

AMS Trex™ Device Communicator

- Commission and validate devices faster
- Automatically synchronize field changes with AMS Device Manager
- Quickly fix issues in the field with advanced device diagnostics
- Configure and test valves inline
- Improve efficiency with a modern, intuitive user interface
- Intrinsically safe; usable anywhere you need to go



With the Trex communicator, you can do more in the field than ever before.

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 2,000 HART and FOUNDATION Fieldbus 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.

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.

Loop Diagnostics – With the Loop Diagnostic app, you can power the loop in the field and also perform loop troubleshooting and checkouts. 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.

WirelessHART 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.

Radar Master – The Radar Master app enables you to ensure the measurement and configuration accuracy of your Rosemount radar level transmitters by bringing the power of Radar Master software to the field. Use dynamic graphics to verify configurations while protecting the safety of your personnel and assets.

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.

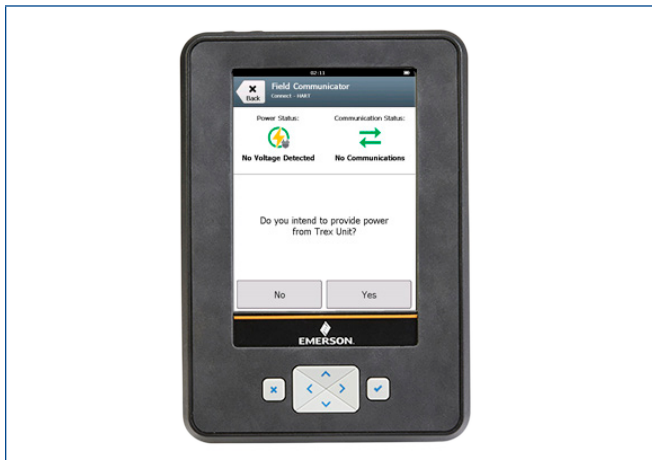
The communicator's robust lithium-ion power module will keep it running for hours, well over a full shift, even when it is being used to power other devices in the field.

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.



Manage loop health easily with the Trex communicator.

Power the Loop

The Trex communicator 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.

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.

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.



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

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.



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

AMS Trex 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.

Specifications

Processor, Memory, and Operating System	
Microprocessor	800 MHz ARM Cortex A8 / NXP
Memory Internal Flash	2 GB NAND and 32 GB extended flash
Operating System	Windows Embedded Compact 2013
RAM	512 MB DDR3 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
	Certified for use in over 100 countries
Wi-Fi	802.11 b/g/n
	Range up to 33 m
NFC	Active NFC
	Range up to 20 mm

Communication Modules	
Device Communicator Communication Module	
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 Communicator Plus Communication Module	
HART terminal	Enables HART device communication
	Connectors: Two Banana Jack Plugs
	Optional Internal Resistor: 250 or 500 Ohm
HART + pwr terminal	Enables HART communication with the Trex unit, and provides power to one HART device in a bench setup.
	Connectors: Two Banana Jack Plugs
	Includes HART power supply, resistors (167 Ohm), current control, and ammeter.
	Current Range: 3 -22.5 mA
mA terminal (external ammeter)	Measures current on a 4-20 mA current loop.
	Connectors: Two Banana Jack Plugs
	Current Range: Up to 22.5 mA
	Resolution: 0.1 mA
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 included)
	Current Range: 0- 38 mA
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	
Installation	Windows 7 Professional Service Pack (SP1) 1 (32 and 64-bit)
	Windows 10 Professional
	512 MB of free disk space
	A Windows user account with Administrator privileges

Ordering Information

Model	Product Description
TREX	Base Trex Platform ⁽¹⁾
Code	Communication Module
C	Device Communicator communication module
L	Device Communicator Plus communication module ⁽²⁾
Code	Applications
H	HART Application
F	HART + FOUNDATION Fieldbus Applications ⁽³⁾
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 ⁽⁴⁾
9	None
Code	Support ⁽⁵⁾
S1	Standard Support (1 Year) ⁽⁶⁾
S3	Standard Support (3 Year) ⁽⁶⁾
P1	Premium Support (1 Year) ⁽⁷⁾
P3	Premium Support (3 Year) ⁽⁷⁾
Code	Option Codes (multi-select)
S	Carrying Case ⁽⁸⁾
R	Radar Master App ⁽⁹⁾
W	WirelessHART Provisioning App ⁽⁹⁾
Typical HART Model Number: TREX L H P KL W S3 S	
Typical HART/Fieldbus Model Number: TREX L F P KL W S3 S	
Typical HART/Fieldbus with Radar Master and WirelessHART Provisioning Model Number: TREX L F P KL W S3 SRW	

(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) Includes additional Lead Set with connectors.

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

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

(5) Includes 18 months warranty against manufacturing defects unless otherwise stated.

(6) Includes technical support and software updates.

(7) Includes Standard Support and coverage against accidental damage.

(8) Leave blank for no carrying case.

(9) Only available on select AMS Trex models.

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
Device Communicator communication module ⁽³⁾	TREX-PMDC-1211
Device Communicator Plus communication module ⁽³⁾	TREX-PMDP-1211
Stand (replacement integral to communication module) ⁽⁴⁾	TREX-0012-0011
Approvals and Certifications (Multilingual)	TREX-0045-0001
Applications ⁽⁶⁾	Part Number
FOUNDATION Fieldbus license bundle - 90 Day Demo ⁽⁶⁾	TREX-ABFF-0301
FOUNDATION Fieldbus license bundle ⁽⁶⁾	TREX-ABFF-PE01
WirelessHART Provisioning App	TREX-APWP-PE01
Radar Master App	TREX-APRM-PE01
Support Renewal ⁽⁷⁾	Part Number
Standard Support ⁽⁸⁾	TREX-SUST-1201
Premium Support ⁽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 - 3-year duration (Select Qty of 1, 2 or 3).

(8) Includes technical support and software updates.

(9) Includes Standard Support and coverage against accidental damage.

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Radar Master App

- Ensure measurement and configuration accuracy of Rosemount radar level transmitters
- Improve efficiency and safety with a tool designed for field use
- Easily verify configuration with dynamic graphics



Configure radar devices with a tool built for field use – making the task safer and more efficient.

Introduction

The Radar Master app allows you to bring the enhanced echo curve functionality of Radar Master software to your field communicator. Designed for use on the rugged, intrinsically-safe AMS Trex, the Radar Master app improves efficiency for field technicians, protects the safety of your personnel and assets, and enables accurate configurations at the tank.

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 WiFi connection is enabled and a technician is in a hot spot. Or changes are cached on AMS Trex and applied to the database when the communicator detects a WiFi signal or USB cable connection.

Easier Configuration

Using the Radar Master app, you can create the geometric profile directly at the tank. Dynamic graphics help ensure that you are configuring the tank with the correct settings.

Using the power the loop functionality in AMS Trex, you can power your radar device in the field (depending on model option power requirements¹) – even before wires are run. This enables you to complete installation and configuration early, even when the tank is empty.

¹ - excludes Rosemount 5400 and 5300 explosion-proof and flameproof devices.



More easily tune radar measurements with enhanced echo curves.



View geometric profiles of your tank to ensure configuration accuracy.

Ensure Reliable Measurement

With enhanced echo curves in the Radar Master app, you can more easily tune your measurement settings. Tune out disturbances in the tank to prevent false echoes and ensure reliable measurements.

Enhanced echo curves provide insight into unexpected and intermittent measurement behaviors, enabling better understanding of process challenges.

Improve Troubleshooting

Easily view enhanced echo curves and properly adjust thresholds to ensure a reliable and robust level measurement.

For the Rosemount 5408 HART device, access trended tank level and alert information from historian functionality. If needed, export and playback echo curves on the PC version of the Radar Master Diagnostic Tool for a more in-depth analysis.

Improve Safety with a Tool Built for the Field

The AMS Trex Device Communicator delivers a modern user experience in a rugged, intrinsically safe package, providing the experience of consumer devices in a tool built to withstand harsh industrial environments.

This rugged device is easy to hold, yet designed to take the bumps and drops that come from normal use in the plant. The Trex unit is protected against moisture and extreme temperatures, so you can work regardless of environmental conditions. The outer shell meets Intrinsic Safety standards, limiting the buildup of static electrical energy.

The compact design, carrying case, and magnetic hanger make it the ideal tool for working in the small space and often hazardous environment of a tank. One-handed operation, NFC-enabled user security, and intrinsic safety ratings enable technicians to work safely and effectively in these difficult areas.

Compatibility Chart

Supported Device Types	Enhanced Dashboard		Enhanced Echo Tuning	
	HART	FF	HART	FF
Rosemount 5408	✓		✓	
Rosemount 5300	✓	✓*	✓	
Rosemount 3308	✓	N/A	✓	
Rosemount 5400	✓	✓		
Rosemount 3300	✓	N/A		
Rosemount 5600	✓			

* Dev Rev 3 & 4

N/A – Device doesn't exist

Ordering Information

Description	Part Number
Radar Master App	TREX-APRM-PE01

Notes: 1) You must include the corresponding AMS Trex unit serial number(s) at time of order.

2) Once purchased, you can download the app from Upgrade Studio.

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