AstroNova®
Aerospace

TOUGHWRITER®

Flight Deck Printer Upgrade Program

Narrow and Wide-Body Aircraft

AstroNova® Aerospace

AstroNova Aerospace designs and manufactures printers, networking hardware and related accessories used in the aircraft flight deck to print flight plans, navigation information and performance data. These products are also used in the aircraft cabin to print maintenance data, receipts and passenger manifests.

With more than four decades of experience designing products for aerospace, alongside an infrastructure dedicated to supporting aerospace customers, AstroNova Aerospace has become the #1 supplier of airborne printers in the world.

AstroNova is currently supplying airborne printers for most commercial and military transport aircraft, including the Airbus A380, A400M, A350 and A330; Boeing C17, B787, B777, B747, B737NG, and B737MAX, and the Lockheed C130J. AstroNova also provides printers for Embraer, ATR and Bombardier regional aircraft.

ISO 9001 certified since 1993, AstroNova Aerospace is committed to practices that meet all ISO standards. AstroNova Aerospace has also been AS9100 certified since 2009 and holds FAA part 145 and EASA part 145 certifications as a repair station, both important certifications for the aerospace and defense industries.

Increase Reliability and Reduce Operating Costs

AstroNova's flight deck printer upgrade program provides increased reliability and significant cost savings for any aircraft operator, through utilizing the most advanced airborne printer technology on the market.

Built to withstand the rigors of the flight deck, our airborne printers are remarkably lightweight, lowering fuel costs, your highest variable expense.

Benefits of upgrading your flight deck printer include:

- Lower fuel costs
- Improved dispatch reliability
- Reduced maintenance costs

Our program will additionally provide:

- Drop-in replacement for the existing printer
- Disposal of the old unit
- Trade-in credit towards a new flight deck printer
- Required installation paperwork (Supplemental Type Certification, Service Letter or Service Bulletin)

Upgrade programs are available worldwide, for both half-width and full-width airborne printers for B737NG, A320CEO and most popular commercial aircraft.

Contact AstroNova Aerospace, your total solution provider, to discuss how we can reduce your operating costs.

ToughWriter® 5 Full-Width Flight Deck Printer

With its robust design and high MTBF (Mean Time Between Failures), the ToughWriter 5 is designed to meet the high dispatch reliability required by aircraft operators. Its advanced dependability and low weight reduce operating costs, while its innovations, such as Ethernet and AirPrint certification, allow for direct or wireless connection to electronic flight bags and tablet devices.

- World's lightest ARINC 744A flight deck printer
- Delivers up to 50% higher reliability (MTBF) compared to other existing full-width printers
- Provides savings of thousands of dollars in fuel costs per year as a result of reduced printer weight*
- Weighs 8.96 lbs (4.06 Kg) with a full roll of paper

TW5 weighs only 7.7 lbs (3.49 Kg)

Printers that can be upgraded:

Miltope TP4840, Thales C12349

*Actual fuel savings will vary depending on aircraft type, length of flight, etc. Contact AstroNova for an estimated fuel savings based on your fleet profile.

ToughWriter 5 Technical Specifications

CHARACTERISTIC	SPECIFICATION
PRINTING	
Print Method	Direct thermal
Print Resolution	300 x 300 dpi (standard mode) 300 x 600 dpi (high quality mode)
Page Descriptor Language	PostScript® Level 3
Fonts	35 PostScript® fonts standard
PRINT SPEED	
Text	160 lines/minute
Graphics	18 seconds per page typical, 26 seconds per page maximum.
PHYSICAL	
Weight (with paper)	7.7 lbs. (3.49 Kg) without paper 8.96 lbs. (4.06 Kg) with one roll of paper
Dimensions	9.75" W x 5.7" H x 7.89" D
ELECTRICAL	
Input Voltage	28 VDC or 115VAC, 360 to 800Hz
Idle Power	15 Watts
Maximum Power	110 Watts (70 Watts typical)
ENVIRONMENTAL/MECHANICAL	
Temperature (storage)	-55°C to +85°C
Temperature (operating)	-15°C to +55°C fully operational (Printing) -40°C to +70°C partially operational (Not printing)
Humidity	DO-160F, Section 6, Category A
Shock and Crash Safety	DO-160F, Section 7, Category B
Operational Vibration	DO-160E, Section 8, Category SB
Explosion Proofness	DO-160E, Section 9, Category E ENV II
Fluid Susceptibility	DO-160E, Section 11, Category F (spray test)
Fungus Resistance	DO-160E, Section 13, Category F
Magnetic Effect	DO-160E, Section 15, Category A
Power Supply Audio Frequency Conducted Susceptibility	DO-160E, Section 18, Category Z
Induced Signal Susceptibility	DO-160E, Section 19, Category ZC
Radio Frequency Susceptibility (Radiated and Conducted)	DO-160E, Section 20, Category RR
RF Conducted Emissions (150kHz – 6GHz)	DO-160E, Section 21, Category M
ESD	DO-160E, Section 25, Category A

CHARACTERISTIC	SPECIFICATION
LIGHTING	
Dimming Control	5 PWM (pulse width modulation), 5 VAC (variable), 5 VDC (variable)
FRONT PANEL SWITCHES	
Front Panel Indicators/Controls	Power/Fault Test/Abort Slew/Paper
RELIABILITY	
MTBF	>15,000 hours
MTTR	Under 30 minutes
INTERFACE OPTIONS	
ARINC 429	Up to 12 Receive, 1 Transmit
Ethernet	Up to 4 10/100BaseT ports available 10Base2 (optional) TCP/IP Built-in-test reporting (BIT) via SNMP V1
WiFi	Optional IEEE802.11b/g/n compliant port
CONNECTORS	
The printer can be configured with connector choices to meet requirements. Consult factory for more information. Following are common connector configurations:	
MIL-DTL-38999 Type:	
Power Connector	TVS07RF-13-4P (Amphenol P/N) D38999/24FC4P (MIL SPEC P/N)
ARINC 429/Discretes	TVS07RF-15-35P (Amphenol P/N) D38999/24FD35P (MIL SPEC P/N)
Ethernet	TVS07RF-13-35P (Amphenol P/N) D38999/24FC35P (MIL SPEC P/N)
Single Data and Power Connector:	PT07SE24-61P-023 (61P) PT07SE24-61PW-023 (61P-W rotation)

PAPER	
Paper Roll	Supports both A4 and letter sizes (perforated and non-perforated rolls available)
Roll Length	150 feet

ToughWriter® 640 Half-Width Flight Deck Printer

The ToughWriter 640 is the latest in half-width cockpit printing technologies from the industry leader, AstroNova. Incredibly compact and half the weight of existing narrow format printers, the ToughWriter 640 is the world's smallest ARINC 740 cockpit printer.

With graphical printing and minimal power consumption, the ToughWriter 640 offers the lowest size, weight, and power usage in the industry.

- World's smallest ARINC 740 cockpit printer
- High reliability with an MTBF (Mean Time Between Failures) of 15,000 hours
- Meets or exceeds ARINC 740 Requirements
- Offers 12 ARINC 429 ports
- Weighs 6.45 lbs (2.93 Kg) with a full roll of paper

TW640 weighs only 5.75 lbs (2.61 Kg)

Printers that can be upgraded:

Honeywell PTA-45B, Miltope TP4429

*Actual fuel savings will vary depending on aircraft type, length of flight, etc. Contact AstroNova for an estimated fuel savings based on your fleet profile.

ToughWriter 640 Technical Specifications

CHARACTERISITC	SPECIFICATION
PRINTING	
Print Method	Direct thermal
Print Resolution	300 x 300 dots per inch
Page Description Language	PostScript® Level 3
Fonts	35 PostScript® fonts standard
PRINT SPEED	
Text	0.62 inches (16 mm) per second
Text & Graphics	Up to 0.43 inches (11 mm) per second
PHYSICAL	
Weight	5.75 lbs. (2.61 Kg) without paper 6.45 lbs. (2.93 Kg) with one roll of paper
Dimensions	5.75" W x 6.00" H x 6.50" D
ELECTRICAL	
Input Voltage	115VAC 360-800Hz Variable frequency
Idle Power	20 Watts
Maximum Power	55 Watts (meets or surpasses ARINC 740-1 specification)
ENVIRONMENTAL/MECHANICAL	
Temperature (storage)	-55°C to +85°C
Temperature (operating)	-15°C to +55°C fully operational (Printing) -40°C to +70°C partially operational (Not printing)
Humidity	DO-160F, Section 6, Category B
Shock and Crash Safety	DO-160F, Section 7, Category B
Operational Vibration	DO-160F, Section 8, Category SB
Explosion Proofness	DO-160F, Section 9, Category E ENV II
Fluid Susceptibility	DO-160F, Section 11, Category F (spray test)
Fungus Resistance	DO-160F, Section 13, Category F
Magnetic Effect	DO-160F, Section 15, Category Z
Power Supply Audio Frequency Conducted Susceptibility	DO-160F, Section 18, Category Z
Induced Signal Susceptibility	DO-160F, Section 19, Category ZC
Radio Frequency Susceptibility (Radiated and Conducted)	DO-160F, Section 20, Category RR
RF Emissions	DO-160F, Section 21, Category M
ESD	DO-160F, Section 25, Category A

CHARACTERISITC	SPECIFICATION
LIGHTING	
Dimming Control	5 PWM (pulse width modulation), 5 VAC (variable), 5 VDC (variable)
FRONT PANEL SWITCHES	
Front Panel Indicators/Controls	Power/Fault Test/Abort Slew/Paper
RELIABILITY	
MTBF	>15,000 hours
MTTR	Under 30 minutes
INTERFACE OPTIONS	
ARINC 429	12 Receive, 1 Transmit
Ethernet	Optional IEEE 802.3 100BaseTX, TCP/IP, via Quadrax connector
CONNECTORS	
MIL-DTL-26482 type:	
Power / Discrete Connector	MS3124F20-41P (Amphenol P/N)
Ethernet	Quadrax Connector MS3474

PAPER	
Paper Roll	Supports 40 column flight deck printing requirements 4.25 inches (108 mm) wide
Roll Length	140 feet

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Why Choose AstroNova Aerospace?

Customer Commitment – Seeking to fully understand the changing needs of our customers, we aim to exceed our customers' expectations by providing 24/7 customer service and delivering our high-quality products and services on time, every time.

Innovation – AstroNova (formerly Astro-Med) has been designing innovative products for aerospace since 1969. With more than four decades of experience, AstroNova is a world leader in the aviation industry.

Ease-of-Use – Our innovation, combined with highly responsive technical support, make it easy for airframe and avionics manufacturers to integrate and provide these systems to end users.

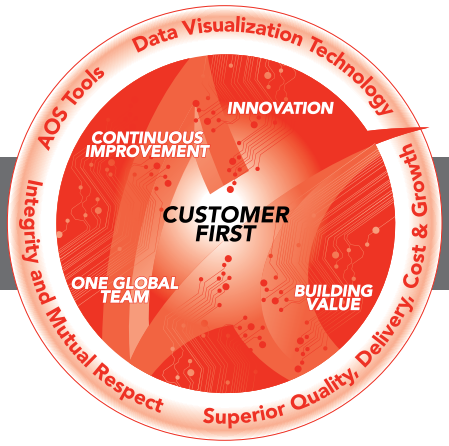
Reliability – Designed to withstand high MTBF (Mean Time Between Failures), our cockpit printers are known for their reliability and rugged design.

Knowledge Leader – Reaching far and wide into aviation, operators rely on us for safe and reliable flight operations. Our airborne printers and networking hardware are used in the most demanding military and commercial environments, including airborne, shipboard, and ground vehicle applications.

Certified – We are committed to quality and have charged ourselves to maintain compliance with industry standards and regulatory requirements as a part of our process for continuous improvement.

- ISO 9001:2015 certified
- AS9100:D certified
- FAR145/EASA145 certified repair station

The AstroNova



Operating System

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