Next Generation

AMS Trex™ Device Communicator

with embedded Bluetooth® connectivity

- **Power the Loop:** streamline maintenance productivity; eliminate the need for specialized tools (i.e. power supply, loop resistor, ammeter).
- **Advanced Diagnostics:** quickly resolve device configuration issues; diagnose 4-20mA loops; configure and test control valves inline.
- **Performance, Speed and Design:** Noticeably faster response times, higher volume load of calculations, and a drastically improved, intuitive user experience.
- **NIST Traceability:** The new and improved Device Configuration Plus Module has been redesigned with unmatched mA current accuracy and calibrated according to traceable, accredited standards as per the National Institute of Standards and Technology (NIST).
- **Bluetooth® Connectivity:** The next-gen AMS Trex has been re-engineered with embedded Bluetooth technology, improving maintenance productivity and safety with seamless integration with Bluetooth devices.
- **Rugged and Intrinsically Safe Design:** Built to withstand harsh industrial environments; protected against moisture, extreme temperatures, and physical shocks, meeting global Intrinsic Safety standards.
- **Field Device Integrity:** Ensure online and offline device configurations are captured and sync'd with AMS Device Manager software.

AMS™

EMERSON™

Introduction

The AMS Trex Device Communicator expands the long line of Emerson handheld devices while adding new capabilities that adapt it to consumer expectations for mobile device functionality.

Technicians armed with a Trex communicator won't waste time bringing devices back to the shop for analysis or reconfiguration. AMS Trex is delivered with a complete, pre-installed DD library for over 2,500 HART®, FOUNDATION Fieldbus™, and Bluetooth® devices so users can easily diagnose device problems in the field. Simple issues can be addressed on the spot, avoiding unnecessary, and potentially destructive, invasive physical investigation of the problem.

Technicians need powerful and portable diagnostic tools so they can identify and troubleshoot device issues to minimize process upsets. With a Trex communicator in hand, you can properly diagnose device issues in the field. With the right handheld, maintenance teams will experience significant savings in work hours and peace of mind knowing that problems will be fixed quickly and properly the first time.

Once changes are made in the field, AMS Trex will automatically synchronize the information with the AMS Device Manager database via Wi-Fi or USB connection.

Rugged and Reliable

For a communicator to be useful in the field, it must be built to last and ready for anything. The Trex communicator is designed to withstand the harsh conditions in and around manufacturing facilities. The rugged device is easy to hold, yet designed to take the bumps and drops that come from normal use in the plant. In addition, the Trex communicator is protected against moisture and extreme temperatures, allowing you to work regardless of environmental conditions. The sturdy exterior is designed in accordance with Intrinsic Safety standards to limit the buildup of static electrical energy. Unlike consumer-grade mobile devices, the Trex communicator will withstand the abuse of a harsh field environment.

Designed based on user feedback and with field use in mind, the carrying case features an access window that allows you to use the communicator and contains pockets large enough to carry the charger, extra lead sets, or other tools you may need in the field.

The rugged form factor is built for an industrial environment.

Adjustable Display

The Trex communicator features a 5.7" resistive touchscreen display for easy use with bulky work gloves. The adjustable backlit screen can be easily changed to save power or adapt to dark environments or bright sunlight, ensuring a crisp display that can always be read - no matter the external conditions.

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An App for That

The Trex communicator includes Upgrade Studio, a PC application to help keep the Trex unit up-to-date with new software and apps.

With Upgrade Studio, add critical diagnostic tools to your toolkit and push them out to any number of Trex communicators. With multiple apps available and many more in development, Upgrade Studio will make the Trex communicator your go-anywhere, do-anything device:

Field Communicator – The Field Communicator app delivers a wide range of options for configuring and troubleshooting HART and FOUNDATION Fieldbus devices.

AMS Device Configurator – securely connect and configure Bluetooth® devices with the same user experience as the Trex Field Communicator App.

Loop Diagnostics – With the Loop Diagnostic app, you can power the device in the field and also perform loop checks and diagnose 4-20mA loops. The app helps with loop characteristic validation and lets you isolate and troubleshoot wiring issues.

Fieldbus Diagnostics – The Fieldbus Diagnostics app gives you the necessary toolset for troubleshooting and validating FOUNDATION Fieldbus segments.

***Wireless*HART Provisioning** – The WirelessHART Provisioning app allows you to provision wireless networks in less time, with less chance of error and in a more secure fashion. The app can configure hundreds of devices with a push of a button, improving accuracy and allowing you to provision an entire network up to 6x faster.

ValveLink Mobile – With ValveLink Mobile, you can analyze and review valve assembly condition and performance without affecting the process. Configuration and troubleshooting of digital valve controllers has never been more efficient.

Calculator – The Calculator app for AMS Trex includes a simple calculator, conversion calculator for base conversions, loop convertor/Ohm's law calculator, and unit converter for engineering units.

Trex Help – The Trex Help app offers a searchable help guide, putting key information on operation and troubleshooting at your fingertips.

PDF Viewer – Transfer PDF files to AMS Trex to easily access manuals, work processes, notes, and any other PDFs in the field.

Designed for Use

Designed for comfortable, one-handed, all-day operation in the field, the Trex communicator is packaged in an evenly-balanced form factor with a rugged hand strap so you can easily hold it, even when working in tight spaces. It comes standard with 32 GB of application memory, providing plenty of space to customize it with the apps of your choice. With built-in USB and Wi-Fi connectivity, you can move data to and from the communicator using the connectivity option that is most convenient. With numerous communication options, your communicator has never been more connected.

The communicator's robust lithium-ion power module will keep it running for hours, well over a full shift, even when it is being used to power other devices in the field.

Manage loop health easily with the Trex Device Communication Plus Module.

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Intrinsically Safe

The Trex communicator is built to go wherever you may need to be. Unlike consumer mobile devices that cannot be taken into hazardous areas without shutting down the process or pulling a hot work permit, the Trex unit meets global Intrinsic Safety requirements:

- ATEX
- CSA (US/Canada)
- IECEx
- FISCO

Gain freedom and flexibility with a communicator that can go anywhere you need to, when you need to, without worrying if the device will put you at risk.

Power the Loop

AMS Trex units equipped with the Device Communication Plus Module includes built-in functionality to power a device. Simply connect the communicator to an instrument to power it. Technicians no longer waste time rounding up a power supply or confirming adequate loop resistance before testing, speeding configuration on the bench.

Power the loop functionality allows device configuration in the field on new projects—even before power and I/O infrastructure are in place. Transmitter configuration no longer needs to be the last step of new projects. Configure transmitters before the host system, wiring, piping, and other project elements arrive, keeping transmitter configuration from being a critical path item, allowing more flexibility in new project scheduling and leading to faster startups.

Powering devices from the communicator allows you to isolate the device from the rest of the system, helping you identify installation problems like power supply, wiring, I/O card, and configuration issues.

The useful carrying case protects your Trex unit in the field and provides storage options for accessory items.

The magnetic hanger accessory allows you to attach the Trex unit to a pipe, freeing up your hands for other work.

Auto Sync

The Auto Sync technology in AMS Trex helps maintain data integrity in your AMS Device Manager database without any technician intervention. Every change made in the field is automatically recorded and time-stamped.

Changes are updated in real-time if Wi-Fi connection is enabled and a technician is in a hot spot. Or changes are cached on the Trex communicator and applied to the database when the communicator detects a Wi-Fi signal or USB cable connection.

The Trex communicator logs and timestamps changes as they occur, delivering an accurate audit trail of device changes to the AMS Device Manager database.

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Powerful Diagnostics

Identify Valve Problems

Valve problems are particularly costly to diagnose and repair. Field technicians are often required to pull a valve to investigate a problem, and removing valves for inspection usually means shutting down the process. Further complicating troubleshooting, technicians often need to disassemble the valve to determine the root cause of the problem. This frequently leads to further damage to the valve, ending in a more time consuming and expensive repair.

Using the ValveLink Mobile app on the Trex unit, you can perform valve diagnostics in the field, including valve signature, dynamic error band, PD one button sweep, and step response, without having to pull the valve or perform invasive troubleshooting steps. ValveLink Mobile works with HART and FOUNDATION Fieldbus Fisher® FIELDVUE™ digital valve controllers and provides an intuitive user interface that is easy to understand and use. With the AMS Trex Device Communicator Plus communication module, you can even power the digital valve controller directly from ValveLink Mobile. The large touchscreen on the Trex communicator makes it easier than ever to see all valve diagnostic details.

Diagnose Communication Problems

The Trex communicator can configure and troubleshoot FOUNDATION Fieldbus devices and segments in your plant. Use the communicator to create a quality segment by diagnosing the network DC voltage and average noise. Detect power supply problems using the communicator's power the loop functionality or by monitoring low frequency noise on a segment.

You can also verify whether the DC voltage is correct in HART loops.

Support

With an active AMS Trex Support contract, your AMS Trex Device Communicator has comprehensive coverage and can be used to its maximum potential. With a range of support offerings including benefits such as Technical Support, software updates, automated DD updates, and Accidental Damage Coverage, it's easy to protect your investment in AMS Trex. Users can also leverage the AMS Trex Online Portal to download software and manage AMS Trex units across their enterprise.

AMS Trex support is delivered by Emerson Guardian Support. This ensures technical support availability on a 24x7x365 basis provided by Emerson's Global Service Center (GSC). Highly skilled engineers and application specialists will provide you with hands-on, consistent expert technical consultation with remote system diagnosis capability. All incidents will be handled by GSC or coordinated with Emerson's Cloud Operations support teams as needed.

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Specifications

Processor, Memory, and Operating System	
Microprocessor	1.2 GHz quad-core Cortex-A53 / NXP i.MX 8M Mini
Memory Internal Flash	64 GB NAND flash
Operating System	Custom Android 14 platform
RAM	4 GB LPDDR4 SDRAM
Physical	
Weight	Approximately 2.9 lbs (1330 grams)
Display	5.7 inch (14.5 cm) color VGA resistive touchscreen
	640 x 480 pixel
Keypad	X button – similar to a Back key
	4 arrow buttons to navigate menus
	Checkmark- similar to an Enter key
AC Adapter	
Battery	Rechargeable Lithium- Ion Power Module
Operating Time	8+ hours of typical use
Charge Time	3 to 4 hours
LEDs	6 LEDs. Five LEDs for indicating the progress of charging. One LED to indicate the AC adapter is charging the power module.
Battery Charger Options	Input voltage 100-240 VAC, 50-60 Hz
	Cables included with US, EU, UK, and AU plugs
Connections	
USB	Micro USB Connector. USB 2.0 Remove the USB cable from the Trex unit before connecting to a device.
Battery Charger	Barrel Round Plug Tip
Wireless	
Wireless Approvals	FCC, CE, RED and IC Approvals
Wi-Fi	802.11 b/g/n 2.4 GHz
	Range up to 33 m
Bluetooth® Connectivity	Bluetooth® Low Energy (BLE)
	Range up to 15m

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Device Communication Modules	
Device Communication Module (C)	
HART Terminal	Enables HART device communication
	Connectors: Two Banana Jack Plugs
Fieldbus (FF) Terminal	Enables FOUNDATION Fieldbus device communication
	Connectors: Two Banana Jack Plugs
Device Communication Plus Module*	
HART Terminal	Enables HART device communication, and supports Loop Diagnostics functionality.
	Connectors: Two Banana Jack Plugs
	Optional Internal Resistor: 250 or 500 Ohm
	Range: 3-22.5mA (current control); 0-24mA (current measurement)
	Resolution: 1 µA
	Accuracy: +/-(0.01% + 2µA) @ 23°C +/-5°C
HART + Pwr Terminal	Enables HART communication with the Trex unit, and provides power to one HART device in a bench setup, and supports Loop Diagnostics functionality.
	Connectors: Two Banana Jack Plugs
	Includes HART power supply, resistors (167 Ohm), current control, and ammeter.
	Range: 3-22.5mA (current control); 0-24mA (current measurement)
	Resolution: 1 µA
	Accuracy: +/-(0.01% + 2µA) @ 23°C +/-5°C
mA Terminal (External Ammeter)	Measures current on a 4-20 mA current loop.
	Connectors: Two Banana Jack Plugs
	Range: 0-24mA
	Resolution: 1 µA
	Accuracy: +/-(0.01% + 2µA) @ 23°C +/-5°C
Fieldbus (FF) Terminal	Enables FOUNDATION Fieldbus device communication
	Connectors: Two Banana Jack Plugs
FF + FF Pwr Terminal	Provides power to one FOUNDATION Fieldbus device in a bench setup.
	Connector: One Banana Jack Plug (Power conditioner and two terminators included)
	Current Range: 0- 38 mA

*AMS Trex units with the Device Communication Plus Module (L) are factory-calibrated according to traceable, accredited NIST standards.

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Environmental	
Usage	-20°C to +55°C (-4°F to 131°F).
	For IS approval: -20°C to +50°C (-4°F to 122°F)
Charge	+10°C to +45°C (50°F to 113°F)
Storage With Power Module	-20°C to +50°C (-4°F to 122°F) (less than 1 month)
Storage Without Power Module	-20°C to +60°C (-4 °F to 140°F)
Enclosure Rating	IP54
Shock	The unit shall survive a 1-meter, all sides and corners drop test onto concrete.
Upgrade Studio Requirements	
	Windows 10 Professional or higher
	1 GB of free disk space, USB port, and Internet access to activate and update Trex
	A Windows user account with Administrator privileges

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Ordering Information

Model	Product Description
TREX2	Base Trex 2 Platform[1]
Code	**Communication Module[2]**
C	Device Communication Module (HART + FOUNDATION Fieldbus)
L	Device Communication Plus Module (HART, FF, ammeter, Power the Loop & Loop Diagnostics App)[3]
Code	**Applications**
H	HART Application
F	HART + FOUNDATION Fieldbus Applications[4]
Code	**Power Module Type**
P	Rechargeable Li-Ion Power Module
Code	**Product Certifications**
KL	ATEX, CSA (US/Canada) and IECEx Intrinsically Safe (includes FISCO as applicable)
NA	No Approval
Code	**Radio Options**
W	Wireless[5]
9	None
Code	**Support[6]**
S1	Product Support (1 Year)[7]
S3	Product Support (3 Year)[7]
P1	Product Support + Repair (1 Year)[8]
P3	Product Support + Repair (3 Years)[8]
Code	**Option Codes (multi-select)[9]**
S	Carrying Case (Soft)
R	Radar Master App[10]
W	*Wireless*HART Provisioning App[10]
Basic HART Model Number: TREX2 C H P KL W S1 S	
Typical HART Model Number: TREX2 L H P KL W P1 S	
Typical HART/Fieldbus Model Number: TREX2 L F P KL W P3 S	

(1) Includes AC Adapter, USB Cable, Lead Set with connectors, Hand Strap, Approvals and Certifications guide, and Get Started flyer. ValveLink Mobile, Calculator and PDF Viewer applications are available at no charge once the AMS Trex unit is activated.

(2) FOUNDATION Fieldbus requires HART + FOUNDATION Fieldbus Applications license (F).

(3) Includes additional Lead Set with connectors and factory calibration of electrical measurements as per NIST standards

(4) Includes FOUNDATION Fieldbus Power Plug when ordered with Device Communicator Plus module (L).

(5) Includes Wi-Fi and Bluetooth® radios. Available only in countries where spectrum approval has been obtained. See **www.emerson.com/trex.com** for additional details.

(6) Includes 12 months warranty against manufacturing defects unless otherwise stated.

(7) Includes technical support and software updates.

(8) Includes technical support, Trex updates and coverage against accidental damage.

(9) Multi-select option codes, leave blank if any combination of options are not desired.

(10) Only available on select AMS Trex models.

Shipping Weight (varies with options)
6-7lbs/3.1kg (based on TREX2LHPKLWP3)

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Spare Parts Information

Spare Parts[1]	Part Number
Rechargeable Li-Ion Power Module	TREX-0002-1211
AC Adapter (includes US, EU, UK, AU outlet plugs)	TREX-0003-0012
DC Adapter (12v vehicle accessory outlet)	TREX-0003-0022
AC Outlet Plugs (square replacement for TREX-0003-0011, set includes US, EU, UK, AU)	TREX-0003-0002
AC Outlet Plugs (round replacement for TREX-0003-00012, set includes US, EU, UK, AU)	TREX-0003-0004
FOUNDATION Fieldbus Power Plug	TREX-FFPA-0001
Lead Set with connectors	TREX-0004-0001
Hand Strap (replacement set of 2)	TREX-0005-0002
Carrying Case (includes hand & shoulder straps)	TREX-0005-0011
Shoulder Strap (replacement for use with carrying case)	TREX-0005-0009
Magnetic Hanger	TREX-0005-0004
USB cable (USB to micro USB)	TREX-0004-0002
Ruggedized 250 Ohm Load Resistor[2]	TREX-0096-0001
Trex 2 Device Communication Module[3]	TREX2-PMDC-1211
Trex 2 Device Communication Plus Module[3]	TREX2-PMDP-1211
Stand (replacement integral to communication module)[4]	TREX-0012-0011
Approvals and Certifications (Multilingual)	TREX2-0045-0001
Applications[6]	**Part Number**
FOUNDATION Fieldbus license bundle[6]	TREX2-ABFF-PE01
WirelessHART Provisioning App	TREX2-APWP-PE01
Radar Master App	TREX2-APRM-PE01
Support Renewal[7]	**Part Number**
Product Support[8]	TREX-SUST-1201
Product Support + Repair[9]	TREX-SUPR-1201

(1) Includes 1 year warranty against manufacturing defects unless otherwise stated.
(2) Not required with AMS Trex units equipped with a Device Communicator Plus Module (load resistor built-in).
(3) Ships with integral stand installed.
(4) Contains integral stand and retaining plate in order to attach the stand to the communication module.
(5) Applications and licenses are delivered through the Upgrade Studio application; specific to each AMS Trex serial number.
(6) Includes FOUNDATION Fieldbus and Fieldbus Diagnostics licenses.
(7) Support Renewals may be purchased in 1 - 5 year duration (Select Qty of 1, 2, 3, 4 or 5).
(8) Includes technical support and software updates.
(9) Includes Standard Support and coverage against accidental damage.

Pricing

The listed prices are effective with the date of issue and are subject to change without notice. All prices may be subject to F.O.B. charges from Cluj, ROM or Knoxville, USA. The prices are exclusive of sales and use tax.

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