



Description:

Type III Scanner Modules are the primary input devices of a SmartSCAN defect detector system. They are used for both bearing scanner and wheel scanner applications. Except for different internal filter frames, the bearing scanner and wheel scanner modules are identical and interchangeable with the appropriate scanner mount. The Model 2500-512AC requires an input of 12VDC for the scanner circuitry and 115VAC for the heaters. These voltages are provided by the SmartScan defect detector system.

Type III scanner features include:

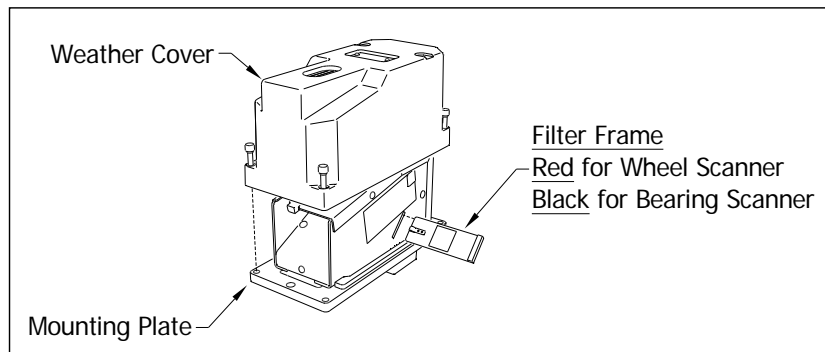
- An infrared sensor with associated optics.
- A shutter that prevents the entrance of contaminants during periods of inactivity.
- A heater that removes moisture from the infrared sensor assembly.
- A vibration resistant connection between the scanner and the system electronics.
- A specially designed scanner profile to reduce the airfoil effect and improve reliability while operating in adverse weather conditions.

Operation:

Within each Type III Scanner is a pyrometer that measures the change of infrared radiation emanating from the point at which it is aimed. As infrared radiation increases, the output from the scanner increases proportionally. This increase is expressed as a positive analog voltage.

The scanner generates a signal when exposed to a passing heat source, such as heat from a bearing or wheel. The ambient reference is obtained from the bottoms of the vehicles as they pass over. The waveform of the heat signal is an electrical representation of the heat generated by the passing bearing or wheel with respect to the ambient reference. The heat signal travels from the scanner through the cable to the SmartScanNG enclosure. It then passes through the System Interconnect Board to the Interface Board. Here, the amplitude of the heat signal is scaled to represent an accurate representation of the temperature. Next, the heat signal passes to the Processor board and digitized for use by STC's Dynamic Scan Rate (DSR) algorithms.

The scanners have heaters built into them to avoid errant heat readings caused by moisture on the pyrometer lenses. The heaters are made active, for varying periods of time, when the ambient temperature is 26.7°C (80°F) or less.



Aluminum Filter Frames

Item # 2500-535 Black Filter Frame is designated for bearing scanner applications.

Item # 2500-536 Red Filter Frame is designated for wheel scanner applications.



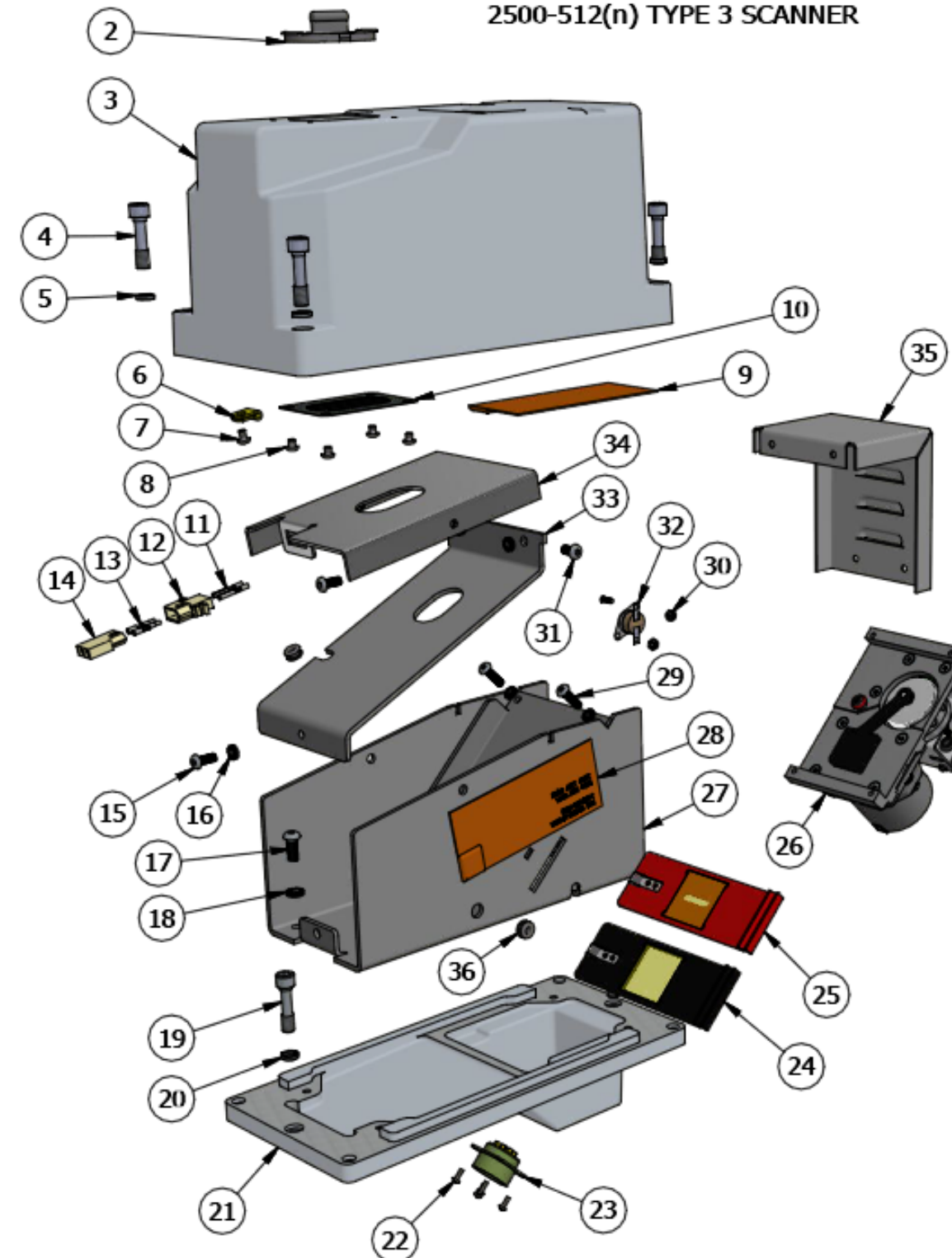
General Specifications

Input Voltage	+12VDC and 100VAC to 130VAC (Powered from SmartSCAN NG/NG ²)
Heaters	Three Thermofoil Heaters, 115VAC 300W
Temperature Spec. – Industrial	-40°C to +70°C
Dimensions	12.00”L x 5.50”W x 8.00”H
Weight	15.85 lbs.

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	2500-560	Type 3 Weather Cover Assembly
2	1	41-121-205	Resistor Test Cover
3	1	41-121-157	Type 3 Scanner Weather Cover
4	4	41-121-171	SHCS 5/18-18 x 1-1/4 (modified)
5	4	41-122-008	.312" high collar split lock nut (s.steel)
6	1	12-131-007	Cable Clamp
7	1	01-100-022	SBH 8-32 X 1/4"
8	4	01-100-026	SBH 8-32 X 3/16"
9	1	24-100-015	100W 115V Heater
10	1	41-121-128	Rodent Screen Frame
11	2	14-107-012	Molex .094 socket
12	1	14-107-001	Molex 2-pin female housing
13	2	14-107-011	Molex pin
14	1	14-107-002	Molex 2 pin male housing
15	5	01-100-004	SBH 10-32 X 1/2"
16	9	01-123-016	Nord Lock Washer #10 S.Steel NL5ss
17	4	01-100-023	SBH 1/4-20 x 5/8"
18	4	01-123-023	Nord Lock Washer 1/4" S.Steel NL1/4"ss
19	2	41-121-171	SHCS 5/18-18 x 1-1/4 (modified)
20	2	41-122-008	.312" high collar split lock nut (s.steel)
21	1	41-121-156	Scanner Assembly Mtng. Plate
22	4	01-108-045	PPH 4-40 X 5/16"
23	1	14-112-044	Box Connector(CTI 851-02A18-11P50)
24	1	2500-535	Filter Frame (Bearing)
25	1	2500-536	Filter Frame (hot wheel)
26	1	2500-640	Type 3 Pyro Scanner Assembly
27	1	41-121-173	Shell Assembly
28	2	24-100-015	100W 115V Heater
29	4	01-100-021	SBH 10-32 x .75"
30	2	01-118-001	ESNA 8-32 Stainless Stl.
31	2	01-100-024	SBH 10-32 x .375"
32	1	24-101-001	Snap Disk Thermostat 80-110 deg
33	1	41-121-176	Middle Shield Assembly
34	1	41-121-179	Top Baffle
35	1	00-121-178	Shell End Cover
36	4	12-114-007	Rubber Grommet 1/4" ID X 1/8" THK

SOUTHERN TECHNOLOGIES CORP.

2500-512(n) TYPE 3 SCANNER



Note: **Item 1**, is not shown but includes Items 2 thru 10.
Item 24, Hot Bearing Filter Frame (black) comes standard with all new scanners.
Item 25, Hot Wheel Filter Frame (red) is required if the scanner is to be used as hot wheel detector and must be ordered separately.

2500-512AC Scanner Wiring

Pyro Wires:
Twist Black and Brown/Orange
Wires Together then Wrap Red
Wire Around Twisted Pair

