

DIELECTRIC 

Model 300/1000TLS Series Compressor Dehydrator

Installation and Operation manual

IB-413 Rev. D Part Number 84627

SPX 

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1 PREFACE

1.1 Before you begin

Thank you for your interest in SPX Dielectric's TLS Series Compressor Dehydrator.

Please read this user manual in its entirety before attempting to use the product.

Dielectric products, including this manual, are under continuous development. The information contained within is accurate at time of publication; however the Models 300 and 1000 TLS Series Compressor Dehydrators, this manual and all its contents are subject to change.

Dielectric reserves the right to modify the product without notice and some product changes may have taken place after this user manual was published.

Contact your local Radiodetection dealer or visit www.radiodetection.com/dielectric for the latest information about the Models 300/1000 TLS, including this manual, and the rest of the Dielectric range.

1.2 Important notices

General

These dehydrators will not be permanently damaged by reasonable electrostatic discharge. However, in extreme cases temporary malfunction may occur. If this happens, switch off, wait and switch on again. If the dehydrator still malfunctions, disconnect the power supply for a few seconds before restarting.

Safety

CAUTION!: Turn off power at the external, disconnect switch before servicing

CAUTION!: Failure to comply with safety cautions can result in damage to equipment or property

This equipment shall be used only by qualified and trained personnel, and only after fully reading this Operation Manual.

Important Safety Instructions

1. Read and follow all instructions
2. Keep these instruction with the equipment
3. Heed all warnings, cautions and notes.
4. Do not block any ventilation openings.
5. Install in accordance with SPX Dielectric instructions
6. Do not defeat the safety purpose of the grounding type plug
7. Protect the power cord from being walked on or pinched.
8. Use Wrist Strap when handling ESD Sensitive Circuit Boards



WARNING! Risk of Electrocutation. Isolate power by unplugging or by locking separate disconnect.

1.3 Intellectual property

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2 INTRODUCTION

2.1 About this manual

This manual covers installation, operation, and maintenance of the Models 300/1000TLS Series Compressor Dehydrators. These units are capable of years of trouble-free service when properly installed, operated and maintained.

2.2 About the TLS Series Compressor Dehydrators

The TLS heatless compressor dehydrator is specifically designed as an economical pressurization system for coaxial transmission line and waveguide systems. Using a heatless self-regenerating drying system, the TLS automatically regenerates the drying media and provides years of trouble free service. The unit is standard with a visual humidity indicator and a low pressure alarm.

The 300TLS provides up to 300 SCFD and the 1000TLS provides up to 1000 SCFD of air at -40° dew point with an adjustable output pressure range of 2 PSIG minimum starting and up to 12 PSIG stopping pressure with a 5 PSIG differential pressure range. The tank-less design utilizes the volume of the coax or waveguide as the storage vessel and can be equipped with the optional panel mounting brackets or a 0.4 cubic foot storage tank.

On the 300TLS a 1/8 HP oil-less compressor is available for application in 115V/50-60Hz as well as 230V/50-60Hz environments. On the 1000TLS a 1/3 HP oil-less compressor is available for application in 115V/50-60Hz as well as 230V/50-60Hz environments. These compressors require minimal maintenance that can be performed on-site and will provide years of service.

2.3 Before Installing

READ THE MANUAL THOROUGHLY, then, with the manual as a reference, examine the air dryer. Learn to recognize the various components and the full function performed by each.

The installation environment can impact the performance and serviceability of the compressor/dehydrator, and therefore, the performance and reliability of the systems which it serves. Careful consideration should be given to the parameters outlined in section 4.0 of this manual, so that the best utilization of available space may be made.

The installation environment can impact the performance and serviceability of the compressor/dehydrator, and therefore, the performance and reliability of the systems which it serves. Careful consideration should be given to the parameters outlined in section 3.0 of this manual, so that the best utilization of available space may be made.

2.4 Receiving



WARNING! LIFTING HAZARD - this unit weighs 35 lbs. Use the appropriate number of people to lift and position

Shipping damage is unusual but not totally avoidable. Do not accept delivery of containers which show shipping damage. Open acceptable containers immediately upon receipt and inspect the contents for hidden damage. If damage is evident, promptly file a hidden damage claim with the delivering transportation company.

3 PRINCIPLE OF OPERATION

3.1 Overview

Ambient air flows through the intake filter into the compressor. The compressor outlet pressure is 45 to 65 PSIG, depending on the altitude of the installation site. The compressed air is cooled by the heat exchanger which causes water droplets to form in the air stream.

The cooled, compressed air is directed by the Dryer Control Solenoid Valve to either the left or right desiccant tower of the dryer. Any water droplets are trapped at the solenoid valve and do not enter the desiccant towers, where gaseous moisture is adsorbed by molecular sieve. A solid state timer causes the Dryer Control Solenoid Valve to alternate tower selection every thirty seconds of compressor operation. Air leaving the dryer is at -40°F (-40°C) or lower in dew point.

Air leaving the dryer passes through an In-line Check Valve, through a Flow-Control Orifice or back pressure regulator.

The dry air flows past a color changing Humidity Indicator before exiting the air dryer. A dark blue color indicated a dry system.

Air pressure within the Transmission Line is monitored by a gauge on the front panel and controlled by the Start/Stop Pressure Switch. The pressure switch causes the compressor to start when the pressure falls to 2 PSIG and to stop when 7 PSIG is reached.

3.2 Operating Cycle of the Desiccant Dryer

There are two phases of the one minute dryer cycle. The cycle is interrupted when the compressor is not operating and resumes when the compressor restarts. The cycle is controlled by a solid state timer with a memory feature which is active whenever the power is on.

The timer memory insures that the dryer cycle will resume at exactly the point at which it was interrupted by the Start/Stop Pressure Switch. This feature provides for a balanced workload in the drying towers, regardless of the frequency or duration of compressor operation.

PHASE ONE: Right desiccant tower is in dehydration mode and left desiccant tower is in purge mode. Duration is 30 seconds for this phase.

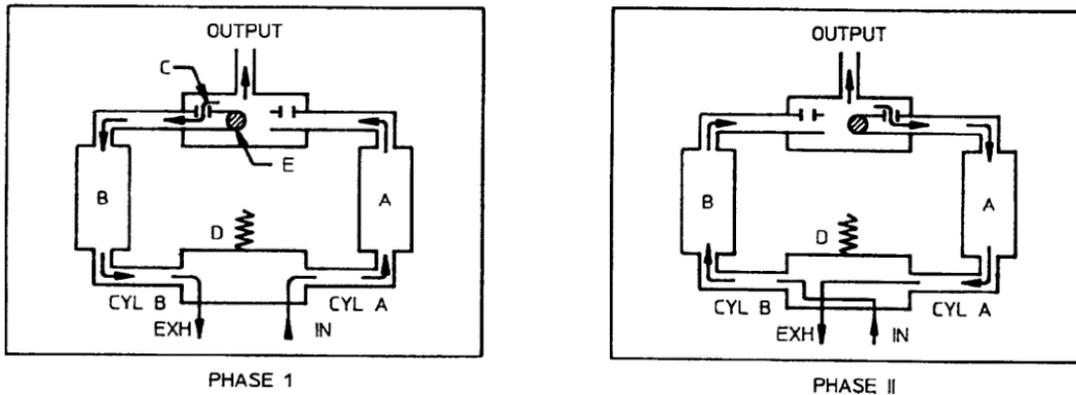


Figure 1 - Timing Cycle

The Dryer Control Solenoid Valve is energized by the timer, venting the left tower to atmosphere via the exhaust port. Compressed air is directed to the right tower to be dried. The ball check valve prevents higher pressure air in the right tower from flowing to the left tower. A small portion of dry air from the right tower passes through a purge control orifice and to the left tower, where it expands at lower pressure. The expanded air picks up the moisture deposited in the tower in the previous cycle and carries it to atmosphere via the exhaust port of the Dryer Control Solenoid Valve.

PHASE TWO: Left desiccant tower is in dehydration mode and right desiccant tower is in purge mode. Duration is 30 seconds for this phase.

The Dryer Control Solenoid Valve is de-energized by the timer, venting the right tower to atmosphere via the exhaust port. Compressed air is directed to the left tower to be dried. The ball check valve prevents higher pressure air in the left tower from flowing to the right tower. A small portion of dry air from the left tower passes through a purge control orifice to the right tower, where it expands at lower pressure. The expanded air picks up the moisture deposited in the tower in the previous cycle and carries it to atmosphere via the exhaust port of the Dryer Control Solenoid Valve.

At the completion of phase two the cycle timer proceeds to phase one, and so forth.

3.3 Alarms/Indicators

3.3.1 Humidity

Color change humidity indicator is provided for visual indication of dry air. When the indicator is pink in color the outlet air is above 10% RH. When the indicator is dark blue in color the outlet air is below 10% RH.

3.3.2 Outlet Pressure Alarm

An adjustable low outlet pressure alarm switch is preset to close at 1.0 PSIG on decreasing pressure. The alarm provides a dry contact short on the alarm terminal board positions.

3.3.3 Power failure

A relay monitors the AC Power after the On/Off Circuit Breaker. Should the Circuit Breaker trip off or power is lost, the alarm provides a dry contact short on the alarm terminal boards positions.

4 SITE REQUIREMENTS

The Model TLS Series requires a firm, level surface with a minimum of 3" clearance on all sides. The top should have greater clearance to any surface which could block the escape of warmed air from the compressor.

The site must not be subject to freezing or extremely high temperatures. The allowable temperature range for operation is 33°F to 120°F. A reasonably clean location with a temperature range of 60 to 90°F will enhance the service life of the air dryer.

Be sure to connect the power cord only to an electrical outlet which complies with the electrical specifications of the dryer. Check the nomenclature plate on the top of the enclosure for the electrical characteristics. Units powered by 230 VAC, 60/50 Hz will require the addition of an electrical plug purchased locally.

Always provide a grounded receptacle and plug to avoid electrical shock.

NOTE! All machinery must be fitted with the means to isolate it from electrical energy sources. The isolator must be capable of being locked where an operator is unable, from any of the points to which he/she has access, to check that the energy is still cut off!

5 INSTALLATION

Locate the TLS Dehydrator per section 4.

Provide remote alarm wires for later connection directly to the Alarm Terminal Board at the back of the enclosure. The alarm circuit device must have its own power source (normally 24 or 48 volts DC).

Provide a 3/8" o.d. tube from the user system, but **do not connect** to the dehydrator Dry Air Outlet until after performing step 6.

Be sure the front panel power switch is off and connect the dehydrator power cord to an electrical outlet which complies with the equipment nomenclature plate.

6 START-UP OF THE MODEL TLS SERIES

Turn on the On/Off Power switch on the front panel.

Due to extended period of dryer inactivity (shipping and storage) the Humidity Indicator will be Pink in color. Allow a one-hour or so continuous operation. When the indicator starts to turn Blue in color, connect tubing to the Dry Air Outlet.

7 ADJUSTMENTS

7.1 Outlet Pressure Alarm Switch Adjustment

The switch has been factory set to close at 1.0 PSIG the range is 0.5 to 3 PSIG. To adjust, remove the round black rubber button that plugs the adjustment hole in the Pressure Switch. Using a 7/32" Hex Wrench, turn clockwise to increase or counter-clockwise to decrease pressure setting.

7.2 Start / Stop Pressure Switch Adjustment



WARNING! RISK OF ELECTROCUTION - turn the dehydrator off and disconnect from the electrical power source before performing the following procedure.

Before adjusting the start/stop pressure switch, observe the pressure shown on the Line Pressure Gauge when the compressor starts and when it stops. Make note of the amount of change required in PSIG to obtain the desired setting. The compressor is factory set to start at 2 PSIG and stop at 7 PSIG +/- 5 PSIG.

The Start/Stop Pressure Switch is accessed by first removing the screw which retain the Top/ Back panel of the enclosure.

Remove the plastic pressure switch cover using a screwdriver. Note the two adjuster screws on the Start/Stop Pressure Switch. The center adjuster controls the entire range of the pressure switch. The side adjuster controls only the stop pressure.

Turn only the center adjuster - clockwise to raise or counterclockwise to lower the amount of differential or range.

Connect the power cord to the electric outlet and restart the dehydrator.

Again check the Stop Pressure to verify the Start/Stop Pressure Switch adjustment. If the desired change is complete, turn off the dehydrator, disconnect from the electrical power source, reinstall the pressure switch cover and fully tighten the Top/Back panel screws. Reconnect the power and turn on the panel power switch.

8 MAINTENANCE

At 6 month intervals verify that the dryer purges every 30 seconds when the compressor is running.

1. Verify that the adjustment of the Start/Stop Pressure Switch is correct.
2. Verify the Outlet Pressure alarm switch by bleeding air through the test valve. If pressure settings need adjustment refer to section 7: ADJUSTMENT.
3. While operating at normal pressure, verify that the compressor does not run more than 70% of the time. If operating time exceeds this limit check the inlet filter element of the compressor to see if it is very dirty. Replace the filter element if indicated. If excess operation continues, check for leaks throughout the air system.

9 COMPRESSOR MAINTENANCE



WARNING! RISK OF ELECTROCUTION - before disconnecting compressor electrical quick-connect from cabinet electrical harness, turn the dehydrator off and disconnect from the electrical power.



CAUTION! RISK OF BURNS - normal compressor operation will cause head temperature to exceed 100°C. Be very careful when handling a hot compressor.

NOTE! Do not lubricate the compressor. Do not allow petroleum products, caustics or solvents to contact any part of the compressor. Parts may be cleaned with soap and water followed by wiping down with a dampened cloth.

Service Kit Procedure for TLS 300 ONLY:

1. Disconnect electrical power to pump.
2. Disconnect air supply and vent all air lines to release pressure or vacuum.
3. Mark the orientation of the ports so cover will be reinstalled correctly.
4. Remove screws from the head of the pump. Remove the head of the pump.
5. Mark orientation of valve plate(s). Remove valve plate(s).
6. Remove and discard old cups(s), retainer screws, cylinder O-ring(s), head O-ring(s), valves, and valve retainers.
7. Install new cup(s) on rod(s) facing up.
8. Reinstall retainer plates.
9. Apply a thread locking compound (Loctite 222) to retainer screws. Torque screws to 50 in. lbs.
10. Carefully install cylinder(s) over cup(s) at an angle to avoid damaging cup(s).
11. Clean valve plates with water based solvent. Take care to not scratch valve seats.
12. Install valves and valve retainers. Check that the orientation with the ports is correct.
13. Apply a thread locking compound (Loctite 222) to retainer screws. Torque screws to 10-13 in. lbs.
14. Install cylinder O-ring(s) in the bottom of valve plate(s).
15. Check that the orientation of valve plate(s) with the ports is correct.
16. Install head O-rings in the O-ring grooves on top of valve plate.
17. Reinstall head over valve plate(s) checking that orientation with ports is correct.
18. Torque screws to 50 in. lbs.

Check that all external accessories such as relief valves and gauges are not damaged before re-operating product.

10 TROUBLE SHOOTING

NOTE! The tube located at the output of the sensor block on the Desiccant Dryer Assembly contains a flow control orifice and is marked with a yellow band. If it is necessary to remove this tube it is essential that it be reinstalled to its original position when completing the maintenance procedure!

10.1 Outlet Air Pressure Alarm

Be sure the Outlet Pressure Gauge indicates the desired pressure. If the gauge reliability is in question, it can be verified by attaching a test fitting and test gauge (0 to 15 PSIG) to the test valve on the pressure switch. Replace the gauge if indicated. For outlet pressure alarm switch adjustment refer to section 7.2.

10.2 Humidity Condition (Wet)

A list of conditions which can cause a high humidity:

1. Dryer not cycling (10.2.1.2)
2. Plugged purge outlet (10.2.1.3)
3. Infrequent operation (10.2.1.4)
4. High temperature (10.2.1.5)
5. Desiccant towers (10.2.1.6)
6. Needs time to clear (10.2.1.7)

NOTE: The Model TLS Series is equipped with a color change moisture indicator. If excessive outlet air moisture is indicated pink proceed to section 10.2.1.2.

NOTE: For Model TLS 1000 only, verify that the back pressure is set at 60 PSIG using a test pressure gauge.

10.2.1 Humidity Indicator

1. Excessive moisture will cause the Humidity Indicator on the panel to turn pink.
2. If the dryer does not cycle (does not purge audibly every 30 seconds of compressor operation), replace the dryer solenoid valve. If the condition persists, replace the cycle timer.
3. A restricted exhaust port on the dryer solenoid valve can cause excessive pressure in the desiccant towers while purging. This can cause a humidity condition. Be sure that the exhaust port is not plugged.
4. If the user system requires so little air that the compressor operates less frequently than once every 45 minutes, it is recommended that an external fixed air leak is added to the unit. This leak will allow the unit to operate more frequently.
5. Be sure that the dehydrator is not located where the temperature rises above 120°F.
6. The desiccant used in the drying towers is molecular sieve, which has a normal useful life equal to the dehydrator. Reduced service life can occur due to air borne contaminants (hydrocarbons, acids etc.) which may plug or degrade the desiccant.
7. This is seldom the cause of a high humidity condition, but if all other possible causes for a high humidity condition have been ruled out, and especially after years of service, replacement of the desiccant towers is indicated.

10.2.2 Dry-Down after Repair

If a malfunction of the timer or dryer solenoid valve has caused a humidity condition, the unit must operate after repairs are completed for about an hour in order to dry the desiccant towers and clear humidity.

11 SERVICE INFORMATION

Should you need to contact us please call our Customer service department on (207) 655-8525 or Toll Free at (877) 247-3797.

When returning a unit for factory service, Call the customer service department for a service return authorization number (SRA). The device should be boxed securely and contain contact information, contact telephone number, billing information, and return shipping information. If device is being sent to the factory for service, a written statement of the problem or symptoms should be included. The SRA number must be on the outside of the package or indicated on the shipping label.

NOTE: Do not ship equipment contaminated with any type of hazardous/harmful substance.

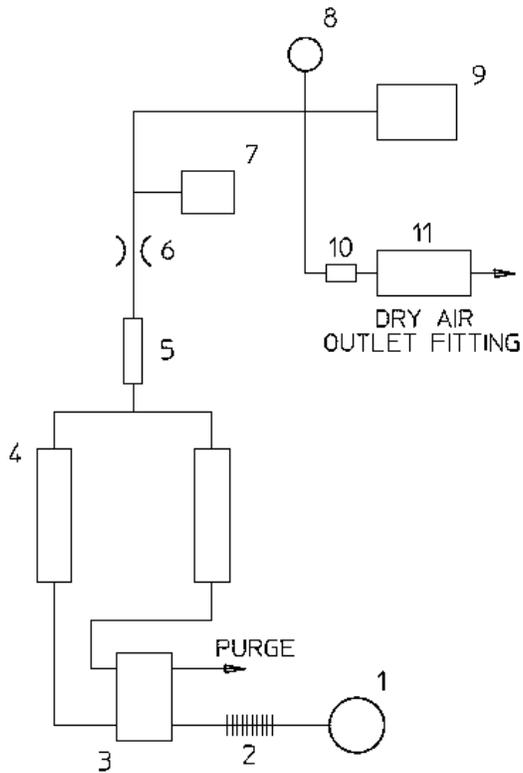
12 PRODUCT SPECIFICATION

**TABLE I
TABLE OF LEADING PARTICULARS**

CHARACTERISTICS	MODEL 300TLS	MODEL 1000TLS
WIDTH	17.0 INCHES	17.0 INCHES
HEIGHT	12.5 INCHES	12.5 INCHES
DEPTH	10.0 INCHES	10.0 INCHES
WEIGHT	35 POUNDS	40 POUNDS
CAPACITY	300 SCFD	1000 SCFD
DEW POINT	-40°F	-40°F
STANDARD VOLTAGE	230 VAC, 60/50Hz 115 VAC, 60/50Hz	230 VAC, 60/50Hz 115 VAC, 60/50Hz
OPERATING AMPS	1.0 AMPS 2.0 AMPS	1.4 AMPS ON 230 VAC 2.8 AMPS ON 115 VAC
CURCUIT PROTECTION	1.25 AMPS 3.0 AMPS	3.0 AMPS ON 230 VAC 5.0 AMPS ON 115 VAC
COMPRESSOR	1/8 HP ROC R	1/3 HP ROC PISTON
AIR OUTLET	3/8" O.D. TUBE FITTING	3/8" O.D. TUBE FITTING
OUTLET PRESSURE	MIN. 2 to 7 PSIG MAX. 7 to 12 PSIG	MIN. 2 to 7 PSIG MAX. 7 to 12 PSIG
DRYER OPERATING PRESSURE	45- 65 PSIG	60 PSIG
AMBIENT TEMP	32° - 120°F	32° - 120°F

ALARMS

ALARM TYPE	CONDITION / FAULT
COLOR CHANGE HUMIDITY INDICATOR	VISUAL INDICATOR BLUE - DRY PINK - WET
LOW OUTLET PRESSURE ALARM	SET TO CLOSE AT 1.0 PSIG
POWER FAILURE ALARM	LOSS OF POWER / TRIP BREAKER



- 1. Motor Compressor
- 2. Heat Exchanger
- 3. Dryer Solenoid Valve
- 4. Desiccant Dryer
- 5. In-line Check Valve
- 6. Flow Control Orifice or Back Pressure Regulator
- 7. Start/Stop Pressure Switch
- 8. Line Pressure Gauge
- 9. Low Line Pressure Alarm Switch
- 10. Color Change Humidity Indicator
- 11. Dry Air Outlet Fitting

Figure 2 - Model TLS Series Flow Schematic

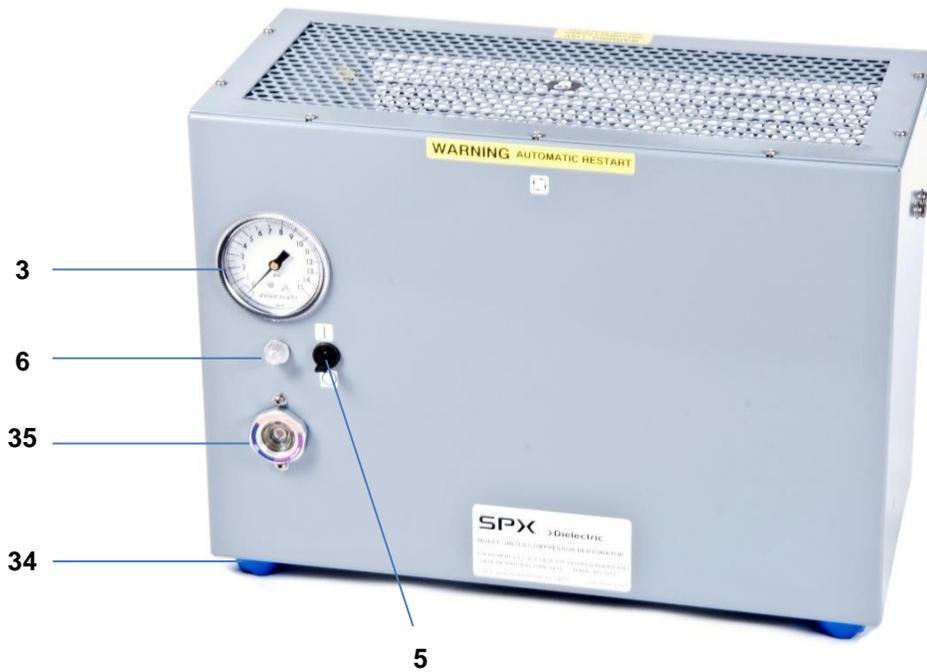


Figure 3 – Front View

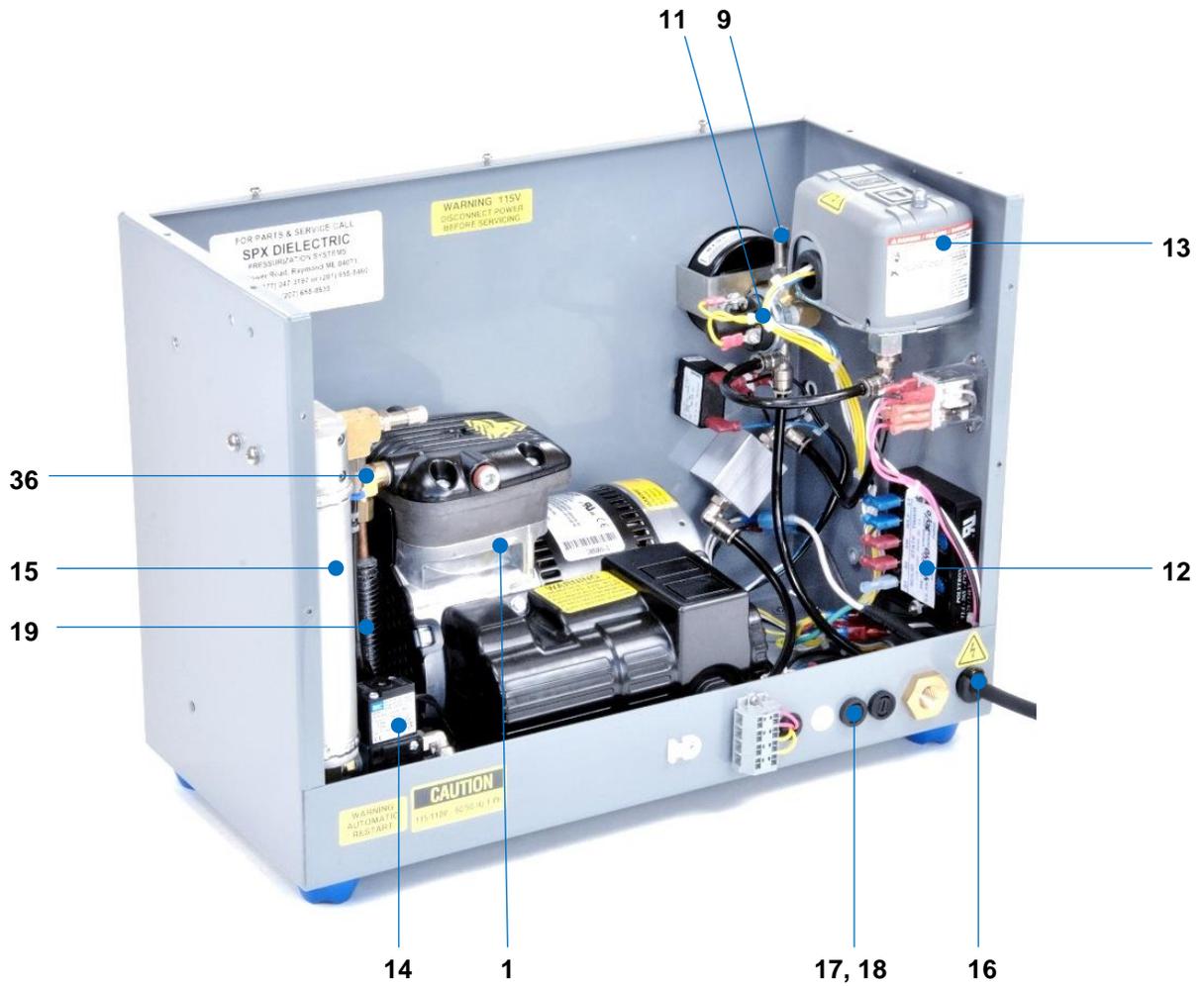


Figure 4 – Rear View Cover Removed

**TABLE II
LIST OF PARTS**

POSITION	DESCRIPTION	QTY	PART NUMBER
1	Model 300TLS Spare Comp 115VAC/60/50hz	1	105266
	Model 300TLS Spare Comp 230VAC/60/50hz	1	105267
1a	Model 1000TLS Spare Comp 115VAC/60/50Hz	1	94741
	Model 1000TLS Spare Comp 230VAC/60/50Hz	1	94742
1b	Compressor Service Kit for 300TLS		105259
	Compressor Service Kit for 1000TLS		98817
3	Line Pressure Gauge	1	0005390013
5	Model 300TLS Circuit Breaker 115VAC/60/50Hz	1	14685
	Model 300TLS Circuit Breaker 230VAC/60/50Hz	1	33860
5a	Model 1000TLS Circuit Breaker 115VAC/60/50Hz 1		14686
	Model 1000TLS Circuit Breaker 230VAC/60/50Hz 1		14650
6	Power On Light 115 VAC	1	13226
	Power On Light 230 VAC	1	41136
9	Test Valve	1	0017495001
11	Outlet Alarm Pressure Switch		18332
12	Solid State Timer 115 VAC	1	48540
	Solid State Timer 230 VAC	1	48541
13	Stop/Start Pressure Switch	1	0060353004
14	Spare Dryer Solenoid Valve 115 VAC	1	48063
	Spare Dryer Solenoid Valve 230 VAC	1	48064
15	Model 300TLS Spare Complete Dryer 115 VAC	1	105137
	Model 300TLS Spare Complete Dryer 230 VAC	1	105138
15a	*Model 1000TLS Dryer	1	48170
16	Spare Power Cord 115 VAC	1	48060
	Spare Power Cord 230 VAC	1	48061
17	Fuse Holder		34715
18	Fuse 1/4 amp for 115 VAC		45534
	Fuse 1/8 amp for 230 VAC		45533
19	Spare Heat Exchanger Assy.	1	48057
19a	Spare Heat Exchanger Assy.	1	94743
34	Rubber Mounting Feet	4	39959
35	Humidity Indicator Element	1	39962
36	Elbow & Filter assembly	1	85267
37	Model 1000TLS Unloader Valve (not shown)	1	35962
38	Power Failure Alarm Relay 115VAC (not shown)	1	14126
	Power Failure Alarm Relay 230VAC (not shown)	1	14127

*NOTE: For model TLS 1000 Dryers, the spare solenoid valve is sold as a separate item.

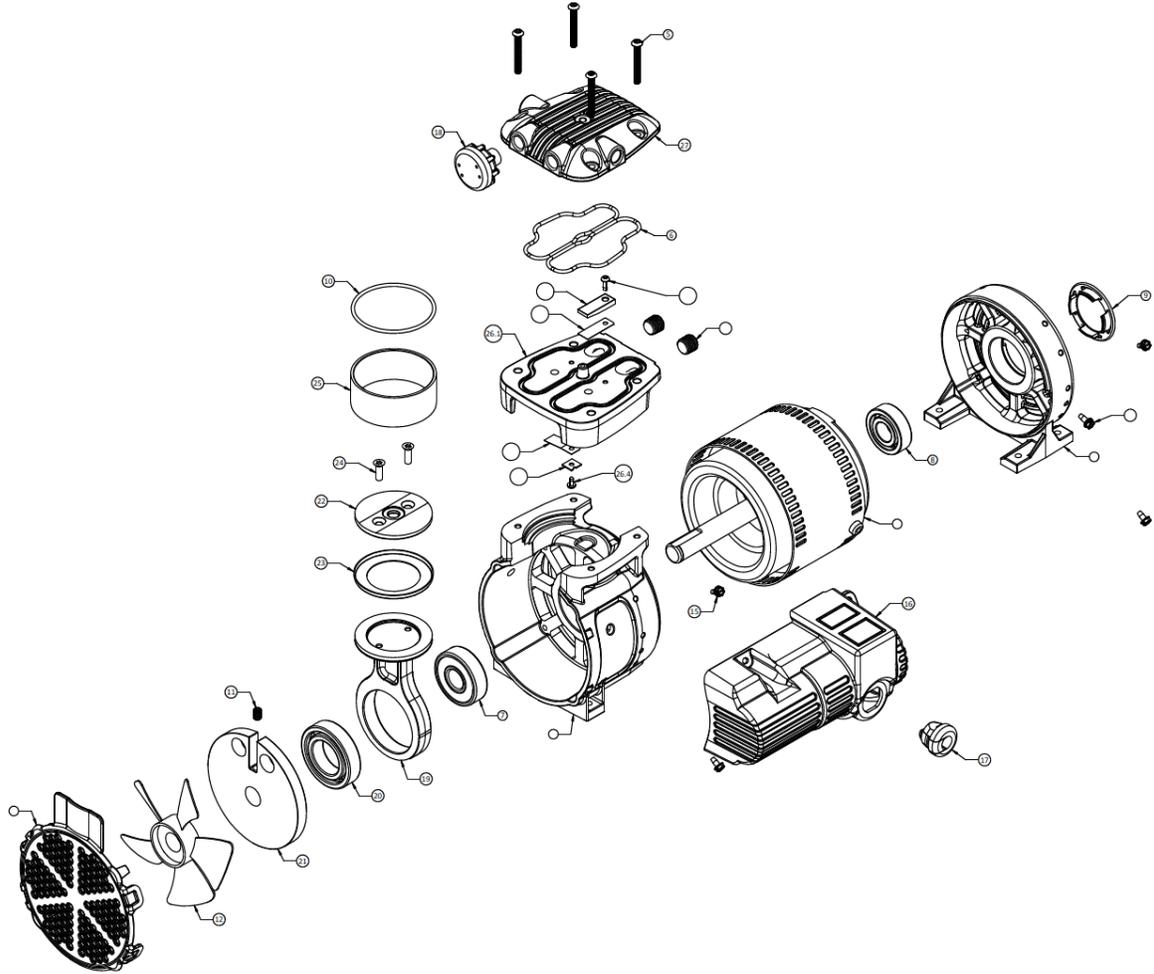


Figure 5
300 TLS Compressor - Exploded View

TABLE III
LIST OF COMPRESSOR PARTS FOR 300 TLS

ITEM NO.	DESCRIPTION	QTY
1	BODY	1
2	MOTOR	1
3	END BELL	1
4	FAN COVER	1
5	HEAD SCREWS	4
6*	O-RING	2
7	BEARING 6303	1
8	BRG 6203 FCST	1
9	END CAP	1
10*	O-RING	1
11	1/4-20 X .38 SET SCREW	1
12	FAN CW (ø4.5)	1
13	PIPE PLUG - 1/4 NPT	2
14	SEMS SELF TAPPING HEX WASHER HD #8-32 X .38	2
15	HWHS #8-32 X .38 SELF TAPPING SLOTTED	4
16	CAPACITOR COVER	1
17	POWER CORD STRAIN RELIEF	1
18	FILTER	1
19	CONNECTING ROD - ø2.50	1
20	BRG 6006 FCST	1
21	ECCENTRIC (.260 STROKE)	1
22	RETAINER (2.50 DIA.)	1
23*	CUP (2 1/2 BORE)	1
24*	SFHCS #10-24 X .63 TORX	2
25*	CYLINDER 2.50 BORE	1
26	VALVE PLATE ASM	1
26.1	VALVE PLATE, SINGLE, PORTS (2.50 CYL)	1
26.2*	LEAF VALVE	1
26.3	VALVE LIMITER-SS	1
26.4	SBHCS #6-32 X .25 THD ROLLING TORX	1
26.5*	VALVE RETAINER	1
26.6	SBHCS #6-32 X .38 THD ROLLING TORX	1
26.7*	LEAF VALVE (BENT)	1
27	HEAD, TWIN, SIDE PORTS	1

*Parts included in Service Kit P/N 105259
 Replacement capacitor (not shown) P/N 105270
 Item 18 Filter Assembly P/N 35560
 Filter Element P/N 35561* Part of Service Kit Qty 2

TABLE V
LIST OF COMPRESSOR PARTS FOR 1000 TLS

Ref. No.	Description	Qty
1	Cap Screw	4
2	Head	1
•4	Head O-Ring	1
5	Hex Nut	1
•6	Valve Retainer	2
•7	Leaf Valve	2
8	Valve Plate	1
10	Valve Screw	1
•11	Cylinder O-Ring	1
•12	Cylinder	1
•13	Retainer Screw	2
14	Retainer Plate	1
•15	Piston Cup (invert for vacuum use)	1
16	Rod Assembly	1
17	Shroud	1
18A	Fan-Lead End	1
19	Shroud Screw	4
20	Valve Plate Assembly	1
	Filter (not shown)	1
	Service Kit	1

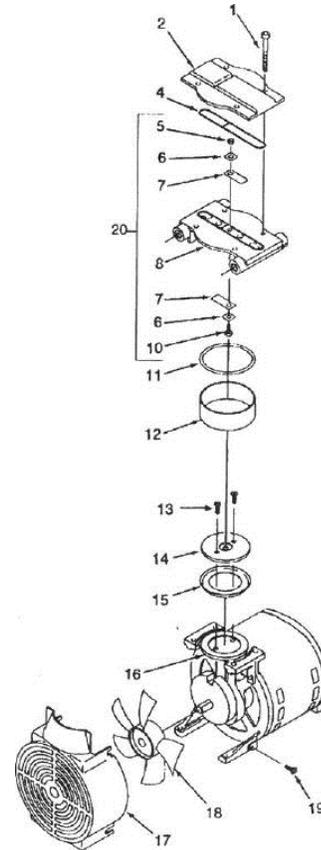


Figure 6
1000 TLS Compressor - Exploded View

Dots (•) indicate items contained in the Service Kit
P/N 98817

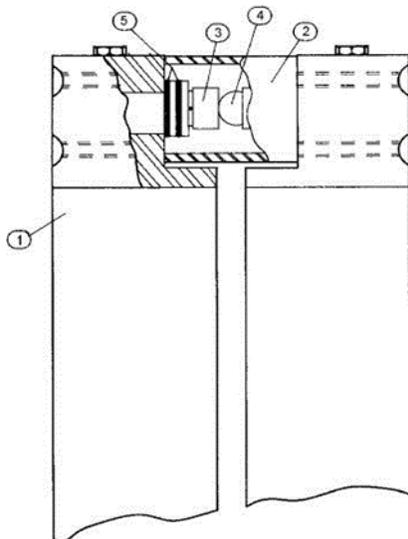


Figure 7
Desiccant Dryer Assembly

TABLE VI
PARTS LIST FOR 300 TLS DESICCANT DRYER

ITEM PART NO.	DESCRIPTION
REF. 48058	DESICCANT DRYERASSY, 115V
REF. 48059	DESICCANT DRYERASSY, 230V
1	35401 DESICCANT CHAMBER
2	34831 CENTER MANIFOLD BLOCK
3	34832 BALL SEAT
4	0015903005 BALL CHECK
5	0014000017 O-RING SEAL

PARTS LIST FOR 1000 TLS DESICCANT DRYER

ITEM PART NO.	DESCRIPTION
REF. 48170	DESICCANT DRYERASSY
1	47728 DESICCANT CHAMBER
2	47725 CENTER MANIFOLD BLOCK
3	35127 BALL SEAT
4	0015903005 BALL CHECK
5	0014000017 O-RING SEAL

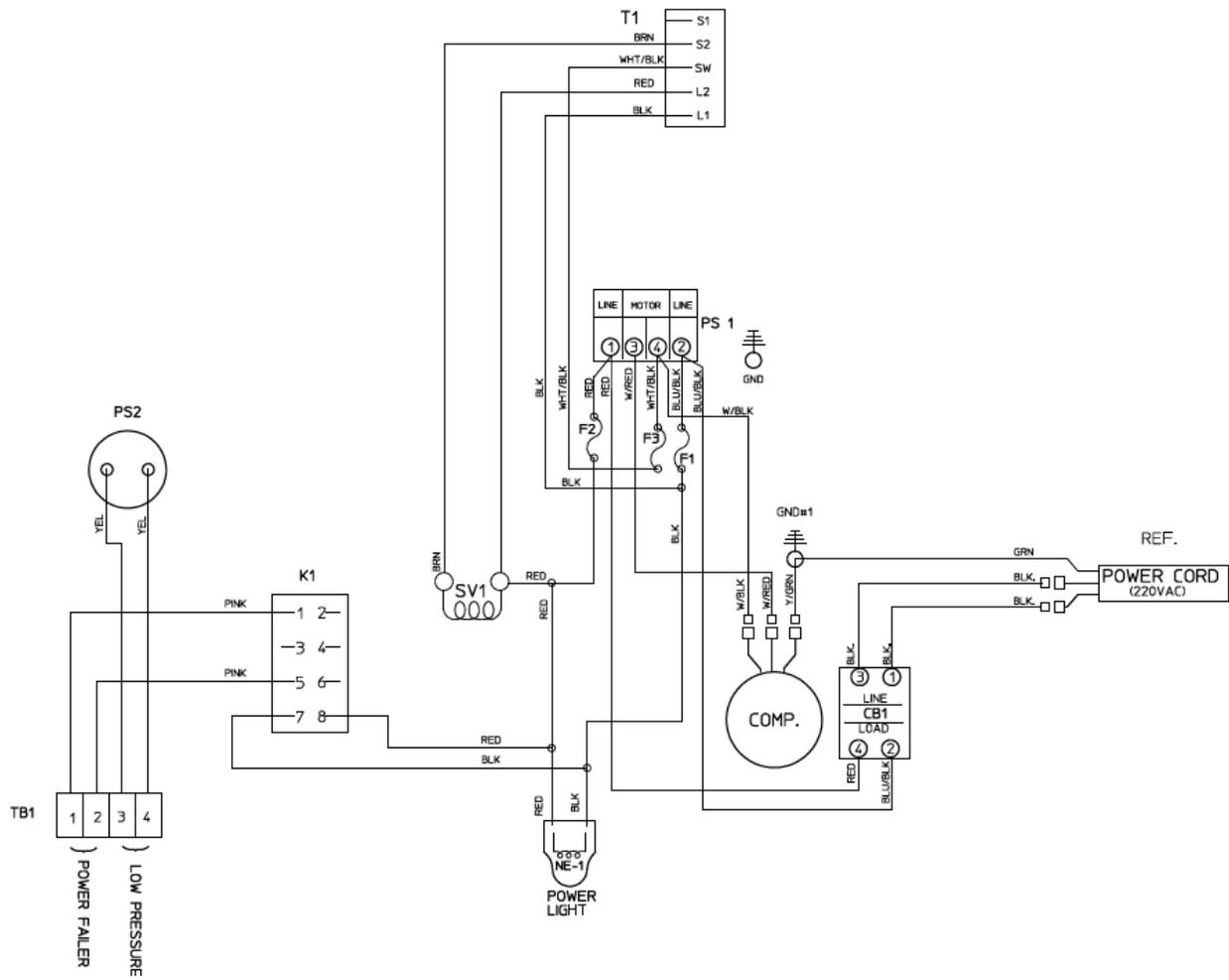


Figure 9
Model 300/1000 TLS Series, 230V Wiring Schematic

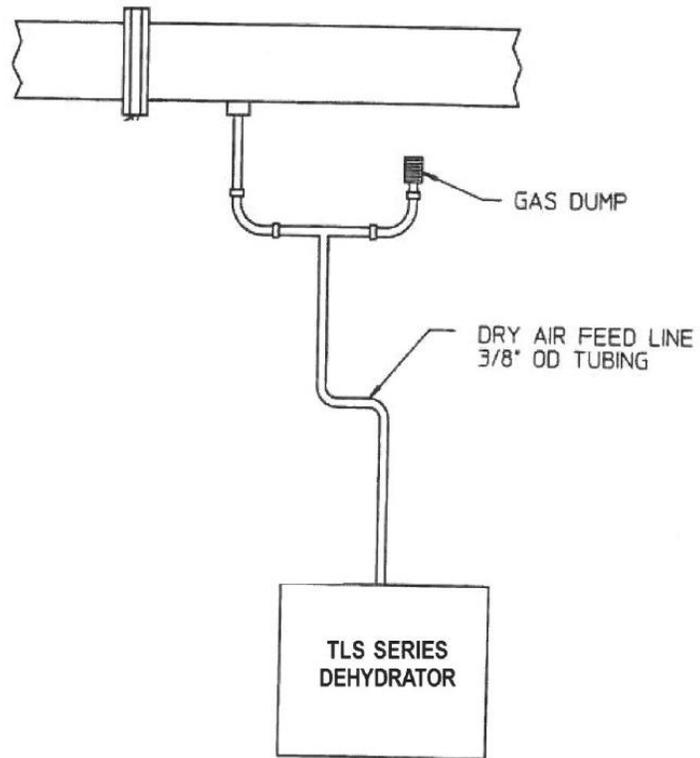


Figure 10
Typical Installation for Waveguide

TABLE VII GLOSSARY OF TERMS

DESICCANT: The component within the dryer towers which is used alternately to retain, then to expel moisture from the process air. Dielectric dryers employ desiccant which is totally inert, that is, it undergoes no chemical or physical change in normal use.

DEW POINT: Expressed in ° F, the temperature at which dew or frost would form at 14.7 PSIA. The dew point of a given air supply rises with increased pressure. Dielectric, in 1945 established a (-40°F) dew point as standard for their compressor/dehydrators and for the pressurization of the communications equipment which is produced by Dielectric.

EMERGENCY CAPACITY: Pertinent only to units with reciprocating piston type compressors, the maximum output air flow that the average designated dryer model is capable of sustaining at standard conditions, when operating continuously. The dew point of Dielectric dryers under emergency capacity conditions will not rise, and may actually decline.

PSIG: Pounds per Square Inch Gauge. The measure of the pressure of a gas or liquid within a component or system, to the degree it is greater than that of the surrounding atmosphere, expressed in pounds per square inch. The internal pressure as shown on the gauges used on air dryers.

PSIA: Pounds per Square Inch Absolute. The measure of the pressure of a gas or liquid, expressed in pounds per square inch, relative to a total vacuum. PSIA is the sum of PSIG and the Barometric Pressure.

RATED CAPACITY: The dryer output air flow rate on which recommended maintenance intervals are predicted. Operation in conditions demands increased and more frequent maintenance.

SCFD: Standard Cubic Feet per Day. A rate of air flow measured in cubic feet at 14.7 PSIA and at 70°F (21°C)

STD. CONDITIONS: Standard operating conditions imply a reasonably clean environment at 70°F (21°C) and at sea level.

Ambient conditions impact dryer maintenance needs.

SYSTEM PRESSURE (also termed Back Pressure): The pressure at which the compressor and dryer towers operate. System pressure determines the quantity of compressed air flow, the quantity of purge air and the moisture load on the desiccant towers.

SUMMARY ALARM: An alarm which does not identify an individual condition, but which indicates an active state of one or more alarm sensors within the dehydrator. Alarm terminations which either close in alarm or open in alarm, or dual function terminations may be available, dependent on design parameters.

SEGREGATED ALARM: An alarm circuit which provides separate terminations for each alarm function within the dehydrator. Segregated alarms can provide to a remote location the information necessary for establishment of maintenance priorities. Alarm terminations which are either close in alarm or open in alarm, or dual function terminations may be available, dependent on design parameters.

13 WARRANTY

Subject to the conditions set out herein, Radiodetection expressly and exclusively provides the following warranty to original end user buyers of Radiodetection products.

Radiodetection hereby warrants that its products shall be free from defects in material and workmanship for a period of one (1) year with the exception of air dryers utilizing water sealed compressors as well as the compressors themselves which shall be for two (2) years starting from point of sale to end customer. Extensions of this warranty period may be available where the same terms and conditions apply.

13.1 Statement of warranty conditions

The sole and exclusive warranty for any Radiodetection product found to be defective is repair or replacement of the defective product at Radiodetection's sole discretion. Repaired parts or replacement products will be provided by Radiodetection on an exchange basis and will be either new or refurbished to be functionally equivalent to new.

In the event this exclusive remedy is deemed to have failed of its essential purpose, Radiodetection's liability shall not exceed the purchase price of the Radiodetection product. In no event will Radiodetection be liable for any direct, indirect, special, incidental, consequential or punitive damages (including lost profit) whether based on warranty, contract, tort or any other legal theory.

Warranty services will be provided only with the original invoice or sales receipt (indicating the date of purchase, model name and dealer's name) within the warranty period. This warranty covers only the hardware components of the Radiodetection product.

Before a unit is submitted for service or repair, under the terms of this warranty or otherwise, any data stored on the unit should be backed-up to avoid any risk of data loss. Radiodetection will not be responsible for loss or erasure of data storage media or accessories.

Radiodetection is not responsible for transportation costs and risks associated with transportation of the product. The existence of a defect shall be determined by Radiodetection in accordance with procedures established by Radiodetection.

This warranty is in lieu of any other warranty, express or implied, including any implied warranty of merchantability or fitness for a particular purpose.

This warranty does not cover:

- a. Periodic maintenance and repair or parts replacement due to wear and tear.
- b. Consumables (components that are expected to require periodic replacement during the lifetime of a product such as non-rechargeable batteries, bulbs, etc.).
- c. Damage or defects caused by use, operation or treatment of the product inconsistent with its intended use.
- d. Damage or changes to the product as a result of:
 - I. Misuse, including: - treatment resulting in physical, cosmetic or surface damage or changes to the product or damage to liquid crystal displays.
 - II. Failure to install or use the product for its normal purpose or in accordance with Radiodetection instructions on installation or use.

- III. Failure to maintain the product in accordance with Radiodetection instructions on proper maintenance.
- IV. Installation or use of the product in a manner inconsistent with the technical or safety laws or standards in the country where it is installed or used.
- V. Virus infections or use of the product with software not provided with the product or incorrectly installed software.
- VI. The condition of or defects in systems with which the product is used or incorporated except other 'Radiodetection products' designed to be used with the product.
- VII. Use of the product with accessories, peripheral equipment and other products of a type, condition and standard other than prescribed by Radiodetection.
- VIII. Repair or attempted repair by persons who are not Radiodetection warranted and certified repair houses.
- IX. Adjustments or adaptations without Radiodetection's prior written consent, including:
 - Upgrading the product beyond specifications or features described in the instruction manual, or modifications to the product to conform it to national or local technical or safety standards in countries other than those for which the product was specifically designed and manufactured.
- X. Neglect e.g. opening of cases where there are no user-replaceable parts.
- XI. Accidents, fire, liquids, chemicals, other substances, flooding, vibrations, excessive heat, improper ventilation, power surges, excess or incorrect supply or input voltage, radiation, electrostatic discharges including lightning, other external forces and impacts.

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