FibreLink III
Standalone Version
Operations Manual

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DOCUMENT NO.: 1808-0010-01 REV A

DECEMBER 2011

Made in the United States of America

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TABLE OF CONTENTS

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1.0 CAUTIONS AND WARNINGS

WARNING: ***Never view the fiber emitters (ST-TX connectors) under magnification with power on. To do so could result in damage to the human eye.***

WARNING: ***Disconnect mains power from the FibreLink III during installation and replacement of components. Failure to do so may result in damage to personnel and/or equipment.***

CAUTION: ***The ST fiber connectors are constructed of molded plastic. While they are durable, it is wise to attach and remove ST fiber optic cable connectors with care to avoid damage, especially if said connectors are of metal construction.***

SAFETY:

This equipment is intended only for the purposes specified in this manual. Safety protections inherent in this equipment may be impaired if used in a manner different than specified herein.

The following are internationally recognized symbols used on the FibreLink III along with specific cautions applicable to the equipment.

Label Standard Number:
ISO 3864 B.3.1

Generic meaning:
CAUTION: RISK OF DANGER. CONSULT MANUFACTURER'S DOCUMENTATION.

Cautions Invoked By This Label for FibreLink III:

1. Junction Box Cover is to be removed only by trained service personnel.
2. This equipment must be installed by a qualified electrician.

Label Standard Number:
ISO 3864 B.3.6

Meaning:
CAUTION: RISK OF ELECTRIC SHOCK.
Hazardous AC supply inside. Disconnect mains power before servicing.

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2.0 DESCRIPTION

Fiber optic communication has in many cases provided increased immunity to electrical interference due to electrostatic discharge (ESD) and conductive and radiative electromagnetic fields. Many users have reported significant reductions in the severity and frequency of lightning strike damage to electrical equipment after proper installation of fiber optic communication devices between stack-mounted and control room equipment.

The FibreLink III Standalone Version fiber optics interface is a repeater device designed to create an electrically isolated fiber optic bridge between two FTT10A LONWORKS® twisted pair networks.

The Stack Unit is packaged in a NEMA4X enclosure and as such is designed for use in outdoor applications. The Control Room Unit is packaged in an extruded aluminum case and is not suitable for outdoor use. The Control Room Unit is intended for use in indoor environments such as control rooms and temperature controlled Continuous Emission Monitoring System (CEMS) shelters. Both units contain an identical, interchangeable circuit board that converts FTT10A twisted pair network signals into fiber optic signals running at approximately 78K BAUD. The Stack Unit contains a transformer to reduce power mains voltage to approximately 24VAC for use by the internal circuit board. The Control Room Unit is shipped with a wall transformer that performs the equivalent function. See Figure 1, FibreLink III Block Diagram.

All network packets are passed between both ends of the network. Routing functions are not supported. These features make the FibreLink III ideally suited for use with the LightHawk® 560, LaserHawk® 360, Ultraflow 150, and Model 550.

The fiber optic signals in the FibreLink III are multimode near infrared with a nominal wavelength of 850 nanometers (nm). The fiber emitters are based on light emitting diode (LED) technology. The device is designed for use with ST connectors and 62.5/125 micron multimode fiber. Two fibers are required for operation, though the installation of spare fibers is strongly encouraged.

For an overview of proper installation practice, consult the installation drawings in Appendix B of this manual.

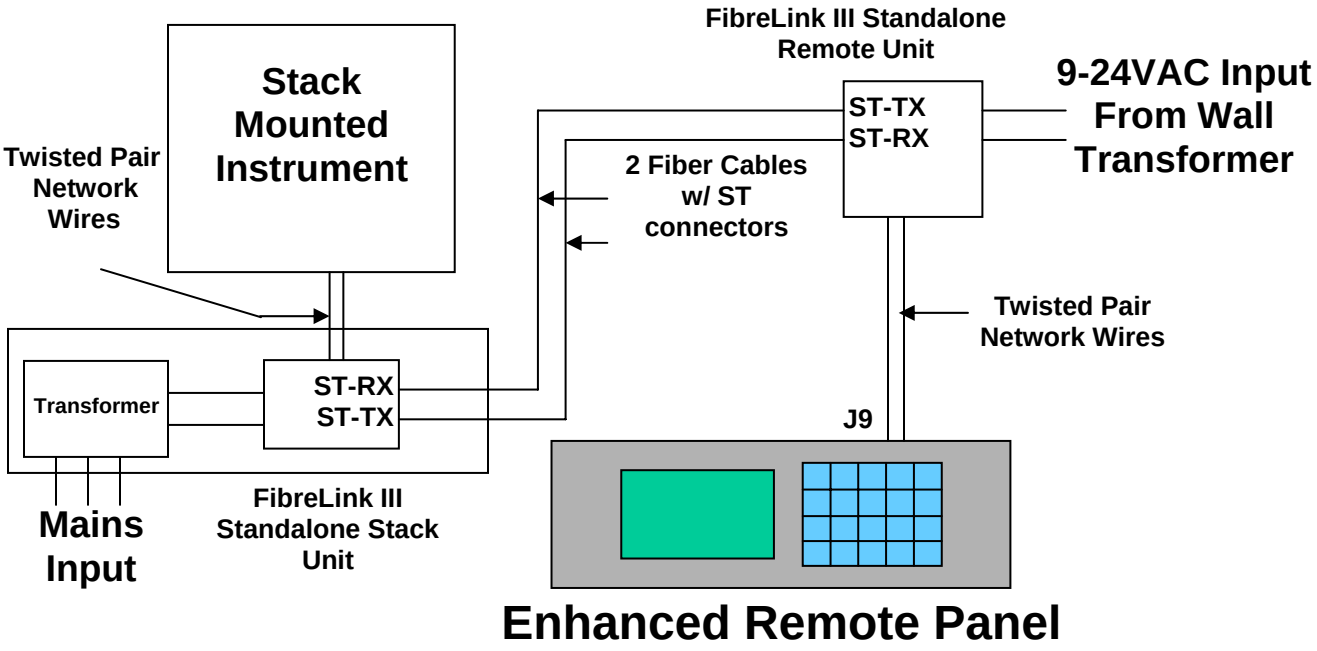

Figure 1
FibreLink III Block Diagram

3.0 SPECIFICATIONS

PHYSICAL DIMENSIONS

Stack Unit	*5-3/8”(137mm)(L) X 11-1/2”(292mm)(W) X 13-1/2”(343mm)(H)*
Control Room Unit	*1-7/8”(47.6mm)(L) X 6-1/4”(82.6mm)(W) X 5-1/8”(130mm)(H)*

PHYSICAL WEIGHTS

Stack Unit	*8.9 lbs. (4.04 kg)*
Control Room Unit	*1.2 lbs. (0.544 kg)*

OPTICAL CHARACTERISTICS

Nominal Wavelength	*850 nm*
Fiber Optic Connectors	*ST Style*
Number of Fibers Required for Operation	*2*
Cable Type	*62.5/125 micron, Multimode*
Maximum Fiber Optic Cable Length	*6,561.7 feet (2 km)* *(Assuming attenuation of 3.75 db/km from cable, 0.5 dB each for two ST connectors per fiber and 3dB of margin.)*

POWER REQUIREMENTS

Stack Unit	*-01: 98-132 VAC, 47-63Hz, Single Phase, 8 VA Maximum,* *Fuses: 0.5 Amp, 250V, SLO-BLO* *-02: 230 VAC, 47-63Hz, Single Phase, 8 VA Maximum* *Fuses: 0.25 Amp, 250V, SLO-BLO*
Control Room Unit	*9-24 VAC, 47-63Hz, Single Phase, 1.5 VA Maximum* *-01: provided with Wall Mount Transformer for 115VAC* *-02: provided with Wall Mount Transformer for 230VAC*

AMBIENT OPERATING CONDITIONS

Stack Unit	*Temperature Range:-40 to +150°F (-40 to +65.6°C)* *Relative Humidity Range: 5% to 100% condensing* *Enclosure Rating: NEMA4X*
Control Room Unit	*Temperature Range:-40 to +150°F (-40 to +65.6°C)* *Relative Humidity Range: 5% to 95% noncondensing* *Enclosure Rating: NEMA1*

WIRING REQUIREMENTS

Network Transceiver Type	*Free Topology Transceiver (FTT10A)*
Cable Type	*2 conductor shielded twisted pair, 16 AWG (ALPHA 5610B1601, or equivalents). See Note 2.*
Termination Style	*Jumper Selectable Single / Double Termination (Internal)*
Maximum Wire Length Between Optical Head & FibreLink III	*820 feet (0.25 km) [must be Double Terminated]* *SEE NOTE 1.*
Maximum Wire Length Between Enhanced Remote Panel & FibreLink III	*65 feet (20M) [must be Double Terminated]* *SEE NOTE 1.*

NOTES

1. Since the most frequent application of the FibreLink is as a means to reduce lightning strike damage to stack-mounted equipment, short distances of wire cable are highly encouraged. Long lengths of wire will reduce the effectiveness of the equipment for this purpose.
2. Shielded cable drain wires must be terminated as per installation drawing guidelines using shield termination kit, TML Part Number 0650-0400-01.
3. FibreLink III units function as repeaters, i.e., all network traffic is passed through in both directions.
4. The FibreLink III Standalone unit is designed for use with the 550 Opacity Monitor, the LightHawk 560 Opacity Monitor, the 150 Ultraflow & the 360 Backscatter Monitor.

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APPENDIX A

SPARE PARTS

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RECOMMENDED SPARE PARTS

The important spare parts for the FibreLink III are the internal circuit board, which is interchangeable between the Stack and Remote Units, and the external fuses for the Stack Unit. The following table contains recommended quantities based on the number of operating links at a given plant.

Recommended Quantity	FibreLinks in Service At Plant*	Part Number	Description
1	1 to 2	1903-2200-01	FibreLink III Standalone Circuit Board Assembly
2	3 to 5		
3	6 or more		
4	1 to 2	527367	0.5 Amp, 250 V, SLO-BLO Fuse (for Stack Unit)
8	3 to 5		
12	6 or more		

***** Each FibreLink in this table is comprised of 2 circuit boards (one each for the Stack and Remote Units).

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APPENDIX B

DRAWINGS

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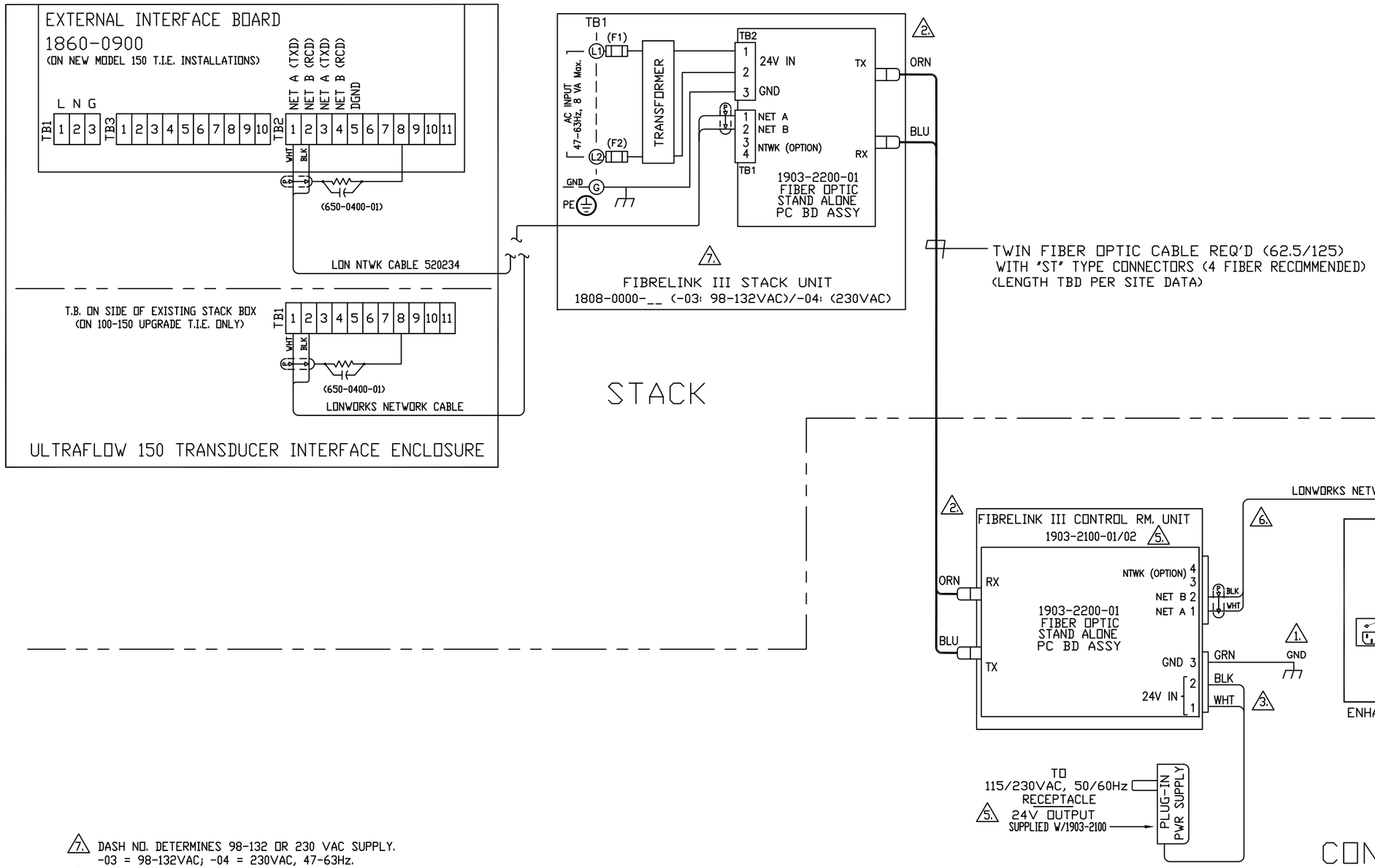
DVG. NO 1808-0003 SH 4

REVISIONS				
ZONE	SYM.	DESCRIPTION	DATE	APPD.
	C	ADDED THIS SHT PER DCN #1808-0003C	4-15-03	DMB
	D	PER DCN 1808-0003D	12-2-03	DMB
	E	PER DCN 1808-0003E	11-3-11	ELM



7. DASH NO. DETERMINES 98-132 OR 230 VAC SUPPLY.
-03 = 98-132VAC; -04 = 230VAC, 47-63Hz.

6. LOCATE CONTROL ROOM UNIT IN CLOSE PROXIMITY TO ENHANCED REMOTE PANEL FOR BEST RESULTS.

5. DASH NO. DETERMINES 115 OR 230 VAC SUPPLY.
-01 = 115VAC; -02 = 230VAC, 50/60Hz

4. SEE TML SYSTEM WIRING DIAGRAM 1900-0004 OR 1900-0005 (MODEL 100 TO 150 UPGRADE) FOR ADDITIONAL WIRING AT EACH END OF NETWORK.

3. WHT/BLK WIRE COLOR SHOWN FOR REFERENCE ONLY. (AC INPUT WIRES INTERCHANGEABLE)

2. CONNECT BOTH FIBERS AT EACH END.

NOTES: 1. GROUND TERMINAL ON CONTROL RM. UNIT SHOULD BE TIED TO APPROPRIATE EARTH GROUND TERMINAL.

DIMENSIONAL TOLERANCES
UNLESS OTHERWISE SPECIFIED
FRACTIONS 0 TO 4 ±1/32; 4 TO 8 ±1/16; 8 AND UP ±1/8
DECIMALS .XX ±.01; .XXX ±.005
ANGLES ±0°30'
RMS FINISH
ALL DIMENSIONS ARE IN INCHES
DO NOT SCALE THIS DRAWING

AUTHORIZATION	BY	DATE
DRAWN	DCH	3-24-03
CHECKED	DMB	7-11-03
DESIGNED	DCH	3-24-03
ENGINEERED	DMB	7-11-03
PRODUCTION	PD	7-11-03
Q.A.	AS	7-11-03

PROJECTION

USED ON

DASH NO	NEXT ASSEMBLY
	150 TOP

TELEDYNE MONITOR LABS
A Teledyne Technologies Company

TITLE
SYSTEM WIRING DIAGRAM
150 WITH FIBRELINK III OPTION
(SUPPLEMENTAL DRAWING)

MAT'L. | FINISH | JIG NO.

SCALE NTS | SHEET 4 OF 6

DRAWING NO. 1808-0003 | LATEST REVISION E

D

11-30-11

ACAD2012 FILE 18080003-S4

DWG. NO 1808-0003 SH 5

REVISIONS				
ZONE	SYM.	DESCRIPTION	DATE	APPD.
	C	ADDED THIS SHT PER ECN #1808-0003C	4-15-03	DMB
	D	PER DCN 1808-0003D	12-2-03	DMB
	E	PER DCN 1808-0003E	11-3-11	ELM

560 LIGHTHAWK OPTICAL HEAD
INTEGRAL JUNCTION BOX

TB1: L N G (1 2 3)
TB3: 1 2 3 4 5 6 7 8 9 10
TB2: NET A (TXD) NET B (RCD) NET A (TXD) NET B (RCD) DGND (1 2 3 4 5 6 7 8 9 10 11)
TB4: 1 2
WHT BLK
(650-0400-01)

LONWORKS NETWORK CABLE

TB1: (F1) L1, AC INPUT 47-63Hz, 8 VA Max., (F2) L2, TRANSFORMER, GND G, PE
TB2: 1 24V IN, 2 GND, 3
TB1: 1 NET A, 2 NET B, 3 NTWK (OPTION), 4
TX ORN, RX BLU
1903-2200-01
FIBER OPTIC
STAND ALONE
PC BD ASSY

FIBRELINK III STACK UNIT
1808-0000-__ (-03: 98-132VAC)/-04: (230VAC)

TWIN FIBER OPTIC CABLE REQ'D (62.5/125)
WITH "ST" TYPE CONNECTORS (4 FIBER RECOMMENDED)
(LENGTH TBD PER SITE DATA)

STACK

(OPTIONAL)

AI-10 ANALOG INPUT MODULE
1807-0000-0X

INTERFACE MODULE
WHT BLK WHT BLK
NTWK INPUT, NTWK OUTPUT
NOT USED
TB1: 1 2 3 4 5 6
115/230VAC INPUT
F1 F2 XFMR
INCOMING POWER
ANLG INP #2, ANLG INP #1
NOT USED
18 17 16 15 14 13 12 11 10

LONWORKS NETWORK CABLE

CONTROL ROOM

FIBRELINK III CONTROL RM. UNIT
1903-2100-01/02
ORN RX, BLU TX
1903-2200-01
FIBER OPTIC
STAND ALONE
PC BD ASSY
NTWK (OPTION) 4, NET B 2, NET A 1
GND 3
24V IN 2 1
BLK WHT
GRN GND
BLK
WHT

TO
115/230VAC, 50/60Hz
RECEPTACLE
24V OUT
SUPPLIED W/1903-2100
PLUG-IN PWR SUPPLY

LONWORKS NETWORK CABLE

ENHANCED REMOTE PANEL
(OR MULTI I/O MODULE)
J9 J10 BLK WHT NETWK
J1 J2 J3 J4 J5 J6 J7 J8

ENHANCED REMOTE PANEL
1803-2000-0X

NOTES:

6. WHT/BLK WIRE COLOR SHOWN FOR REFERENCE ONLY. (AC INPUT WIRES ARE INTERCHANGEABLE)
5. GROUND TERMINAL ON MODULE SHOULD BE TIED TO APPROPRIATE EARTH GROUND TERMINAL.
4. SEE TML SYSTEM WIRING DIAGRAM 1860-0001 FOR ADDITIONAL WIRING AT EACH END OF NETWORK.
3. DASH NO. DETERMINES 115 OR 230 VAC SUPPLY. -01 = 115VAC; -02 = 230VAC, 50/60Hz.
2. CONNECT BOTH FIBERS AT EACH END OF FIBER CABLE.
1. FIBRELINK III OPTION MAY BE USED WITH ANY OF THE NON-DIRECT INTERFACE VERSIONS. IF THE ANALOG INPUT MODULE OPTION IS PROVIDED, CONNECT THE 560 OPTICAL HEAD TO THE ANALOG INPUT MODULE, THEN THE FIBRELINK II MODULE TO THE ANALOG MODULE AS SHOWN.
8. DASH NO. DETERMINES 98-132 OR 230 VAC SUPPLY. -03 = 98-132VAC; -04 = 230VAC, 47-63Hz.
7. LOCATE CONTROL ROOM UNIT IN CLOSE PROXIMITY TO THE ENHANCED REMOTE PANEL FOR BEST RESULTS.

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONS 0 TO 4 ±1/32, 4 TO 8 ±1/16, 8 AND UP ±1/8
DECIMALS .XX ±.01, .XXX ±.005
ANGLES ±0°30'
RMS FINISH
ALL DIMENSIONS ARE IN INCHES
DO NOT SCALE THIS DRAWING

AUTHORIZATION

	BY	DATE
DRAWN	DCH	4-15-03
CHECKED	DMB	7-11-03
DESIGNED	DCH	4-15-03
ENGINEERED	DMB	7-11-03
PRODUCTION	PD	7-11-03
Q.A.	AS	7-11-03

PROJECTION

USED ON

DASH NO	NEXT ASSEMBLY
	560 TOP

TELEDYNE MONITOR LABS
A Teledyne Technologies Company

TITLE
SYSTEM WIRING DIAGRAM
560 WITH FIBRELINK III OPTION
(SUPPLEMENTAL DRAWING)

MAT'L. FINISH
JIG NO.
SCALE NTS
SHEET 5 OF 6
DRAWING NO. 1808-0003
LATEST REVISION E
D
11-30-11

ACAD2012 FILE 18080003-S5

DWG. NO 1808-0003 SH 6

REVISIONS				
ZONE	SYM.	DESCRIPTION	DATE	APPD.
	C	ADDED THIS SHT PER ECN #1808-0003C	4-15-03	DMB
	D	PER DCN 1808-0003D	12-5-03	DMB
	E	PER DCN 1808-0003E	11-3-11	ELM

550 STACK CONTROLLER MODULE (SCM)

P6 / TB6: 1 AMUX SIG (+) · 2 AMUX SIG (-) · 3 +15VDC · 4 -15VDC · 5 DC COM

P5 / TB5: 1 -15VDC · 1 -15VDC · 2 +15VDC · 3 PURGE STATUS · 4 TIE PT. · 4 TIE PT.

P1 / TB1: 6 115VAC-(L) · 5 115VAC-(N) · 4 GND · 3 GND · 2 115VAC-(N) · 1 115VAC-(L)

TB7 / P7: 4 DC COM · 3 +15VDC · 2 DT2 SIGNAL · 1 DT1 SIGNAL

TB3 / P3: 1 NET A · 2 NET B · 3 NET A · 4 NET B

TB2 / P2: 3 115VAC-L2 · 2 115VAC-L1 · 1 115VAC FROM CAP

WHT · BLK · (650-0400-01)

LONWORKS NETWORK CABLE

STACK

TB1: (F1) L1 · (F2) L2 · GND (G) · PE

AC INPUT 47-63Hz, 8 VA Max. · TRANSFORMER

TB2: 1 24V IN · 2 GND · 3

TB1: 1 NET A · 2 NET B · 3 NTWK (OPTION) · 4

1903-2200-01 FIBER OPTIC STAND ALONE PC BD ASSY

TX → ORN · RX ← BLU

TWIN FIBER OPTIC CABLE REQ'D (62.5/125) WITH "ST" TYPE CONNECTORS (4 FIBER RECOMMENDED) (LENGTH TBD PER SITE DATA)

FIBRELINK III STACK UNIT
1808-0000-__ (-03: 98-132VAC)/-04: (230VAC)

(OPTIONAL)

AI-10 ANALOG INPUT MODULE
1807-0000-0X

INTERFACE MODULE

WHT · BLK · WHT · BLK

1 NTWK INPUT · 2 · 3 NTWK OUTPUT · 4 · 5 NOT USED

TB1: 1 · 2 · 3 F1 · 4 F2 · 5 · 6 — 115VAC 60Hz INPUT — XFMR

6 · 7 INCOMING POWER

8 · 9 NOT USED

ANLG INP #2: 13 (-) · 12 (+)

ANLG INP #1: 11 (-) · 10 (+)

18 · 17 · 16 · 15 · 14

LONWORKS NETWORK CABLE

CONTROL ROOM

LONWORKS NETWORK CABLE

FIBRELINK III CONTROL RM. UNIT
1903-2100-01/02

ORN → RX · BLU → TX

1903-2200-01 FIBER OPTIC STAND ALONE PC BD ASSY

NTWK (OPTION) 4 · 3 · NET B 2 · NET A 1

BLK · WHT

GRN · BLK · WHT

GND 3

24V IN 2 · 1

GND

TO 115/230VAC, 50/60Hz RECEPTACLE
24V OUTPUT
SUPPLIED W/1903-2100 → PLUG-IN PWR SUPPLY

ENHANCED REMOTE PANEL OR MULTI I/O MODULE

J9 · J10 · LB NETWK

J1 · J2 · J3 · J4 · J5 · J6 · J7 · J8

ENHANCED REMOTE PANEL
1803-0000-XX

6. WHT/BLK WIRE COLOR SHOWN FOR REFERENCE ONLY. (AC INPUT)
5. GROUND TERMINALS ON EACH END SHOULD BE TIED TO APPROPRIATE EARTH GROUND TERMINAL.
4. SEE TML SYSTEM WIRING DIAGRAM 600-0088 FOR ADDITIONAL WIRING AT EACH END OF NETWORK.
3. DASH NO. DETERMINES 115 OR 230 VAC SUPPLY. -01 = 115VAC; -02 = 230VAC, 50/60Hz.
2. BOTH FIBERS MUST BE CONNECTED AT EACH END OF CABLE FOR PROPER OPERATION.
1. FIBRELINK III OPTION MAY BE USED WITH THE MODEL 550 OPACITY MONITOR. IF THE ANALOG INPUT MODULE OPTION IS PROVIDED, CONNECT THE 550 STACK CONTROL MODULE TO THE ANALOG INPUT MODULE, THEN THE FIBRELINK III MODULE TO THE ANALOG MODULE AS SHOWN.

8. DASH NO. DETERMINES 98-132 OR 230 VAC SUPPLY. -03 = 98-132VAC; -04 = 230VAC, 47-63Hz.
7. LOCATE CONTROL ROOM UNIT IN CLOSE PROXIMITY TO THE ENHANCED REMOTE PANEL FOR BEST RESULTS.

NOTES:

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONS 0 TO 4 ±1/32 · 4 TO 8 ±1/16 · 8 AND UP ±1/8
DECIMALS XX ±.01 · XXX ±.005
ANGLES ±0°30'
RMS FINISH ✓
ALL DIMENSIONS ARE IN INCHES DO NOT SCALE THIS DRAWING

AUTHORIZATION

	BY	DATE
DRAWN	DCH	4-15-03
CHECKED	DMB	7-11-03
DESIGNED	DCH	4-15-03
ENGINEERED	DMB	7-11-03
PRODUCTION	PD	7-11-03
Q.A.	AS	7-11-03

PROJECTION

USED ON

DASH NO	NEXT ASSEMBLY
	550 TOP

TELEDYNE MONITOR LABS
A Teledyne Technologies Company

TITLE
SYSTEM WIRING DIAGRAM
550 WITH FIBRELINK III OPTION
(SUPPLEMENTAL DRAWING)

MAT'L. · FINISH · JIG NO.

SCALE NTS · SHEET 6 OF 6

DRAWING NO. 1808-0003 · LATEST REVISION E

D

11-30-11

ACAD2012 FILE 1808003-S6

DWG. NO 1810-0016 SH 1

REVISIONS				
ZONE	SYM.	DESCRIPTION	DATE	APPD.
	A	RELEASED FOR PRODUCTION	12-15-05	ELM
	B	PER DCN 1810-0016B	3-14-07	ELM
	C	PER DCN 1810-0016C	11-30-11	ELM

360 LASERHAWK OPTICAL HEAD
INTEGRAL JUNCTION BOX

TB1: L N G (1 2 3)
TB3: 1 2 3 4 5 6 7 8 9 10
TB2: NET A (TXD) 1, NET B (RCD) 2, NET A (TXD) 3, NET B (RCD) 4, DGND 5, 6, FRAME 7, 8, 9, 10, 11
TB4: 1 2
WHT, BLK
(650-0400-01)

LONWORKS NETWORK CABLE (1.)

TB1: (F1) L1, (F2) L2, AC INPUT 47-63Hz, 8 VA Max., TRANSFORMER, GND, PE
TB2: 1 24V IN, 2 GND, 3
TB1: 1 NET A, 2 NET B, 3 NTWK (OPTION), 4
TX, RX
ORN, BLU (2.)
1903-2200-01
FIBER OPTIC
STAND ALONE
PC BD ASSY
FIBRELINK III STACK UNIT
1808-0000-__ (-03: 98-132VAC)/-04: (230VAC)

TWIN FIBER OPTIC CABLE REQ'D (62.5/125)
WITH "ST" TYPE CONNECTORS (4 FIBER RECOMMENDED)
(LENGTH TBD PER SITE DATA)

STACK

CONTROL ROOM

LONWORKS NETWORK CABLE

FIBRELINK III CONTROL RM. UNIT
1903-2100-01/02 (7.)
ORN, BLU
RX, TX
NTWK (OPTION) 4, NET B 2, NET A 1, GND 3, 24V IN 2, 1
1903-2200-01
FIBER OPTIC
STAND ALONE
PC BD ASSY
BLK, WHT (6.)
GRN — GND
BLK
WHT

TO
115/230VAC,50/60Hz
RECEPTACLE
24V OUT
SUPPLIED W/1903-2100
(7.) PLUG-IN PWR SUPPLY

ENHANCED REMOTE PANEL
1803-2000-0X
J1 J2 J3 J4 J5 J6 J7 J8
J9: BLK, WHT
J10: NETWK

CUSTOMER USE: -15VDC, +15VDC, AGND
TB2: 7 8 9
1810-1500-01 (OPTIONAL)
POWER SUPPLY
PC BOARD
1860-1100
+/-15VDC OUTPUT
TB1: LINE, NEUT, PE (3.)
AC PWR INPUT
GRN/YEL

DUAL
ANALOG INPUT
PC BOARD
1903-0300
P2 J2: WHT/BLK DATA A, DATA B; WHT/BLK DATA A, DATA B
J4 P4: 4-20ma, GND, V IN
J3 P3: REF, RTD INP, 4-20ma, GND, V IN

LONWORKS NETWORK CABLE

4-20ma INPUT (OPTIONAL)
4-20ma INPUT (OPTIONAL)
RTD INPUT (OPTIONAL)

OPTIONAL WIRING
FOR DUAL ANALOG INPUT MODULE

(7.) DASH-01 = 115VAC, -02 = 230VAC SUPPLY REQUIRED.
(6.) WHT/BLK WIRE COLOR SHOWN FOR REFERENCE ONLY. (AC INPUT WIRES ARE INTERCHANGEABLE)
(5.) TERMINATE 'PE' GROUND WIRE UNDER BOTTOM NUT, THEN TB1 GROUND WIRE UNDER TOP NUT.
4. SEE TML SYSTEM WIRING DIAGRAM 1810-0012 FOR ADDITIONAL WIRING AT EACH END OF NETWORK.
(3.) POWER REQUIREMENT IS 85-245VAC, 50/60Hz, 1Ø, 35VA.
(2.) CONNECT BOTH FIBERS AT EACH END OF FIBER CABLE.
(1.) FIBRELINK III OPTION MAY BE USED WITH THE NON-DIRECT INTERFACE VERSION. IF THE ANALOG INPUT MODULE OPTION IS PROVIDED, CONNECT THE 360 OPTICAL HEAD TO THE ANALOG INPUT MODULE, THEN THE FIBRELINK III MODULE TO THE ANALOG MODULE AS SHOWN.

NOTES:

SUPPLEMENTAL DRAWING ONLY. SEE 1810-0012.

DIMENSIONAL TOLERANCES
UNLESS OTHERWISE SPECIFIED
FRACTIONS 0 TO 4 45/32; 4 TO 8 61/16; 8 AND UP 65/8
DECIMALS XX ±.01; XXX ±.005
ANGLES ±0°30'
RMS FINISH √
ALL DIMENSIONS ARE IN INCHES
DO NOT SCALE THIS DRAWING

AUTHORIZATION

	BY	DATE
DRAWN	DCH	12-15-05
CHECKED	ELM	1-03-06
DESIGNED	DCH	12-15-05
ENGINEERED	ELM	1-03-06
PRODUCTION	GA	1-04-06
Q.A.	AS	1-04-06

PROJECTION

USED ON

DASH NO	NEXT ASSEMBLY
	360 TOP

TELEDYNE MONITOR LABS
A Teledyne Technologies Company

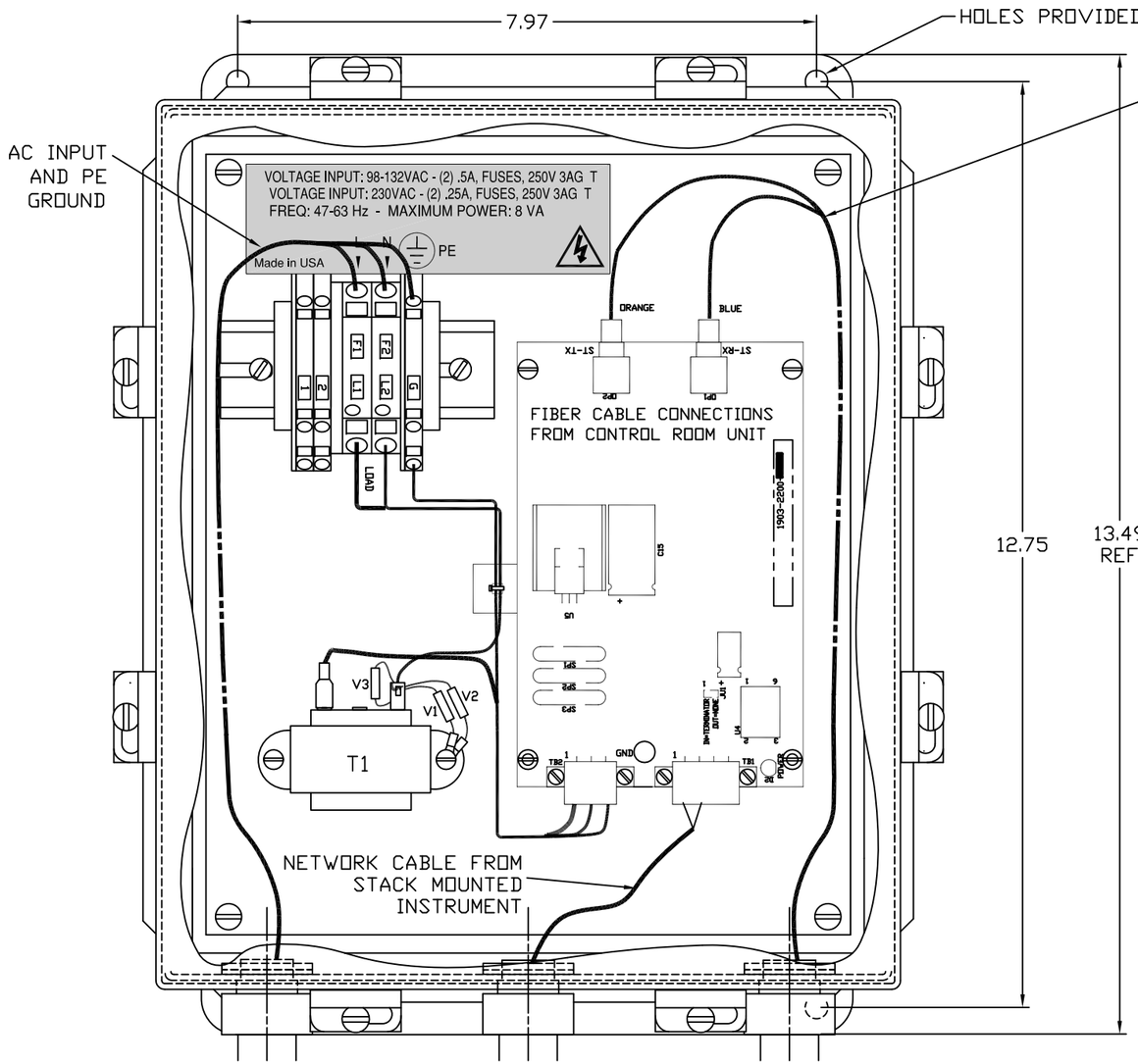
TITLE
SYSTEM WIRING DIAGRAM
360 WITH FIBRELINK III OPTION
(SUPPLEMENTAL DRAWING)

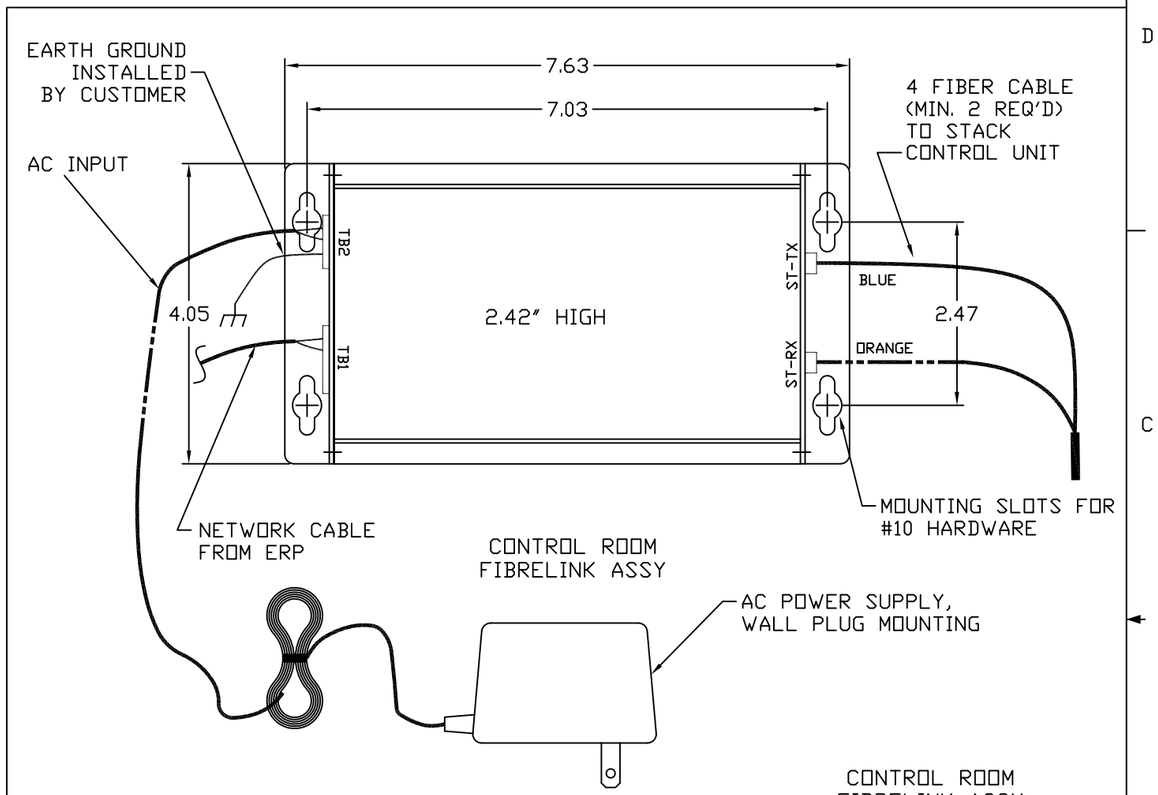
MAT'L. FINISH
JIG NO.
SCALE NTS
SHEET 1 OF 1
DRAWING NO. 1810-0016
LATEST REVISION C
D
11-30-11

ACAD2012 FILE 18100016

DWG. NO 1808-0009 | SH 1

REVISIONS				
ZONE	SYM.	DESCRIPTION	DATE	APPD.
	A	PER DCN 1808-0009A	2-9-04	DMB
	B	PER DCN 1808-0009B	11-16-11	ELM





NOTES:

1. FOR WIRING SEE DRAWING 1808-0003, SHEET 6 (550);
   1808-0003, SHEET 5 (560);
   1808-0003, SHEET 4 (150).
   1810-0016, SHEET 1 (360).
2. FIBERLINK III INTERFACE CONSISTS OF TWO CONTROL UNITS. ONE IS STACK MOUNTED IN A NEMA 4X ENCLOSURE AND THE OTHER IS LOCATED IN THE CONTROL ROOM, SUPPLIED WITH A WALL PLUG-IN POWER SUPPLY. THE NETWORK CABLES CONNECT BETWEEN THE TML ELECTRONICS AND THE CONTROL UNITS AT EACH LOCATION. THE FIBER CABLE CONNECTS BETWEEN THE CONTROL UNITS.

DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONS: 0 TO 4 ±1/32; 4 TO 8 ±1/16; 8 AND UP ±1/8
DECIMALS: .XX ±.01; .XXX ±.005
ANGLES: ±0°30'
RMS FINISH
ALL DIMENSIONS ARE IN INCHES
DO NOT SCALE THIS DRAWING

AUTHORIZATION	BY	DATE
DRAWN	DCH	4-22-03
CHECKED	DMB	7-11-03
DESIGNED	DCH	4-22-03
ENGINEERED	DMB	7-11-03
PRODUCTION	PD	7-11-03
Q.A.	AS	7-11-03

PROJECTION

USED ON	
DASH NO	NEXT ASSEMBLY
-01	550/560/150/360

TELEDYNE MONITOR LABS
A Teledyne Technologies Company

TITLE: FIBRELINK III INSTALLATION DRAWING

MAT'L. | FINISH | JIG NO. | SCALE 1:1 | SHEET 1 OF 1

DRAWING NO. 1808-0009 | LATEST REVISION B | SIZE D

ACAD2012 FILE 18080009

11-16-11