



Electronic Products Design, Inc.

PO Box 1569 • 2554 Lake Wendell Road • Wendell, NC 27591
Phone (919) 365-9199 • Fax (919) 365-7005
Email: sales@epd-inc.com • Website: www.epd-inc.com

AIRSYS-4/1

SYSTEM ITEM LIST TO CHECK UPON THE RECEIPT OF THE SYSTEM

ITEM	QUANTITY	EPD PN	DESCRIPTION	NOTES
1	1	081-200031	Solenoid Valve Assembly	Connected to Compressor
2	1	000-200035	Air Supply Control	Grey Box
3	1	081-200031	Electrode	

NOTE:

1. The pressure switch for the well pump, shown on the schematic is not supplied by EPD. The pressure switch is selected and purchased by the installer due to the numerous pressure ranges that may apply to your situation.
2. The solenoid valve has three ports. When a compressor without an air tank is used, connect port 2 on the compressor side, to unload the compressor. When a compressor with a tank is used, connect port 2 on the tank side facing the check valve.
3. If installation guidance is required, please call.



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AIRSYS-4/1

000-200035

This AIR CHARGE SYSTEM is a modular, automatic air charge system, to balance the air to water ratio for hydro pneumatic water tanks. This will eliminate waterlogged tanks, save pumps and pressure switch damage due to excessive cycling. The pressure switch and the air supply control are electronically interlocked to better control the water level in the storage tank.

The control provides a contact for the well pump starter solenoid, and a contact controlled 12VDC for the air supply solenoid to let air into the tank. A built in delay will prevent cycling of the well pump.

The input voltage is 120 VAC.

The solenoid voltage is 12 VDC.

Maximum System Pressure 85 PSI.

System Operation:

Start up from 0 PSI and empty tank: Place well pump switch in the "AUTO" position.

The well pump will start and run until maximum water level in the tank is reached. At this point, the pump will stop and the air supply will be activated and operate until the system cut off pressure is reached.

Starting from the system cut off pressure and max. water level:

As water is withdrawn from the system, water level and air pressure in the tank will decrease until the well pump cut in pressure is reached. The well pump will now start and run until the system cut off pressure or max. water level is reached. If max. water level is reached first; the air supply will be activated until the system cut of pressure is satisfied.

Air withdrawn or lost from the pressure tank without the accompanying lowering of the water level will be replaced automatically by the air charge system as soon as the pump cut in pressure is reached. Should the hand operation of the pump result in a higher than max. water level in the tank, the control will restore the proper water to air ratio on the next automatic cycle.



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AIRSYS-4/1.

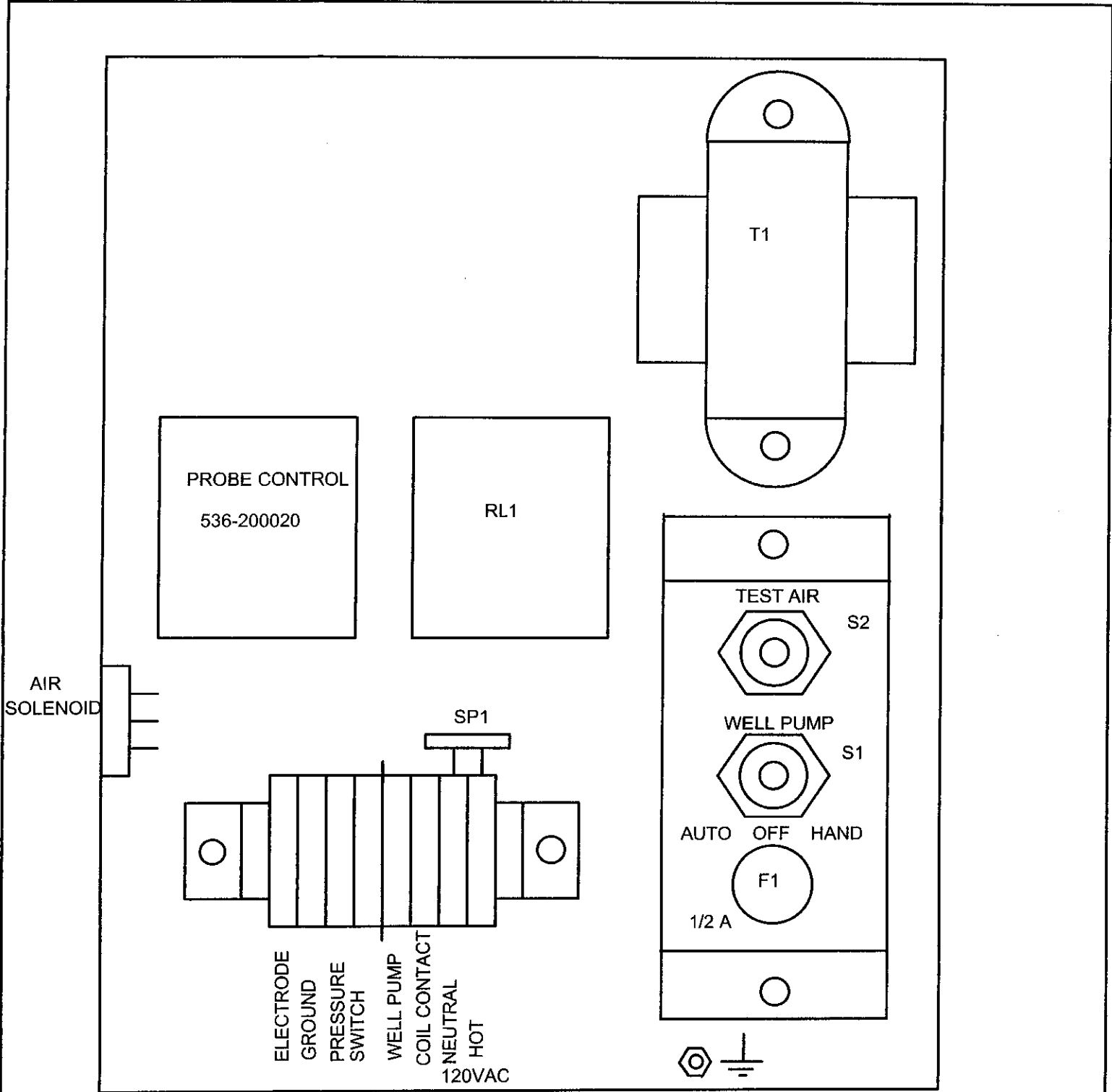
000-200035

INSTALLATION OF THE AIR SUPPLY CONTROL

1. Mount the control unit on the wall close to the compressor.
2. Install the electrode in the tank and set to desired depth. Tighten seal 1 to $\frac{1}{4}$ turn.
I recommend that a gate valve and a 3" nipple be installed below the $\frac{3}{4}$ " T, if something happens to the electrode, or the electrode needs cleaning it can be done without disrupting the operation.
3. Pull the black electrode wire through the grommet in to the control unit, connect to the "ELECTRODE" terminal block and tighten the screw.
4. Connect the green ground wire to the water tank. Pull the wire through the grommet into the control unit, connect to the "GROUND" terminal block and tighten the screw.
5. Pull a pair of wires from the terminals marked "PRESSURE SWITCH" to the pressure switch. These may be AWG 20 control wires, the voltage is 12VDC.
6. Connect the AIR LINE between the compressor and the inlet on the electrode.
7. Wire one side of the well pump solenoid through the terminal block marked "WELL PUMP COIL CONTACT".
8. Wire 120 VAC to the terminals marked "120 VAC".
9. Plug the compressor into the regular 120 VAC power outlet.
10. Plug the solenoid valve control cable into the socket on the control unit.
11. Set the pressure control on the compressor unit for your operating pressure.
12. The AIRSYS-4/1 is now ready for operation.

TEST PROCEDURE FOR MALFUNCTIONS.

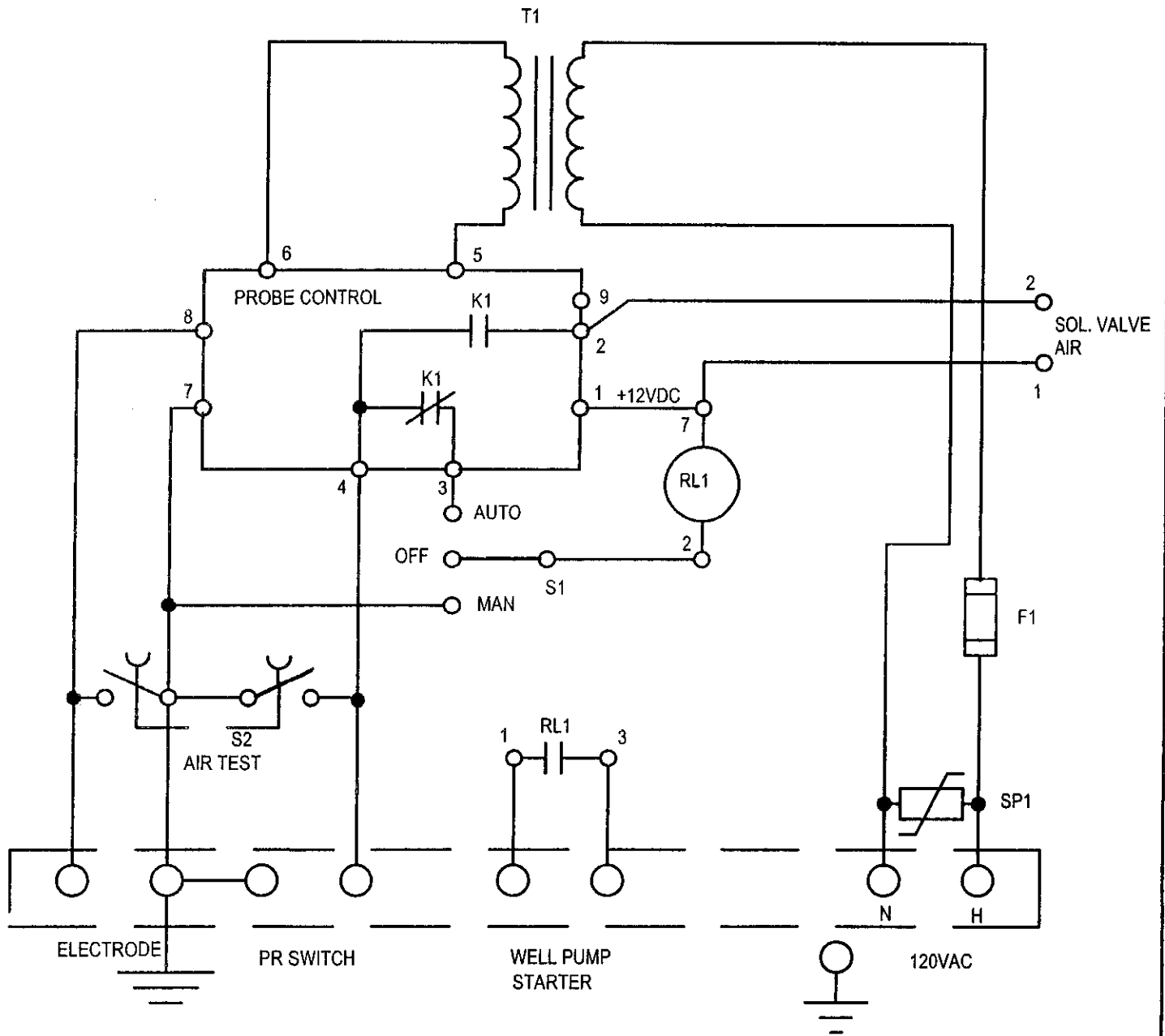
1. Hold the test switch down. The solenoid valve should open. Release the test switch. The solenoid valve should close.
2. If the solenoid valve does not work according the procedure #1 check the fuse. If the fuse is ok, replace the Probe Control.



REVISIONS		
ISSUE	CHG BY	ECO NO

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AIR SUPPLY CONTROL, AIRSYS 4/1		
SCALE:	DATE: 8-9-96	
DRAWN BY: PE	DRAWING NUMBER 000-200035	A
	SHEET NO	OF ISSUE



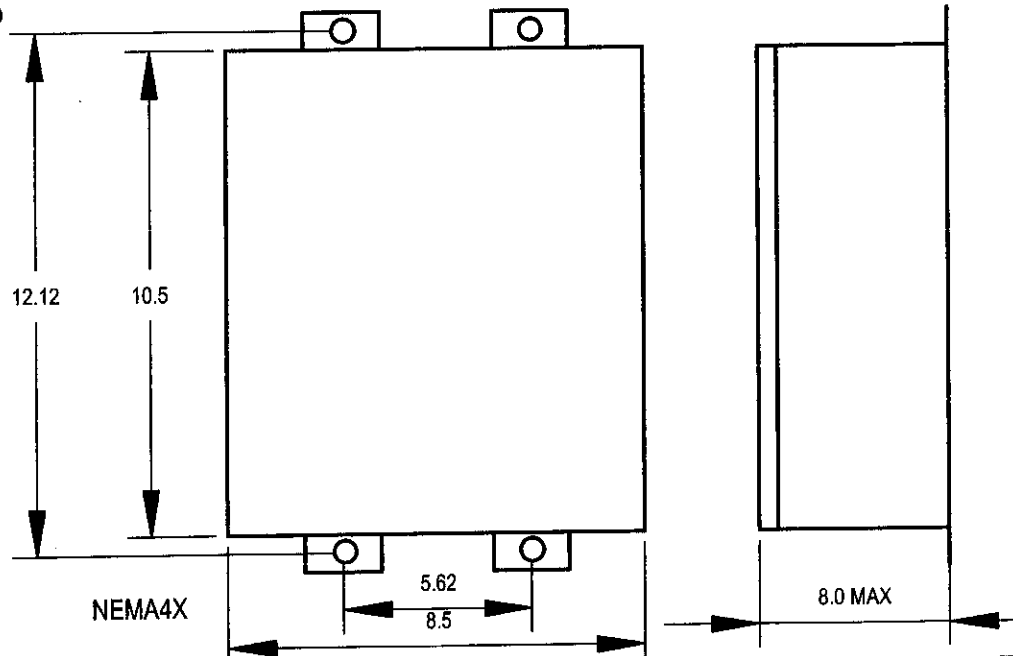
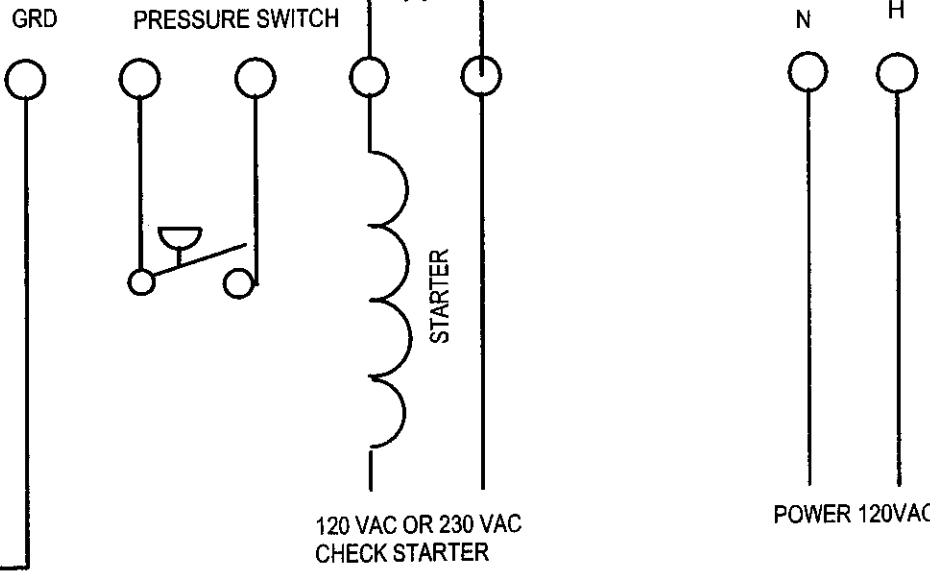
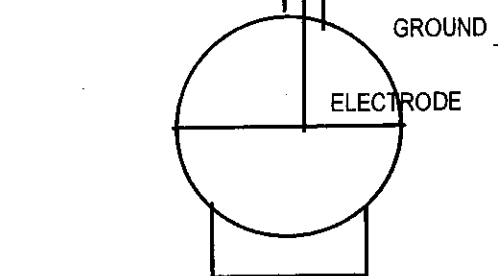
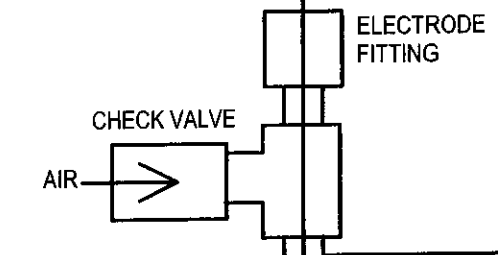
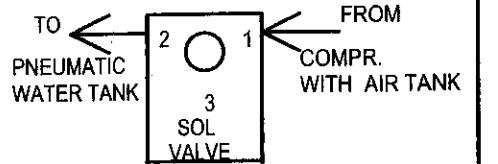
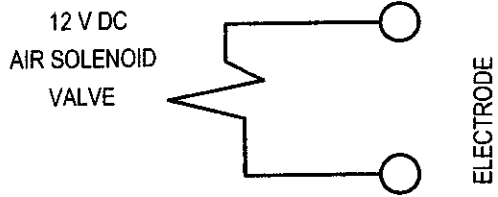
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AIR SUPPLY CONTROL AIRSYS 4/1 SCHEMATIC

SCALE:	DATE: 7/24/1996
DRAWN BY: PE	DRAWING NUMBER 000-200035
	SHEET NO OF ISSUE A



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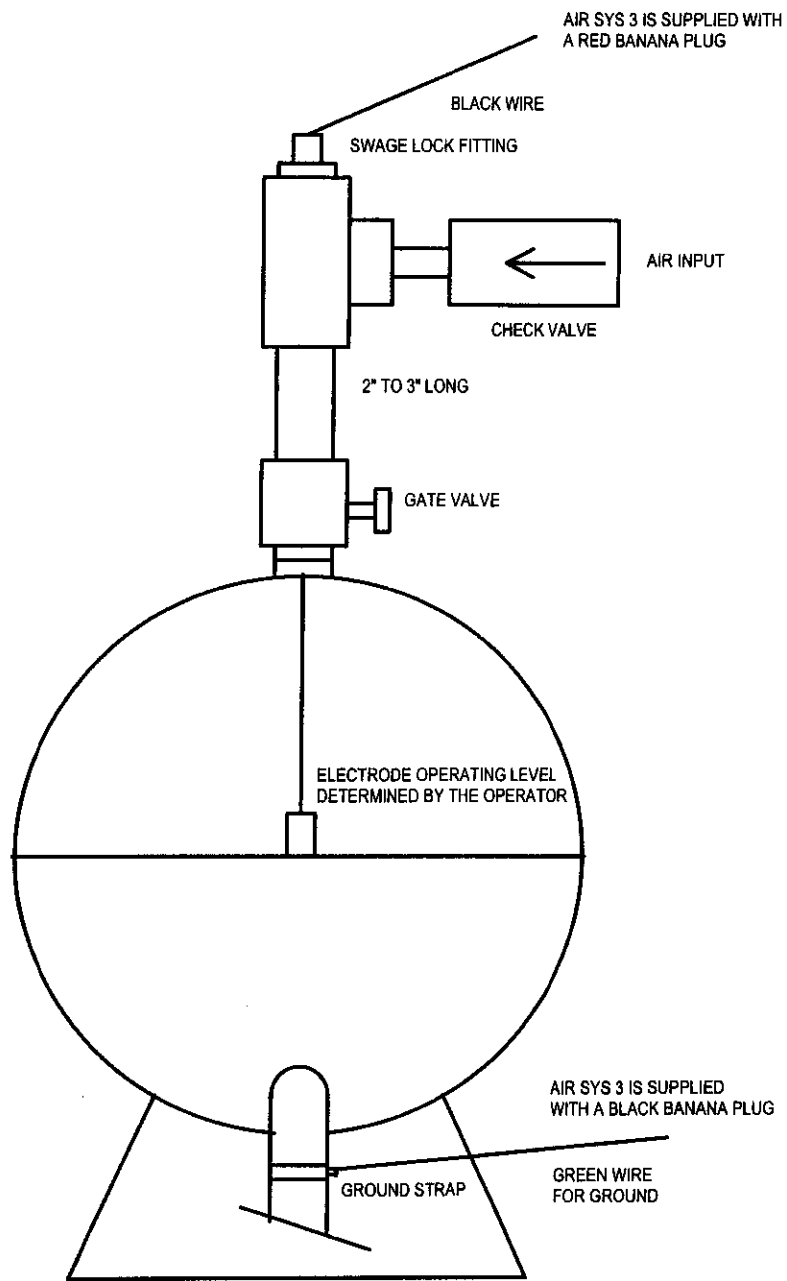
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AIRSYS 4/1B WIRING	
SCALE:	DATE: FEB. 9, 2006
DRAWN BY: PE	DRAWING NUMBER 000-200035
SHEET NO	OF
	B ISSUE

Item	Grp 1	Grp 2	Description	Part Number	Supplier	Designation
1	1		Case 10"x8"x6'	H100806HLL	Integra	
2	1		Plate 10"x8"	ABP108	Integra	
3	2		Relay Socket	RB08-PC	Relay Spec.	
4	1		Transformer	T21418	EPD	T1
5	1		Bracket	602-100011		
6	1		Fuse Holder	342012A		
7	1		Fuse 3AG, 1/2 A , SLBL			F1
8	1		Switch, SPDT, on/off/on	4X848	Grainger	S1
9	1		Switch, DPST, off/(on) mom.	1121-0021	McGill	S2
10	1		Probe Control	536-200020		
11	1		Relay 12VDC	KRPA11-12VDC		RL1
12	1		Surge Protector	P7064-ND	Digi Key	SP1
13	3.75		DIN Rail TS32	67610	Hughes	Weidmuller
14	8		Terminal Block	027966E	Hughes	Weidmuller
15	1		End Plate	27956	Hughes	Weidmuller
16	1		Partition	30286	Hughes	Weidmuller
17	2		End Bracket	20616	Hughes	Weidmuller
18	1		Socket for Solenoid	30-452	Calrad	
19	4		Screw 6-32 x .375lg SST			
20	4		Screw 6-32 x .25lg SST			
21	2		Screw 8-32 x .25lg SST			
22	AR		Wire AWG 18			
23	AR		Wire AWG 16			
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DRAWN BY: PE	DESCRIPTION	DRAWING NUMBER	ISSUE
DATE: 5/10/2005	AIR SUPPLY CONTROL AIRSYS-4/1	000-200035	B



SUGGESTED INSTALLATION

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AIR SYSTEM ELECTRODE INSTALLATION

SCALE:

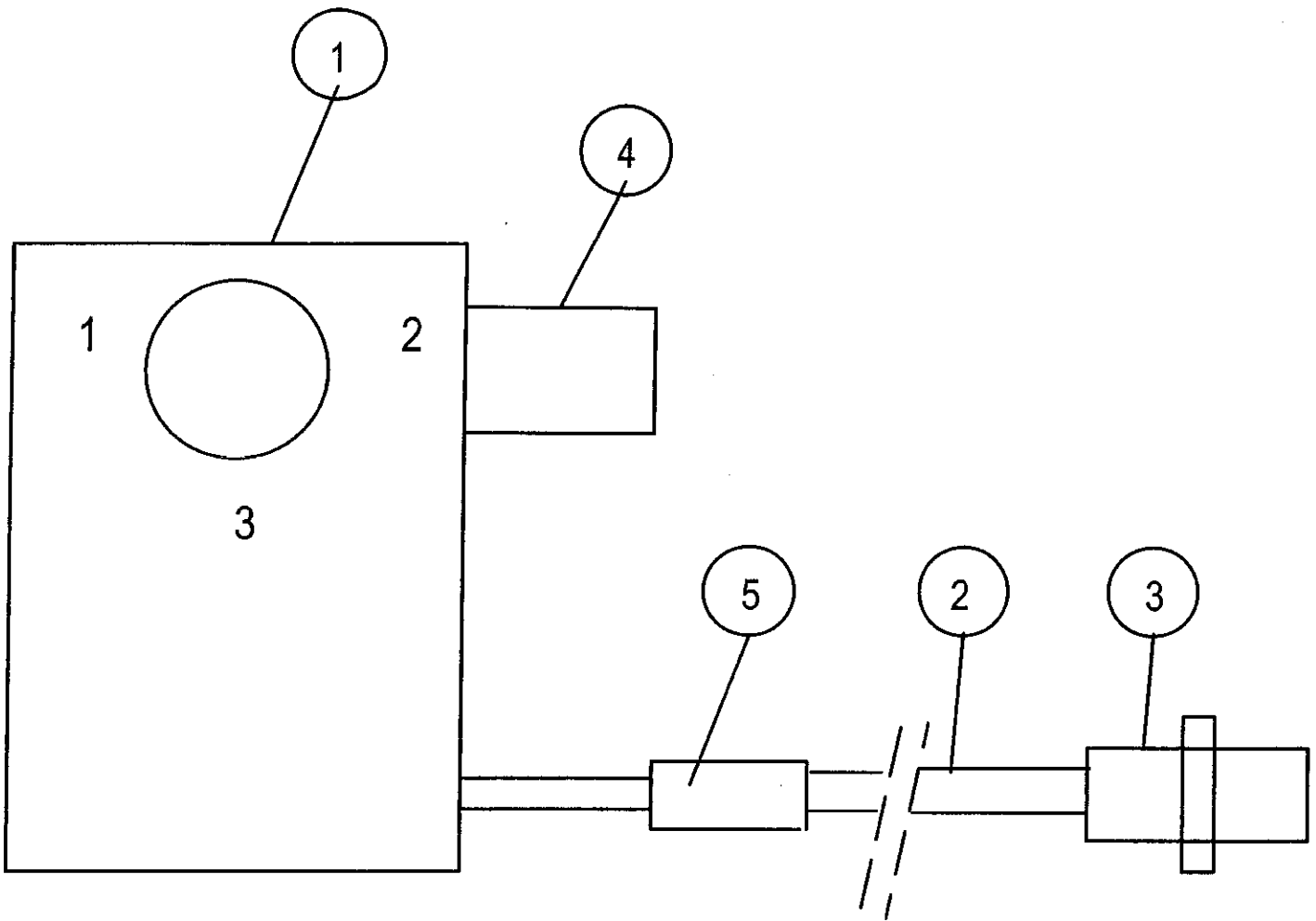
DATE: MAY 2, 2005

DRAWN BY: PE

DRAWING NUMBER

SHEET NO OF

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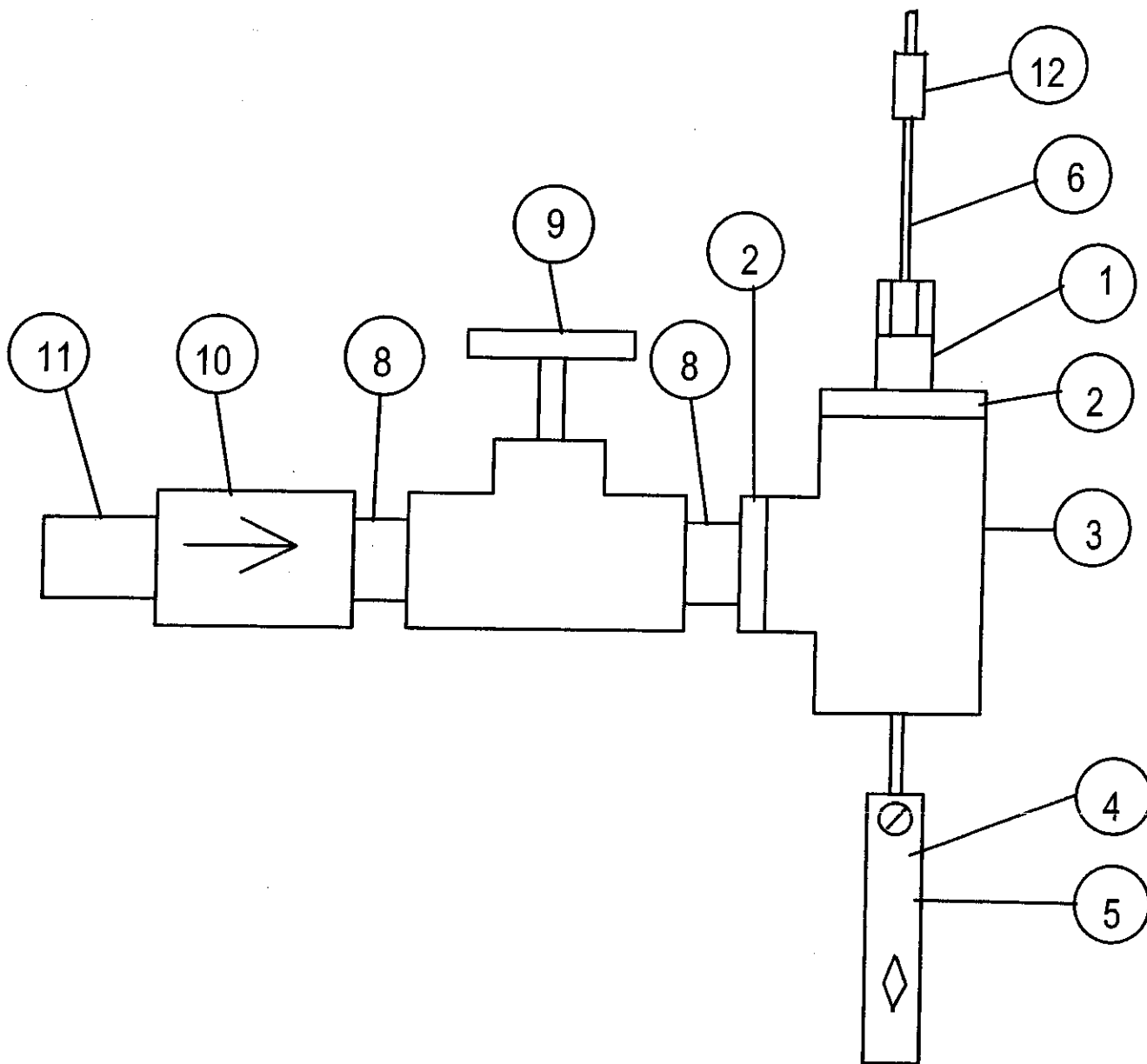
12VDC SOLENOID

REVISIONS			ELECTRONIC PRODUCTS DESIGN, INC. P. O. BOX 1569, 2231 WENDELL RD. WENDELL, NORTH CAROLINA 27591	
ISSUE	CHG BY	ECO NO		
			SOLENOID VALVE ASSEMBLY	
			SCALE:	DATE: SEPTEMBER 6, 1995
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				081-200031
			SHEET NO	OF
				A
				ISSUE

Item	Grp 1	Grp 2	Description	Part Number	Supplier	Designation
1	1		Solenoid Valve Mac	113B-601BAAA	Barker Air & Hydr.	
2	16		Cable, 2 Conductor w Sh AWG18	4A633	WW Grainger	
3	1		Connector	30-451	Calrad	
4	1		Hose Adapter	1442102	WW Grainger	
5	2		Splice Terminals 22-18AWG	4X312	WW Grainger	
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DRAWN BY: PE	DESCRIPTION	DRAWING NUMBER	ISSUE
DATE: Oct. 19, 2004	SOLENOID VALVE ASSEMBLY	081-200031	A



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ISSUE	CHG BY	ECO NO

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ELECTRODE EL-1

SCALE:

DATE: APRIL 7, 1983

DRAWN BY: PE

DRAWING NUMBER
081-200030

SHEET NO OF

A

ISSUE

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Item	Grp 1	Grp 2	Description	Part Number	Supplier	Designation
1	1		Swagelock Fitting with Nylon Ferrul	B200-1-4	Raleigh Valve & F.	
2	2		Bushing 3/4" to 1/4" Galvanized	36989770	MSC	
3	1		"T" Connector 3/4" Galvanized		Debnam	
4	1		Electrode 3/8" DIA x 3" LG SSTL	224-200003	EPD	
5	1		Insulator 3/8"x1/2"x3.25LG Vinyl Tubing		Debnam	
6	16		Wire AWG14 Solid BLK THHN		Shepard	
7	16		Wire AWG 16 Stranded GRN		SEA Wire	
8	2		Nipple 1/4"x1"LG		Debnam	
9	1		Valve 1/4"	6NN99	WW Grainger	
10	1		Check Valve 1/4" Bronze	61-101-01	MSC	
11	1		Air Hose Adapter 1/4" x 1"	HF002400AV	WW Grainger	
12	1		Banana Plug Red	283-5560	Allied	
13	1		Banana Plug Black	283-5563	Allied	
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DRAWN BY: PE	DESCRIPTION	DRAWING NUMBER	ISSUE
DATE: April 7, 1983	Electrode EL-1	081-200030	A