
Portable 3TX Transmitter Assemblies for Temporary Installations, Troubleshooting & Grab Sample Analysis

The portable 3TX assembly packages offer the ability to use the industrial 3TX transmitters for applications where power is unstable or where no permanent power source exists. Some selected typical uses include:

- Temporary installation points to test the most optimal locations for measurements without power source.
- Spot analysis with industrial sensors to check inline measurements for ground loops & electrical issues.
- Validate installed field industrial sensors to determine when cleaning and/or replacement is required.
- Test for ground loops with battery powered isolated 24VDC power supply from 3TX-PS/BAT module.
- **Industrial sensors can be tested at installation points without plant power or need for SCADA or PLC.**

TWO VERSIONS OF PORTABLE 3TX ASSEMBLIES ARE AVAILABLE:

The smaller assembly is the “LUNCHBOX” while the larger assembly is the “CARRY-ON”

- Each portable style has tradeoffs in capacity, size, weight & cost. Contact factory to find the best choice for your use.
- All portable assemblies employ the 3TX-PS/BAT dual isolated and regulated 24VDC power supply to energize the 3TX Transmitters. The 3TX-PS/BAT uses 5V LiPo batteries as input power source for fully portable operation.
 - 3TX-PS/BAT can also be powered by connecting black & red leads from any USB device recharging cable
 - **REVIEW SEPARATE 3TX-PS/BAT DOCUMENTATION BEFORE PURCHASE/INSTALLATION!**

STANDARD FEATURES FOR “LUNCHBOX” & “CARRY-ON” PORTABLES:

- Install 3TX transmitters with 35mm DIN-RAIL mounting. Most common input measurement modules:
 - Smart digital HiQ pH Sensor or ORP sensor: 3TX-HiQ-pH
 - Analog pH/ORP sensors without preamp: 3TX-pH with preamplifier: 3TX-pH-X
 - Analog ISE sensors without preamplifier: 3TX-ISE with preamplifier: 3TX-ISE-X
 - Analog Galvanic Dissolved Oxygen Sensors: 3TX-DO with preamplifier: 3TX-DO-X
 - Analog Contacting Conductivity Sensors: 3TX-CON
- 3TX analog measurement modules interface most industrial pH, ORP, Ion Selective (ISE), Contacting Conductivity & Galvanic Dissolved Oxygen (DO) sensors terminated with tinned leads
- Intelligent 3TX-HiQ transmitters for smart digital HiQ sensors can be interfaced with snap panel mount connectors for easy testing and pre-calibration of sensors in any location with or without a power source.
- **MODbus datalogging module (3TX-DAT) can record values from 3TX measurement modules with MODBUS output option at any desired sampling rate on either a continuous and intermittent basis.**



SELECTED SPECIAL FEATURES AND OPTIONS:

- ✓ Near instant boot for quick spot use with long standby time (limited only by battery leakage current)
- ✓ Three-way switch on 3TX-PS/BAT serves as “On” / “Off” control and toggling between Battery “A” & “B”
- ✓ Convenient panel mount quick disconnect option available to interface smart digital HiQ sensor input(s)

SHARED SPECIFICATIONS FOR ALL 3TX PORTABLES

Temperature Rating: Usage and storage from -15 °C up to +50 °C

Portability Features: Four (4) each thick rubber feet on bottom of enclosure support most any industrial use
Sturdy and large rugged thick handle for easy & secure transport of portable assemblies

Permanent Installs: **Portable assemblies can be converted to permanent installs. Just remove rubber feet, 3TX-PS/BAT and batteries and replace them with wall/plate/pipe permanent field mounting kit & install 3TX-PS universal 100-240AC to 24VDC power supply module**

Access Control: Security via user-supplied padlock installed onto integral latch hook on enclosure

Approvals: NEMA 4X assembly when sealing glands & snap connectors are properly secured
Suitable for use in safe areas; not recommended for use in hazardous rated areas

“LUNCH-BOX” SPECS - 1 EACH 5V LiPo BATTERY POWERED OPERATION:

Base Enclosure: 3MF NEMA 4X ENCLOSURE ASSEMBLY (see drawing for details)

Dimensions: 170mm Width X 210mm Height X 115mm Depth (6.7” X 8.3” X 4.5” Inches)
Dimensions approximate & include cable glands, rubber feet and carrying handle protrusions

Max Modules: **1 each 3TX module can be used at a time** (hot-swappable 35mm DIN-RAIL mount)

Min Contents: 1 each 5V Lithium Polymer USB Rechargeable Battery (**NOT INCLUDED**)
1 ea LiPo Battery Holder & 1 ea 3TX-PS/BAT stepup converter 24VDC power supply

Battery Capacity: Typical 3350mAH or 6700mAH for LiPo battery that fits into installed DIN-RAIL holder

Usage Time: **~4.5 hours for 3350mAH capacity or ~9.0 hours for 6700mAH capacity LiPo battery**

Standby Time: Only limited by battery leakage current when 3TX-PS/BAT switch is in “Off” position

Analog Input: 1 each ½” MNPT sealing cable gland to secure cable from analog sensor

Digital Input: 1 each HiQ4F panel mount snap connector installed interfaces smart digital HiQ sensor

Input: 5VDC from USB charging adapter connected to unused input source on 3TX-PS/BAT

Output(s): 2 each ¼” MNPT sealing glands to secure cables for 4-20mA and/or RS-485 MODBUS
RTU outputs from 3TX transmitter and/or 24VDC power from 3TX-PS/BAT converter

Weight: 1.0 kgs (2.2 lbs) with min contents; 1.2 kgs (2.6 lbs) with max fully loaded contents

Pictures of "LUNCHBOX" Portable Assy with 3TX-HiQ-pH Digital Transmitter:



Side view with lid closed showing rugged carrying handle for portability



Protective caps installed for 2 each 1/4" MNPT glands & 1 each 1/2" MNPT gland with cover affixed for HiQ snap connector



Side latch view showing input ports on left (bottom side) & carrying handle to right (top side) and NEMA 4X sealing latch directly in front (right side)



Isometric view with sealing caps installed & lid latched closed for a field ready fully waterproof NEMA 4X rated assembly



Detail wiring view with for LiPo battery connected to 3TX-PS/BAT



Bottom detail view showing connected HiQ smart digital sensor



“CARRY-ON” SPECS – 2 EA 5V LiPO USB RECHARGEABLE BATTERY POWER:

Base Enclosure:	7MF NEMA 4X ENCLOSURE ASSEMBLY (see drawing for details)
Dimensions:	335mm Width X 250mm Height X 185mm Depth (13.2" X 9.8" X 7.3" Inches) <i>Dimensions approximate & include cable glands, rubber feet and carrying handle protrusions</i>
Max Modules:	4 each 3TX can be used at a time (hot-swappable 35mm DIN-RAIL mounting style) <i>5 each 3TX modules can be used when portable assembly converted to a permanent installation</i>
Min Contents:	2 ea LiPo 5V USB rechargeable batteries (<u>NOT INCLUDED</u> , Must Be Purchased Separately) Standard 3350mAH @ 5VDC or High Capacity 6700mAH @ 5VDC LiPo Type Batteries 2 ea modified 60A 35mm DIN-RAIL fuse-holders secure 2 ea LiPo rechargeable batteries 2 each 3TX-PS/BAT stepup converter provides 24VDC for up to 4 each 3TX transmitters “A” & “B” batteries used simultaneously if more than 2 each 3TX transmitters are used
Standard Capacity:	Effective capacity ~270mAH @ 24VDC for 1 each 3350mAH @ 5VDC LiPo battery
Usage Time Max:	~4.5 hours with only 1 each 3TX transmitter energized (~9.0 hrs if both batteries used)
Usage Time Min:	~2.2 hours with max 4 each 3TX transmitters (both batteries are used simultaneously)
High Capacity:	Effective capacity ~540mAH @ 24VDC for 1 each 6700mAH @ 5VDC LiPo battery
Usage Time Max:	~9.0 hours with only 1 each 3TX transmitter energized (~18 hrs if both batteries used)
Usage Time Min:	~4.5 hours with max 4 each 3TX transmitters (both batteries are used simultaneously)
Standby Time:	Only limited by battery leakage current when 3TX-PS/BAT switch is in “Off” position
Battery Charger:	2 each Q6F panel mount for use with USB Male “A” 2m cable with Q6M snap (2 each)
<u>Charge & Use Simultaneously:</u>	The USB rechargeable 5V type batteries inside “CARRY-ON” can be simultaneously charged with USB male “A” to Q6M snap connector (2 each, 7 feet) and used as power source for 3TX-PS/BAT boost converter to energize up to 4 each 3TX transmitters
<u>Operate from ANY USB Port:</u>	USB male “A” to tinned leads adapter (7 feet) for ground (black) & +5VDC (red) power source to 3TX-PS/BAT included to operate from any USB port or smartphone charger
Sensor Input(s):	4 each ½” or ¼” MNPT sealing cable glands to interface analog and/or digital sensors
Digital Upgrade:	4 each inputs changed to HiQ4F female panel snap (only for smart digital HiQ sensors)
Output(s):	2 ea ¼” MNPT cable glands for troubleshooting with isolated 24VDC from 3TX-PS/BAT 5 ea ¼” MNPT cable glands for sending isolated and scalable 4-20mA analog output(s) and/or RS-485 MODBUS RTU output(s) from up to 4 each 3TX transmitter modules
Weight:	2.0 kgs (4.5 lbs) with min contents; 2.7 kgs (6.0 lbs) with max fully loaded contents

“CARRY-ON” for Total & Free Fluoride, pH & Temp Measurement & Datalogging

- Submersible Digital High HF Resistant pH Sensor interfaced with 3TX-HiQ-pH Intelligent Digital pH Transmitter
- Submersible Acid Resistant Fluoride ISE Sensor with Q7M interfaced to 3TX-ISE Fluoride ISE Transmitter
- High capacity 6700mAH LiPo 5V USB rechargeable batteries interfaced with 3TX-PS/BAT 24VDC setup converters
- Total unbound fluoride computed by TOT using free fluoride from 3TX-ISE & pH from 3TX-HiQ-pH transmitters
- Measured & computed values stored on 3TX-DAT MODBUS datalogger & downloaded via RS-232 to USB cable

Details of “CARRY-ON” with 3TX-HiQ-pH & 3TX-ISE Measurement Modules with TOT module to compute total fluoride & 3TX-DAT Field MODBUS Datalogger



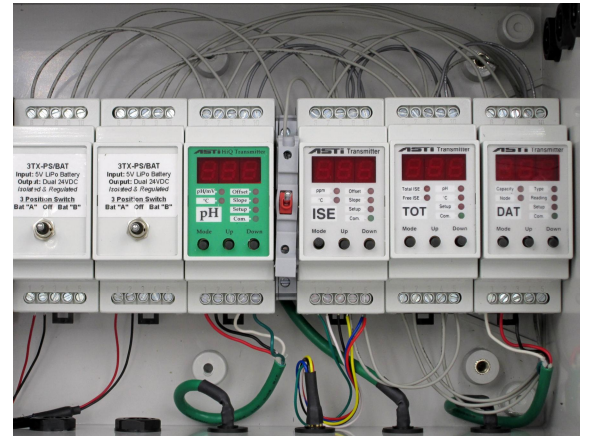
USB Male “A” cable, 7 feet long, Q6M snap connector plugs into “CARRY-ON” panel ports for simultaneously recharging LiPo batteries while running from line power.

NOTE: Customer to supply power adapter to which USB male “A” plug will be connected.



High Capacity 6700mAH rechargeable battery wired to 3TX-PS/BAT stepup converter for 24VDC dual isolated & regulated power energizes modules.

LiPo batteries can simultaneously be recharged & discharged as required.



Wiring of 3TX-PS/BAT 5V to 24VDC stepup converters used to energize the 3TX transmitters. Toggle switch on 3TX-PS/BAT selects between battery “A” or “B” input as well as serving as the On/Off control mechanism. The “B” input can be the red & black leads from a USB cable for situations when the batteries are recharged and/or extended use is desired & AC power is available.



Two (2) each ¼” cable glands & 2 each Q6FP snap panel connectors for USB recharging cables shown to left. Two (2) each ¼” glands for line-powered operation with USB cables & four (4) each HiQ4F snap panel connectors for sensors with HiQ4M male snap inputs to right.



The rugged carrying handle & 4 each rubber feet ensure “CARRY-ON” assembly is ready for heavy industrial use. Three (3) each ¼” MNPT glands for analog and/or MODBUS outputs from transmitters. Glands come with sealing caps when not in use (see picture on previous page).