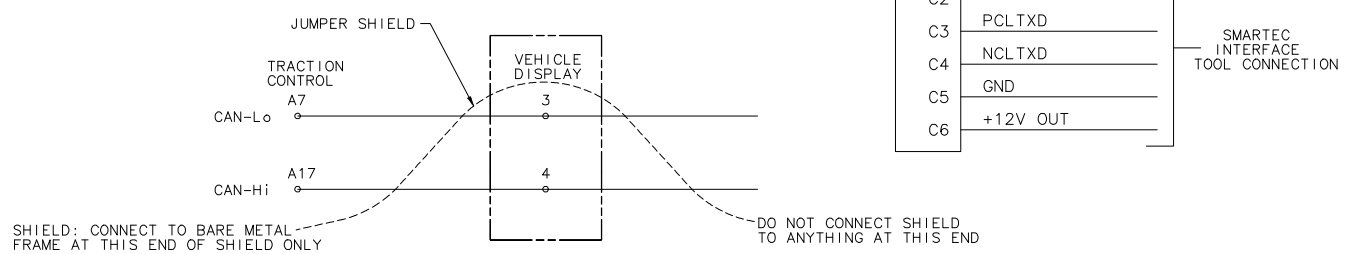


ITEM	COMPONENT	DESCRIPTION	QTY
211	71904	KIT, BRACKET RTN	1

CONNECTOR	MATING CONNECTOR	WIRE SEAL
A	MOLEX TERMINAL P/N 39-00-0164-5556 GSPL	SMARTEC P/N 53135
B	MOLEX TERMINAL P/N 39-00-0164-5556-GSPL	SMARTEC P/N 53135
C	SMARTEC HAND-HELD CONSOLE (53096)	N/A

NOTE: ALL EMPTY CONNECTOR CAVITIES MUST BE PLUGGED USING SMARTEC CONNECTOR CAVITY PLUG P/N 53159.

CAN BUS WIRING REQUIREMENT:



SHIELD: CONNECT TO BARE METAL FRAME AT THIS END OF SHIELD ONLY

DO NOT CONNECT SHIELD TO ANYTHING AT THIS END

WARNING: GOLD TERMINALS MUST MATE TO GOLD TERMINALS AND TIN TO TIN. PLEASE VERIFY THIS IN ALL HARNESSSES.

HYDRO-GEAR

1411 S. HAMILTON ST., BELLVILLE, IL 61951 PHONE (217) 728-2581

NAME ELECTRIC LT SALES DRAWING

DATE DRAWN 01/16/08
DRAWN BY TB
SCALE FULL
REVISION DATE 07/16/12

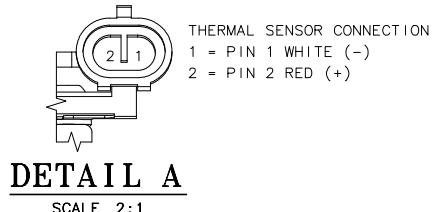
FRAME E 1-DEAS
PART NUMBER 71801

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DATA FOR EXTERNAL INVOLUTE SPLINE

ANSI 92.1-1970	TOLERANCE CLASS 6
TYPE OF FIT	FILLET ROOT SIDE
NUMBER OF TEETH	21
SPLINE PITCH	48/96
PRESSURE ANGLE	45°
BASE DIAMETER	.3093592 REF
PITCH DIAMETER	.4375000 REF
MAJOR DIAMETER	.455/.458
FORM DIAMETER	.424
MINOR DIAMETER	.409 MIN
CIRC TOOTH THK	
MAX EFFECTIVE	.0369
MIN ACTUAL	.0333
FILLET RADIUS	N/A MIN
MIN WIP (IN)	.5000 REF
PIN DIAMETER	.0400
MATING PART No.	XXXXX

SPLINE 1



TEST DATA:

RESISTANCE TEST (Ohms) AT 25°C

MIN	MAX2
0.0135Ω	0.0175Ω

HIPOT TEST (1000V, 2mA AT 50 HZ FOR 2 SECONDS)

	MIN	MAX
LEAKAGE (mA)	0	2
VOLTAGE (VAC)	1000	

MEGGER TEST (500V MEGOHM METER)

MOHMS (MIN)	VOLTAGE
100	500

INDUCTANCE TEST

(L-L)	MIN	MAX
R _{AB}	90 mH	112 mH
R _{BC}	90 mH	112 mH
R _{CA}	90 mH	112 mH

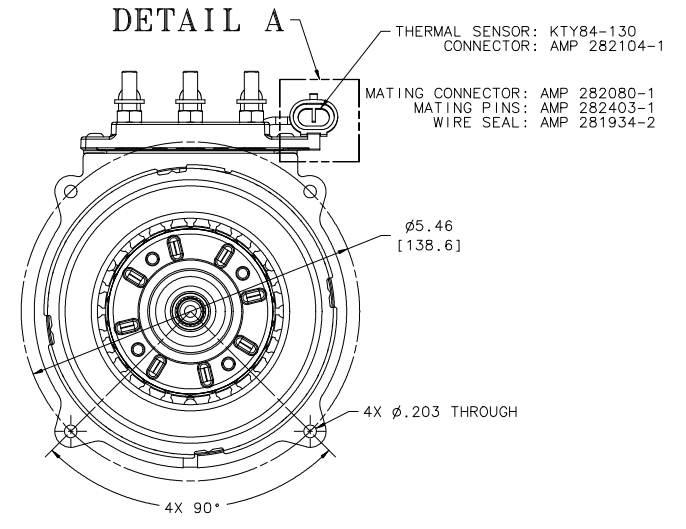
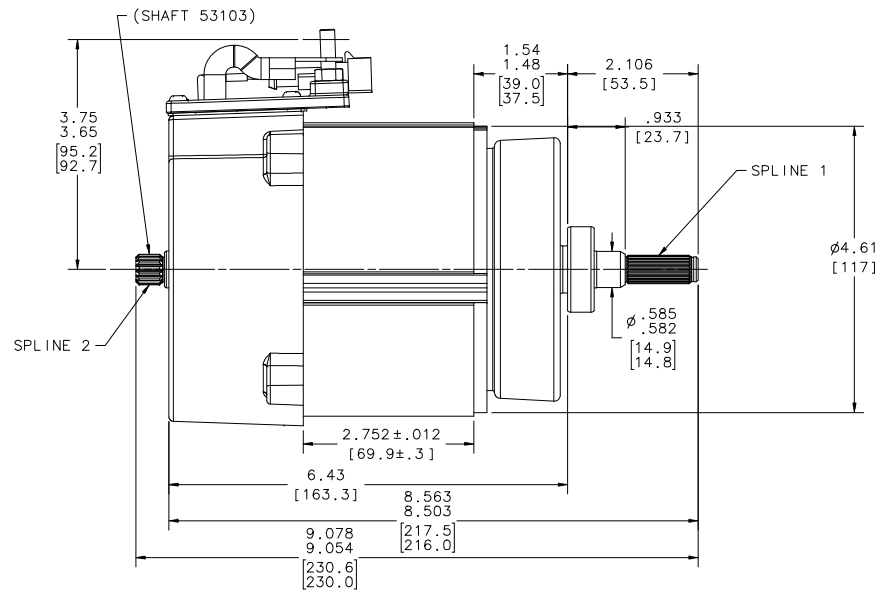
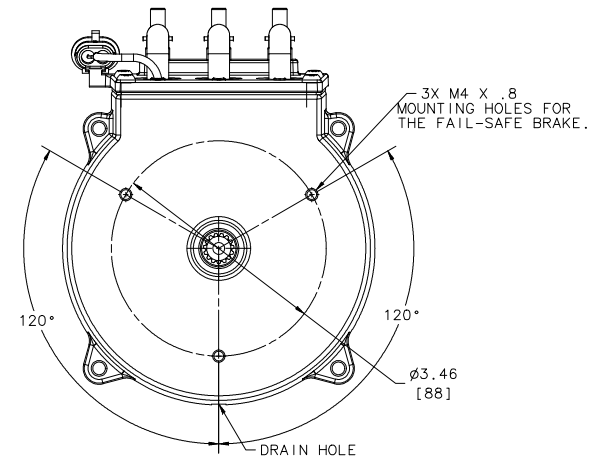
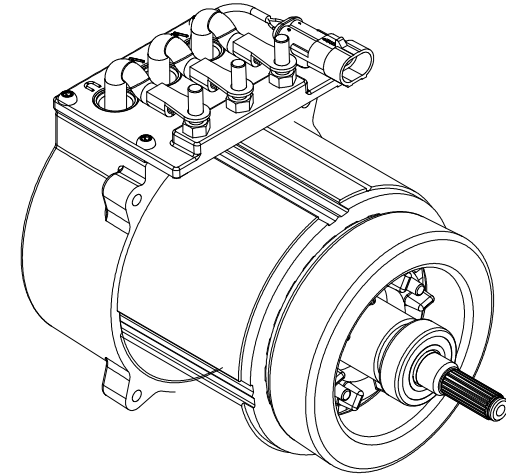
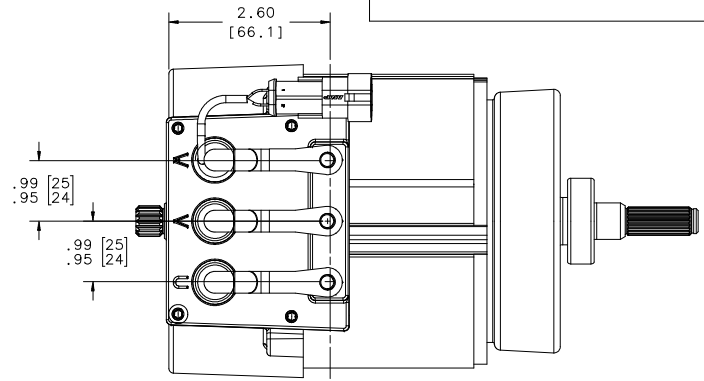
NOTES:

1. MOTOR TYPE: 3 PHASE AC INDUCTION
2. SYSTEM VOLTAGE: 48 VDC
3. MOTOR VOLTAGE: 33 VRMS
4. SPEED RANGE: 0 TO 6000 RPM
5. CONTINUOUS MAXIMUM TORQUE IS 3.4 FT-LBS (1.7kW OR 2.2 HP)
6. TYPICAL DUTY CYCLE: 3685 RPM 1.84 LB-FT
7. INPUT FREQUENCY RANGE: 0 TO 200 HZ
8. EFFICIENCY: >85%
9. OVER TEMP PROTECTION REQUIRED BY USING KTY84-130 TEMP SENSOR
10. MOTOR ENCLOSURE RATING: IP- 54
11. REQUIRED MOTOR LIFE EXPECTANCY: >500 HOURS
12. 1/4" RING TERMINALS ARE TO BE USED TO CONNECT TO THE MOTOR.

DATA FOR EXTERNAL INVOLUTE SPLINE

ANSI 92.1-1970	TOLERANCE CLASS 6
TYPE OF FIT	FILLET ROOT SIDE
NUMBER OF TEETH	15
SPLINE PITCH	32/64
PRESSURE ANGLE	30°
BASE DIAMETER	.4059494 REF
PITCH DIAMETER	.4687500 REF
MAJOR DIAMETER	.495/.489
FORM DIAMETER	.433
MINOR DIAMETER	.395 MIN
CIRC TOOTH THK	
MAX EFFECTIVE	.0491
MIN ACTUAL	.0456
FILLET RADIUS	.009 MIN
MIN WIP (IN)	.5529 REF
PIN DIAMETER	.0600
MATING PART No.	

SPLINE 2



1.7 KW AC INDUCTION MOTOR

SHEET 5 OF 11

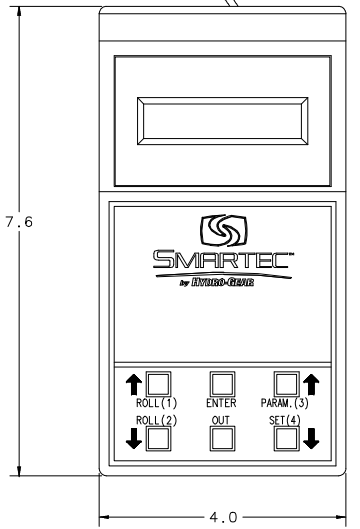
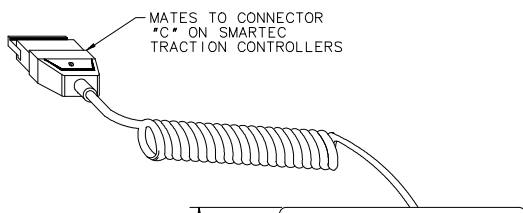
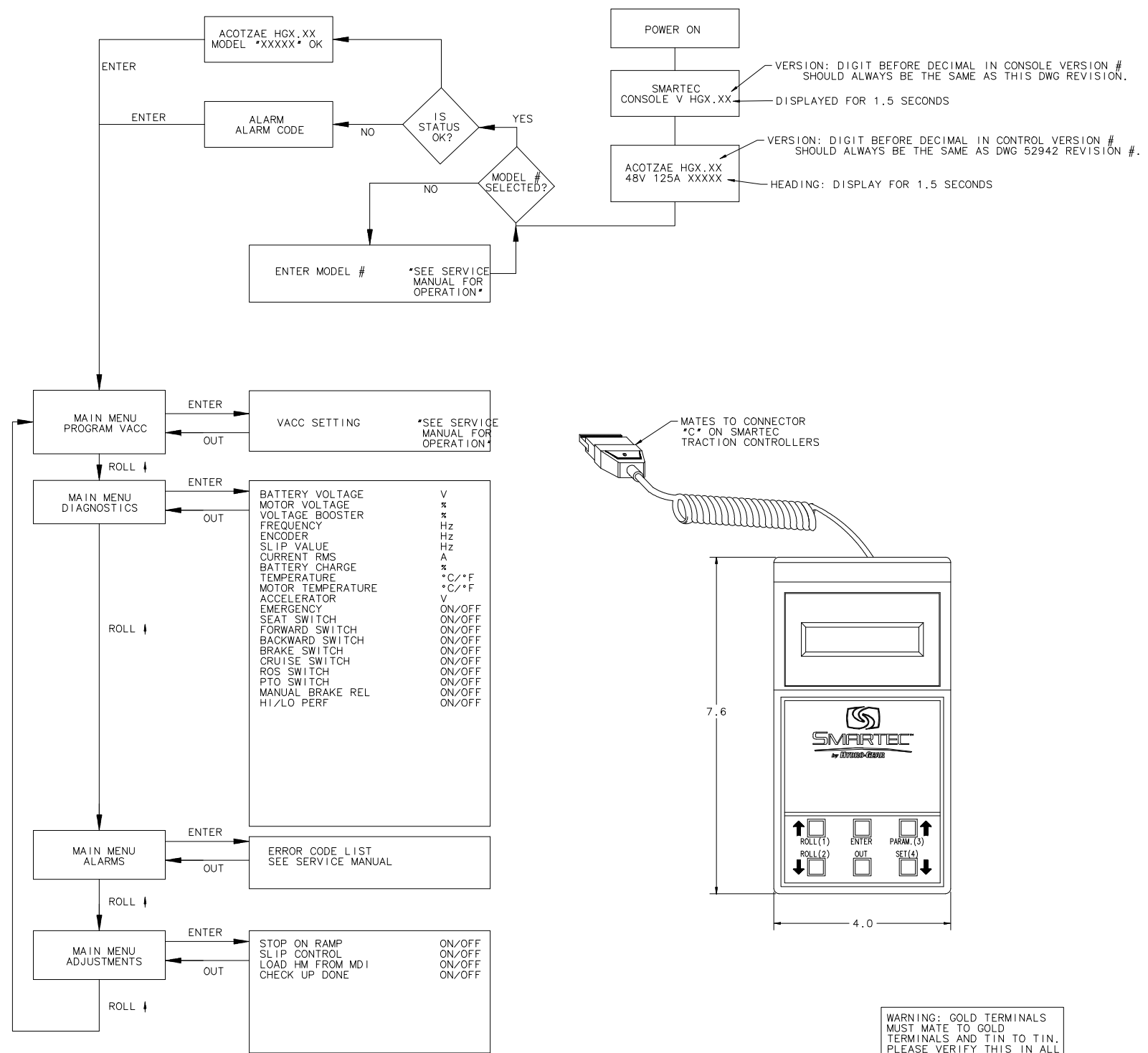
HYDRO-GEAR

1411 S. HAMILTON ST. SULLY, ILL. 61951 PHONE (217) 728-2581

FRAME E	1-DEAS
DATE DRAWN	01/16/08
DRAWN BY	TR
SCALE	FULL
REVISION DATE	07/16/12

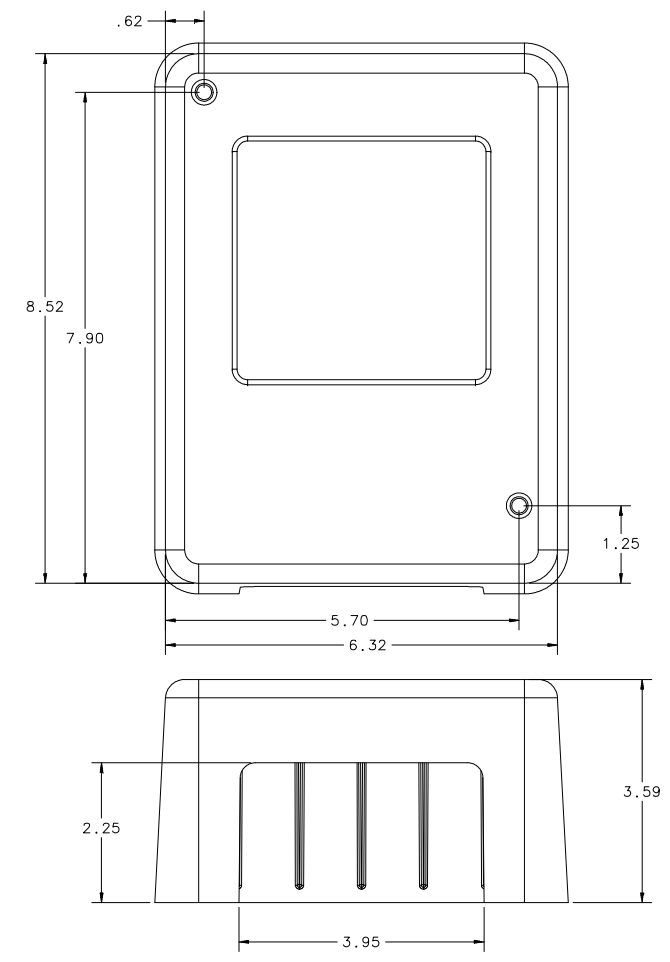
NAME ELECTRIC LT SALES DRAWING PART NUMBER 71801

TECHNICAL DATA
 APPLICATIONS: ELECTRIC DRIVE OEM
 VEHICLE CALIBRATION TOOL.
 ELECTRIC DRIVE SERVICE
 DEALER DIAGNOSTICS TOOL.



WARNING: GOLD TERMINALS MUST MATE TO GOLD TERMINALS AND TIN TO TIN. PLEASE VERIFY THIS IN ALL HARNESSSES.

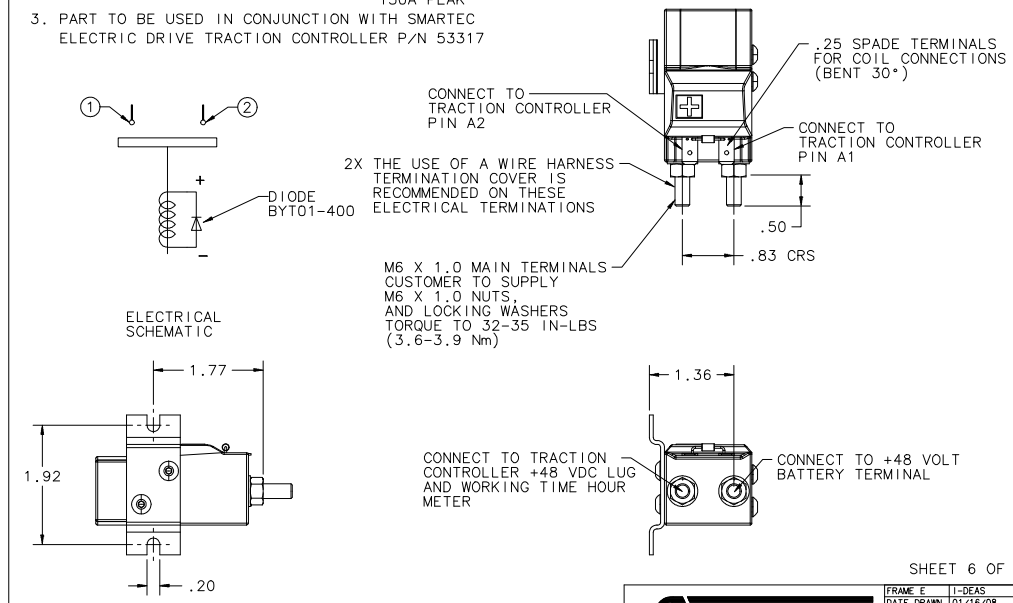
HAND-HELD CONSOLE
 P/N 53096



TRACTION CONTROLLER COVER
 P/N 52953

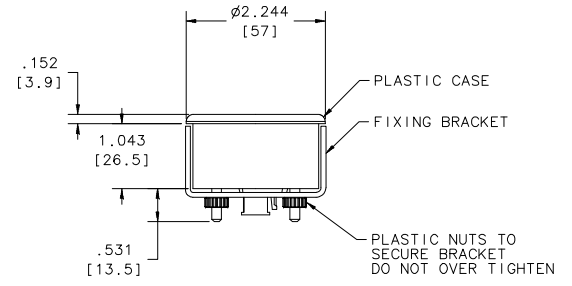
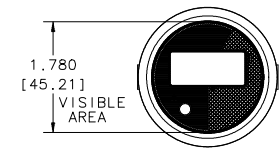
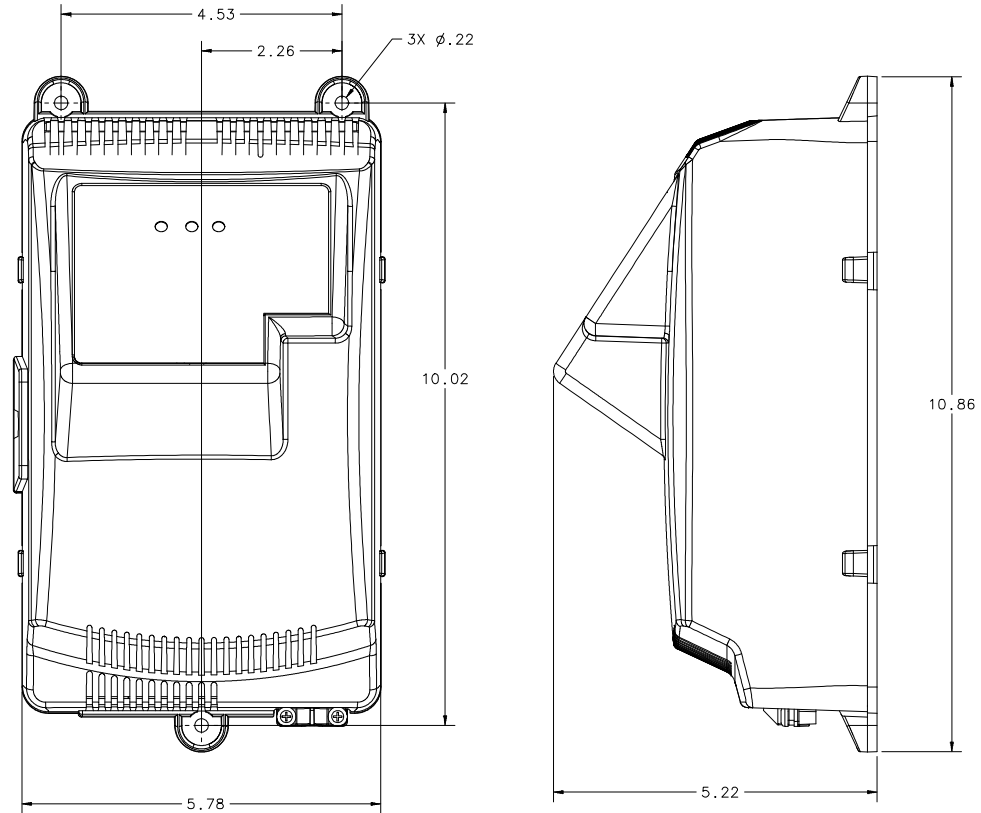
NOTES:

- CONTACTOR ENCLOSURE RATING: IP65.
- PERFORMANCE DATA:
 MAXIMUM RECOMMENDED COIL VOLTAGE: ≤ 28 V, 300mA
 MECHANICAL LIFE: > 5000 CYCLES
 DROP-OUT TIME (N/O CONTACTS TO OPEN): ≤ 50ms
 MAIN CONTACTOR CURRENT RATING: 80A CONTINUOUS
 150A PEAK
- PART TO BE USED IN CONJUNCTION WITH SMARTEC
 ELECTRIC DRIVE TRACTION CONTROLLER P/N 53317



SINGLE POLE CONTACTOR
 P/N 53082

MULTIFUNCTION DIGITAL INTERFACE P/N 53143



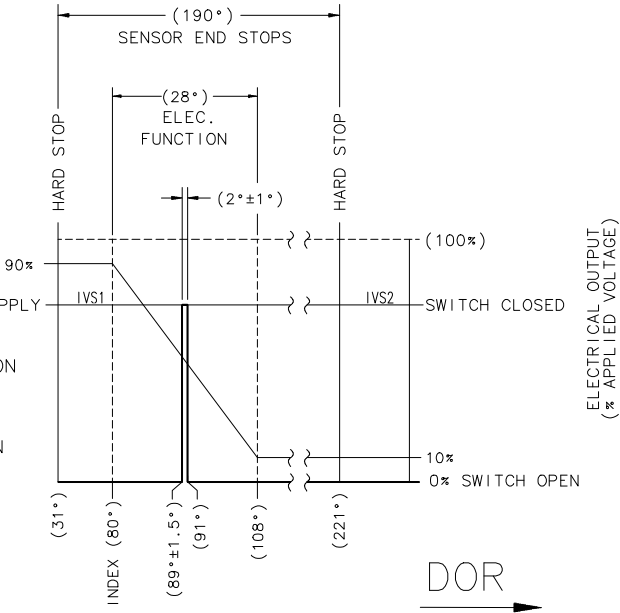
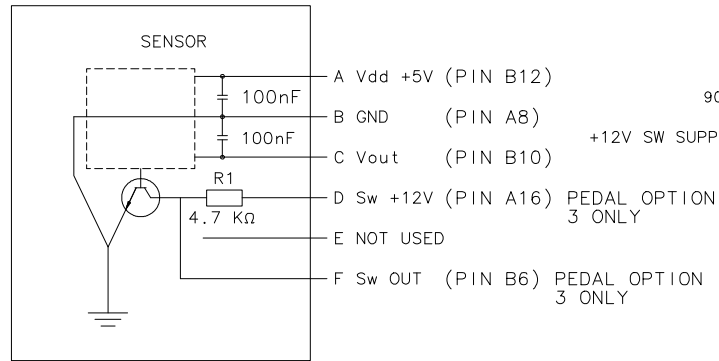
APPLICATION: THE SMARTEC VEHICLE DISPLAY IS A MULTIFUNCTIONAL DASH MOUNTED UNIT WHICH COMMUNICATES VIA CAN-BUS LINK WITH THE SMARTEC TRACTION CONTROLLER TO DISPLAY BATTERY STATE OF CHARGE, MAINTENANCE DUE REMINDERS, OPERATION HOURS, AND VEHICLE ALARMS.
 BATTERY STATE - SMARTEC'S TRACTION CONTROLLER MONITORS BATTERY STATE OF CHARGE AND DISPLAYS THIS VALUE ON THE SMARTEC DISPLAY.
 HOUR METER - SMARTEC'S TRACTION CONTROLLER COUNTS EITHER KEY-ON HOURS OR WORKING HOURS AND STORES THIS VALUE IN PERMANENT MEMORY.
 MAINTENANCE - MAINTENANCE INTERVAL REMINDERS ARE DISPLAYED ON THE SMARTEC DISPLAY.
 ALARM DISPLAY - TRACTION CONTROLLER ALARMS ARE DISPLAYED ON THE SMARTEC DISPLAY ENVIRONMENT - THE SMARTEC DISPLAY IS SEALED TO IP-64.
 INTERFACE - THE SMARTEC DISPLAY USES A 6 PIN MOLEX MINI-FIT, JR. CONNECTOR MOLDED INTO THE CASE. VEHICLE WIRE HARNESS WILL NEED MOLEX MINI FIT CONNECT 6 PIN RECEPT. (5557), WITH FEMALE CRIMP TERMINALS (39-00-0164 5556 GSPL). USE 20 AWG WIRE.

100-240 VAC CHARGER P/N 53693 FOR LEAD ACID BATTERIES 53694 FOR AGM BATTERIES

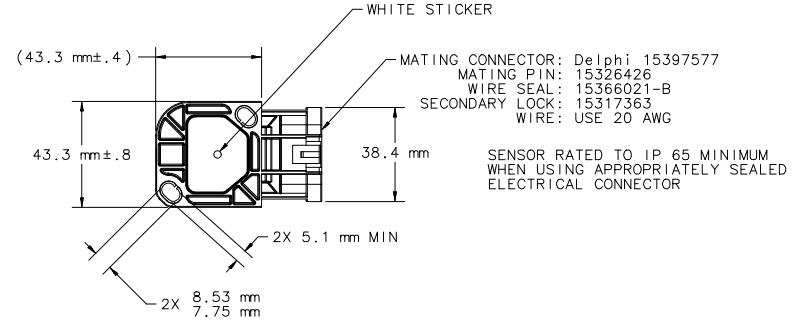
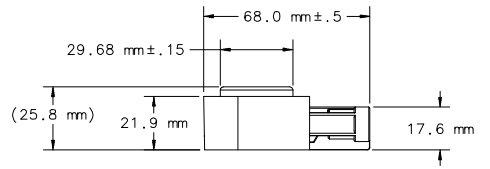
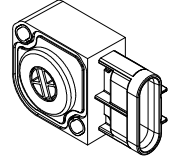
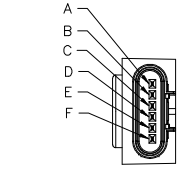
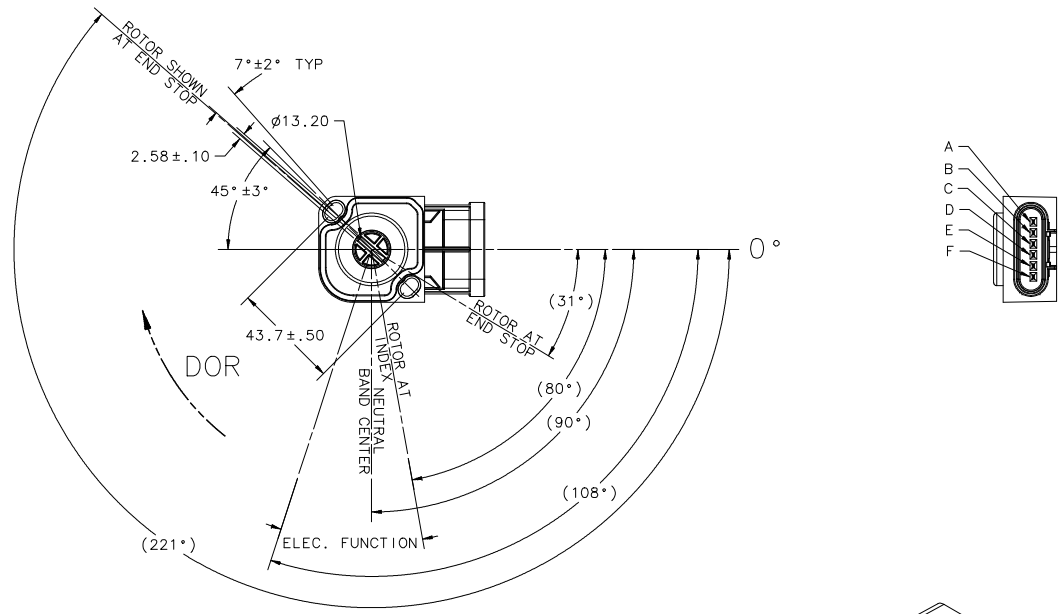
CONNECTOR PIN OUT:
 PIN 1 = +12V (A16)
 PIN 2 = CONTROLLER - BATT
 PIN 3 = CANL (A7)
 PIN 4 = CANH (A17)
 JUMPER PIN 5 TO PIN 6
 MUST USE A SHIELDED TWISTED PAIR CABLE FOR THE WIRES USED ON PIN 3 & PIN 4. SHIELDING TO BE ATTACHED TO VEHICLE FRAME AT ONE END ONLY. SEE CAN-BUS WIRING REQUIREMENT SCHEMATIC ON SHEET 4.

WARNING: GOLD TERMINALS MUST MATE TO GOLD TERMINALS AND TIN TO TIN. PLEASE VERIFY THIS IN ALL HARNESSSES.

ELECTRICAL SCHEMATIC



ELECTRO-MECHANICAL GRAPH FOR SENSOR WITH SWITCHING

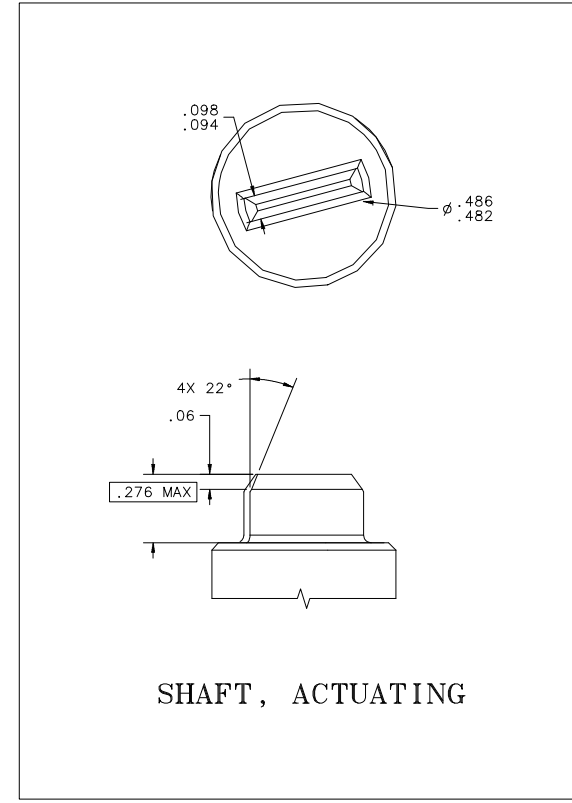


SENSOR, ACCELERATOR W/INTERNAL SWITCHING P/N 53419

SENSOR MOUNT POSITION VERSUS WIRING:

PER THE ELECTRICAL OUTPUT GRAPHS THE VOLTAGE OUTPUT VARIES HIGH TO LOW AS THE SENSOR SLOT IS ROTATED CLOCKWISE WHEN LOOKING INTO THE DRIVE SLOT. IN THIS CONFIGURATION THE FORWARD DIRECTION IS COUNTERCLOCKWISE AND REVERSE IS CLOCKWISE RELATIVE TO THE NEUTRAL ALIGNMENT POSITION. THE ELECTRICAL WIRING SCHEMATICS APPLY WHEN THE SENSORS ARE MOUNTED IN A MANNER THAT PRODUCES THE ROTATION AS DEFINED.

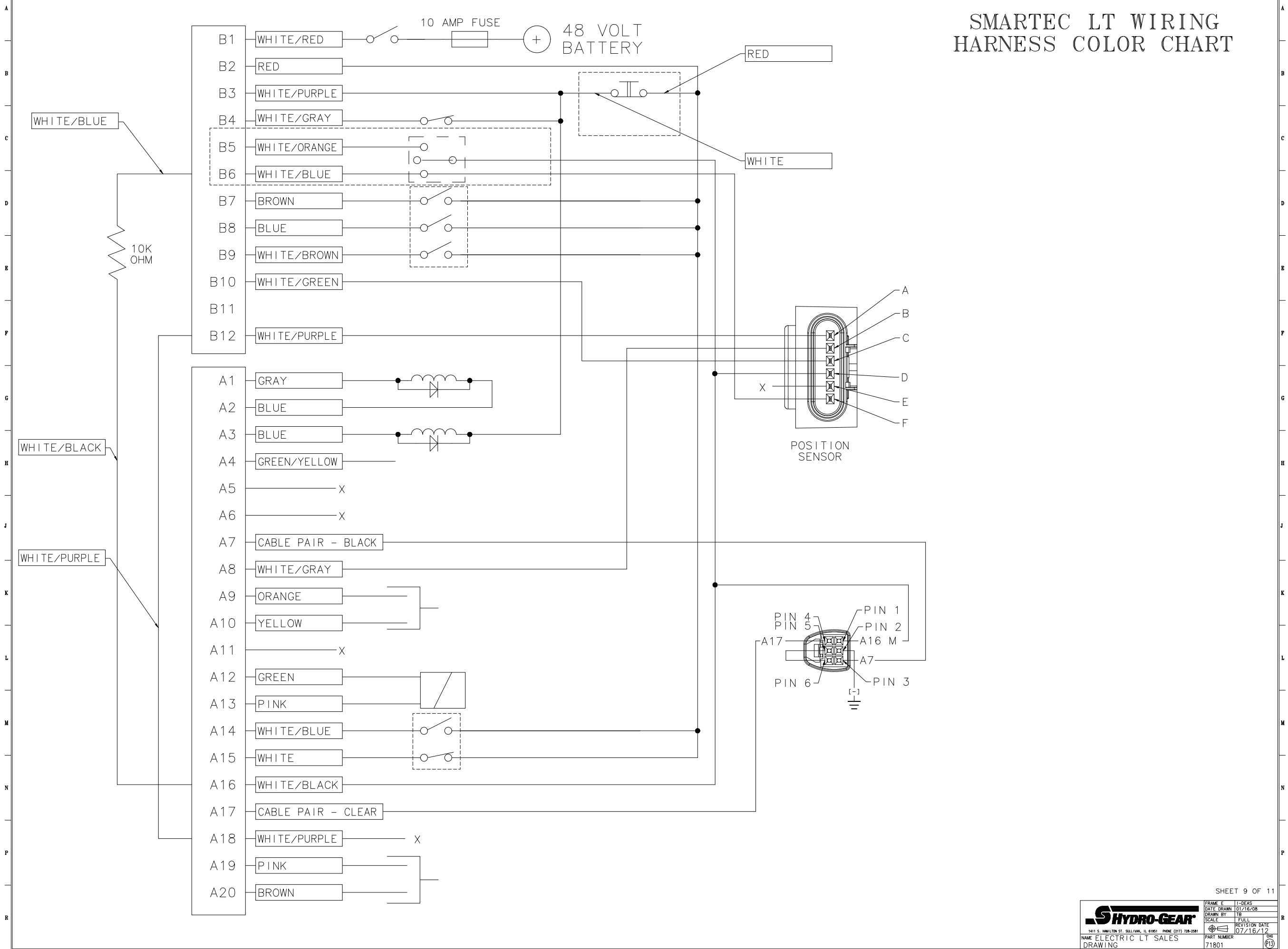
NOTE THAT SENSORS CAN BE MOUNTED IN AN OPPOSING ORIENTATION THAT RESULTS IN A REVERSE OF THE VOLTAGE OUTPUT AS SHOWN IN THE SCHEMATICS. WHEN SENSORS ARE MOUNTED IN THIS MANNER IT WILL BE NECESSARY TO CORRECT THIS BY MODIFYING THE CONTROLLER DEFAULT HARDWARE SETTING.



WARNING: GOLD TERMINALS MUST MATE TO GOLD TERMINALS AND TIN TO TIN. PLEASE VERIFY THIS IN ALL HARNESSSES.

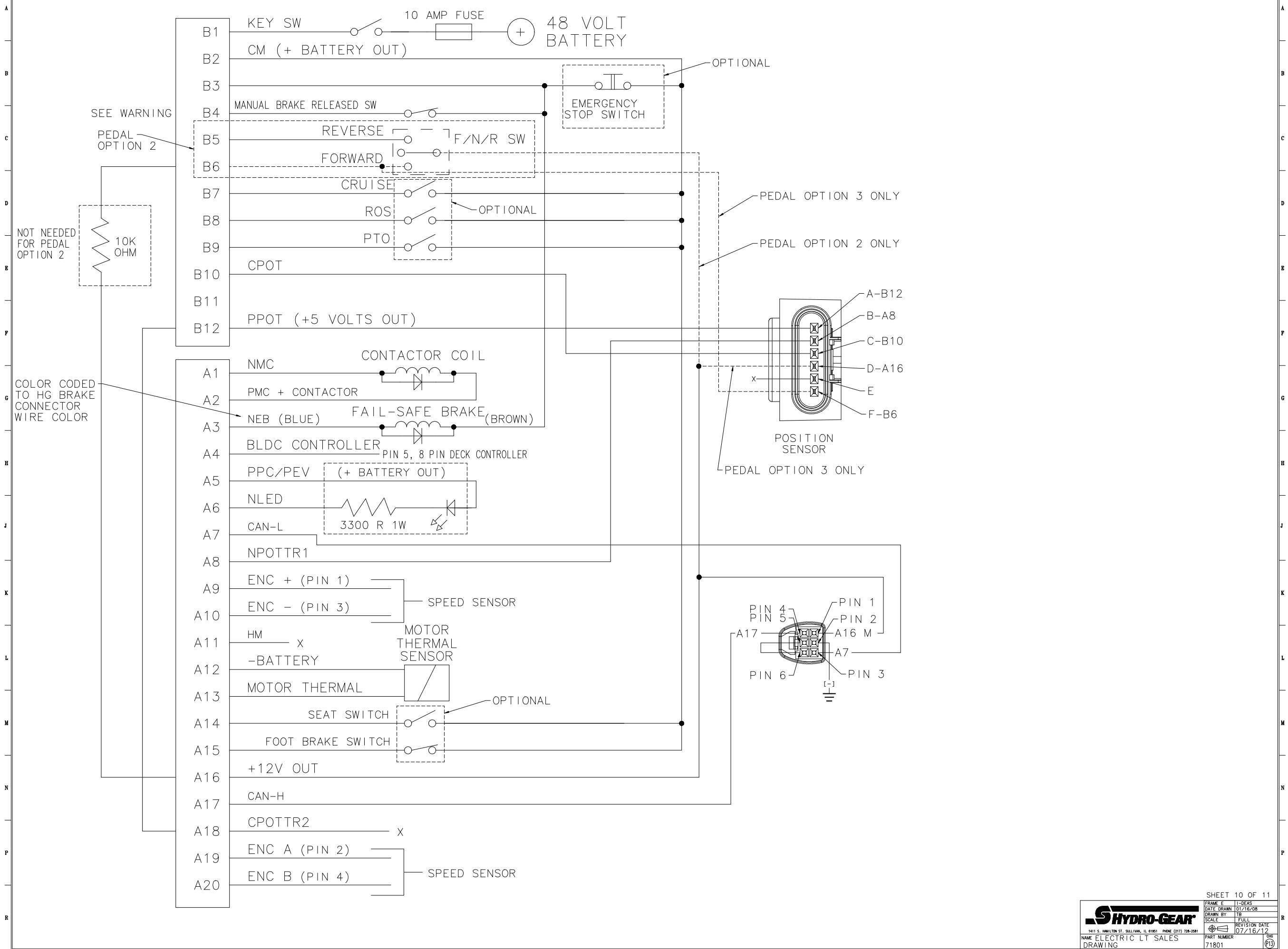
NOTICE - THIS DRAWING CONTAINS HYDRO-GEAR PROPRIETARY INFORMATION. NEITHER RECEIPT NOR POSSESSION THEREOF CONFERS ANY RIGHT TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR PART, ANY SUCH INFORMATION WITHOUT WRITTEN AUTHORIZATION FROM HYDRO-GEAR. THE SPECIFICATIONS AND PRODUCT PROFILE DEPICTED HEREIN ARE APPROXIMATE REPRESENTATIONS SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION. CONSULT YOUR HYDRO-GEAR REPRESENTATIVE TO OBTAIN THE ENGINEERING INFORMATION APPROPRIATE TO YOUR APPLICATION.

SMARTEC LT WIRING HARNESS COLOR CHART



<p>1411 S. HAMILTON ST. SULLY, ILL. 61951 PHONE (217) 728-2581</p> <p>NAME ELECTRIC LT SALES DRAWING</p>	FRAME E	T-DEAS
	DATE DRAWN	01/16/08
	DRAWN BY	TR
	SCALE	FULL
	REVISION DATE	07/16/12
PART NUMBER	71801	

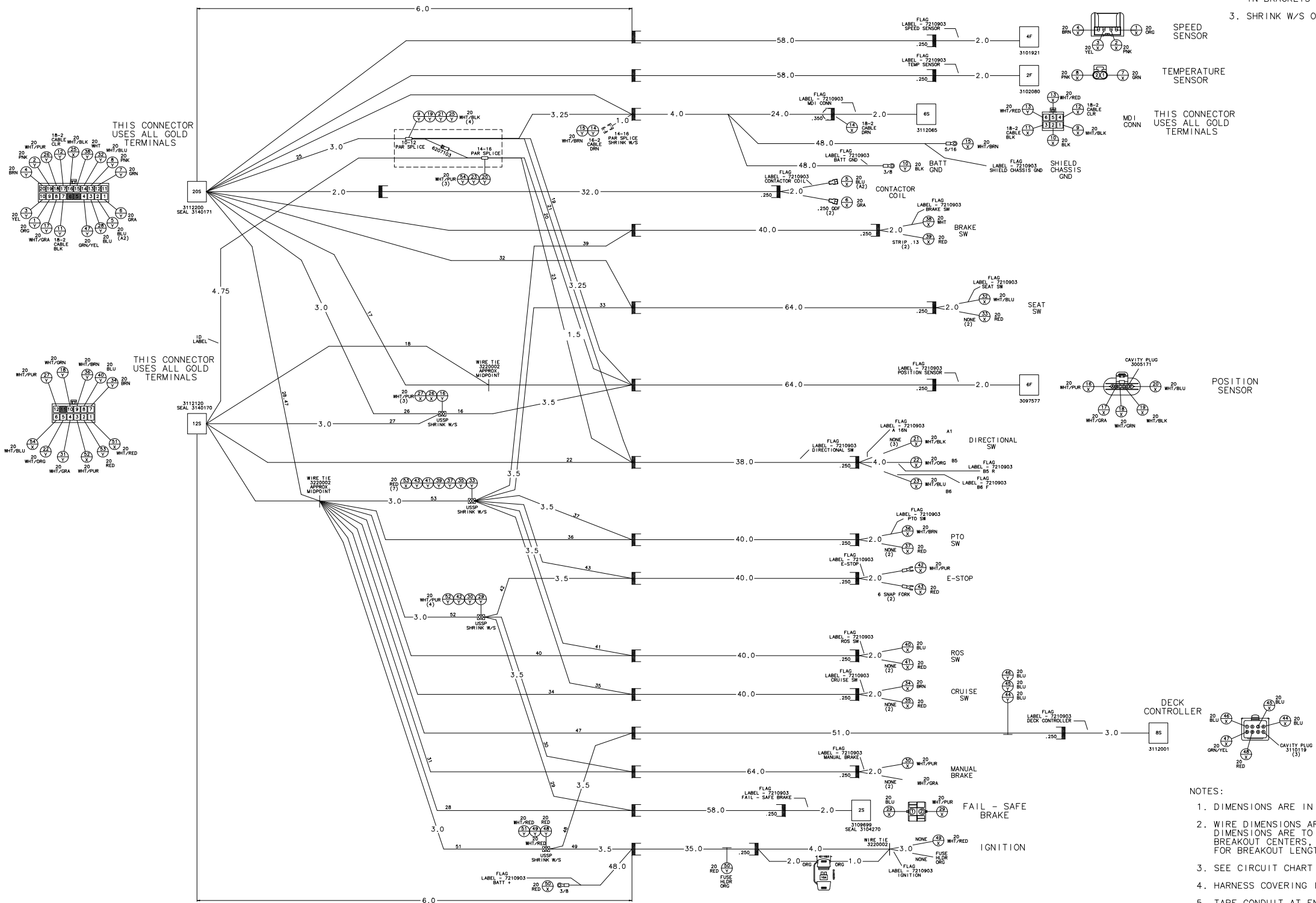
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SHEET 10 OF 11

HYDRO-GEAR		FRAME E	T-DEAS
1411 S. HAMILTON ST. BELLVILLE, IL 61951 PHONE (217) 728-2581		DATE DRAWN	01/16/08
NAME ELECTRIC LT SALES DRAWING		DRAWN BY	TR
PART NUMBER 71801		SCALE	FULL
		REVISION DATE	07/16/12

NOTICE - THIS DRAWING CONTAINS HYDRO-GEAR PROPRIETARY INFORMATION. NEITHER RECEIPT NOR POSSESSION THEREOF CONFERS ANY RIGHT TO REPRODUCE, USE, OR DISCLOSE, IN WHOLE OR PART, ANY SUCH INFORMATION WITHOUT WRITTEN AUTHORIZATION FROM HYDRO-GEAR. THE SPECIFICATIONS AND PRODUCT PROFILE DEPICTED HEREIN ARE APPROXIMATE REPRESENTATIONS SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION. CONSULT YOUR HYDRO-GEAR REPRESENTATIVE TO OBTAIN THE ENGINEERING INFORMATION APPROPRIATE TO YOUR APPLICATION.



- NOTES:
1. HRNS IS BRAIDED.
 2. LABEL CKT 5 CONTINUOUSLY EVERY 2.0" PER CUT CARDS AND CKT CHART. THE NUMBER IN BRACKETS IS THE CUSTOMER LABEL NUMBER.
 3. SHRINK W/S ON ALL SPLICES.

- NOTES:
1. DIMENSIONS ARE IN INCHES.
 2. WIRE DIMENSIONS ARE TO WIRE ENDS. HARNESS DIMENSIONS ARE TO END OF COVERING, BETWEEN BREAKOUT CENTERS, AND TO SIDE OF COVERING FOR BREAKOUT LENGTHS.
 3. SEE CIRCUIT CHART FOR CIRCUIT DETAILS.
 4. HARNESS COVERING IS CONVOLUTED CONDUIT.
 5. TAPE CONDUIT AT ENDS AND BREAKOUTS.
 6. CONNECTOR DETAILS SHOWN FROM WIRE ENTRY END.
 7. ALL NOTES ARE FOR STANDARD HRNS ASS'Y UNLESS OTHERWISE SPECIFIED.