



ImproX iTRT

Product Specification Catalogue

The **ImproX (iTRT) Intelligent Twin Reader Terminal** is the second generation of the highly successful ImproX TRT. Using the RS485 Bus Connection, The ImproX iTRT works within the ImproX range of Access Control Systems, as well as within OEM applications.

The ImproX iTRT is capable of working with a variety of ImproX Hardware. This includes the Multi-discipline reader Range, the Wiegand Reader Range, the Multi-mode Remote Range as well as various Third-party Barcode and Magstrip Readers. In applications that require extended range, you can connect the ImproX (IR) Infrared Receiver and the ImproX RF 4-Channel Receiver to the ImproX iTRT. Each ImproX iTRT is designed to be used with up to two Readers or Receivers.

Major memory improvements allow the ImproX iTRT to store up to 10 000 Tags and 10 000 Buffered Transactions per channel as well as providing the added benefit of off-line validation. This means the Terminal allows access to the Tags in its cache even when off-line from the Controller.

Other new features include a Software Utility which allows you to upgrade the Terminal while installed on site with zero down-time. The ImproX iTRT is available in two models to best suit the needs of your application.

Key Features

General

- Cost effective solution that fits seamlessly into legacy Systems.
- **Onboard intelligence** means the Terminal can run off-line from the Controller.
- Interfaces to the following ImproX Readers:
 - ImproX Multi-discipline Readers.
 - ImproX Wiegand Reader.
 - ImproX Multi-mode Readers.

ImproX (iTRT)

Intelligent Twin Reader Terminal

XRT910-0-0-GB-XX

IPS920-0-0-GB-XX

General (Continued)

- Offers full Wiegand Support.
- Interfaces to the ImproX IR, ImproX RF, and Third-party Wiegand Readers.
- Connection to up to two Readers or Third-party Devices per ImproX iTRT, allowing Relaxed or Full Anti-passback (APB) access.
- End of Line (EOL) Sensing on Door Open Sensor (DOS) Inputs.
- Operation from power inputs in the range 10 V to 30 V DC.
- An excellent user interface consisting of 14 LED "Diagnostic Indicators".
- An external RS485 Terminal Communications Bus Interface.
- Onboard memory for Off-line Redundancy supporting:
 - Up to 10 000 Tags.
 - Up to 10 000 buffered transactions per channel.
- Two independent single-pole, double-throw (SPDT) Relay Outputs that allow you to interface to door strikes, magnetic locks and other third party devices (for example alarm panels or lighting).
- Four Digital Inputs including two Door Open Sensor (DOS) and two Request to Exit (RTE) Inputs.
- A Software utility to upgrade Firmware while installed on-site, without removal of the Terminal and with zero downtime.

Power Supply Combo (IPS920)

- A 3 Amp Switch Mode Power Supply providing 13.8 V DC to charge a 12 V 7Ahr Sealed Lead Acid Battery.
- Nominal output voltage of 13.8 V DC with a fully charged Battery.
- Automatic switch-over to Battery operation on Mains Failure.
- Compact, Mild Steel Cabinet, accommodating the Power Supply, Controller or Terminal and a Sealed Lead Acid Battery.
- Two 13.8 V Power Outputs for powering the Terminal and, for example, a lock. Together these Outputs have a maximum power output of 2 A (max) continuous at 13.8 V DC.
- Five Quick Click Glands for easy wiring.

Use in an IXP220 or ImproNet System

- Relay functions are user configurable.
- Digital Inputs are user configurable and can perform specific tasks such as:
 - Door Open Sensing.
 - Request to Exit.
 - Scanner Inhibit.
 - Alarm Interface.
 - Action Request.

Physical Specifications

XRT910 Plastic Housing

Length	:	128 mm (5 in).
Width	:	166 mm (7 in).
Height	:	55 mm (2 in).
Approximate Weight	:	314 g (11 oz).
Cabinet Material	:	ABS Plastic.
Colour	:	Black.



IPS920 Power Supply Combo

Length	: 305 mm (12 in).
Width	: 295 mm (11 in).
Height	: 77 mm (3 in).
Approximate Weight	: 3 kg (7 lb).
Cabinet	: Mild Steel.
Colour	: Black.

Environmental Specifications

Operating Temperature	: -25°C to +60°C (-13°F to +140°F).
Storage Temperature	: -40°C to +80°C (-40°F to +176°F).
Humidity Range	: 0 to 95% relative humidity at +40°C (+104°F) non-condensing.

Approvals

CE Approval	: EN301 489-1 and EN301 489-3.
FCC Approval	: Pending.

Dust & Splash Resistance (XRT910)	: Designed to work in an indoor (dry) environment similar to IP40. The Terminal is not sealed against water.
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Dust & Splash Resistance (IPS920)	: Designed to work in an indoor (dry) environment similar to IP20. The Power Supply Combo is, therefore, not sealed against water.
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Drop Endurance	: 1 m (3.28 ft) drop (in packaging).
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Electrical Specifications

Power

XRT910 Plastic Housing

Input Voltage	: 10 V DC to 30 V DC, polarity sensitive.
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Power Requirements	Current (mA)	Power (W)
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12 V DC with no peripherals connected and relays off	: 75	0.90
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24 V DC with no peripherals connected and relays off	: 40	0.96
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Permissible Input Supply Ripple Voltage (Max)	: 1 V _{PP} at 50 Hz.
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Power Input Protection	: Reverse polarity, over-voltage and over-current protection are provided on the Terminal.
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IPS920 Power Supply Combo

Power Input

Input Voltage	: 85 V AC to 265 V AC at 50/60 Hz.
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Power Output

Output Voltage (Mains Power On)	: 13.8 V DC ±0.3 V DC.
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Output Current	: 2 A continuous (Power Output Terminals).
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NOTE: The Power Supply Combo includes a 3 A Switch Mode Power Supply which provides two outputs, both with a voltage of 13.8 V DC. The combined current supply from both outputs may not exceed 2 A. The remaining 1 A is used for battery charging and system requirements.

Battery

Type	: 12 V Sealed Lead Acid Battery, 7 Ahr (Max).
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Length	: 151 mm (6 in) (Max).
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Width	: 65 mm (3 in) (Max).
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Height	: 99 mm (4 in) including the Terminals (Max).
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Charge Voltage	: 13.8 V DC.
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The following specifications are common to all models of the ImproX iTRT:

Relay Power Requirements	: An additional ~0.4 W per Relay used.
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Real Time Clock Backup Battery (RTC)

Battery Type	: 1 x 3 V, CR2032, Lithium cell battery.
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Battery Life	: 2 Years with power OFF. 5 years with Power ON. 5 years Storage with Battery Tab in place.
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Terminal Bus

RS485 Terminal Bus

Electrical Interface	: RS485.
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Baud Rate	: 38 400.
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Data Format	: 8 data bits, no parity, 1 stop bit.
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Communications Protocol	: ImproX Secure Communications Protocol.
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Line Termination	: Provision is made for line termination.
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Reader Options

Reader 1 Wiegand and Reader 2 Wiegand allow connection to the following hardware: ImproX Multi-discipline Readers, ImproX Multi-mode Remotes, Wiegand Readers, ImproX (IR) Infrared Receiver or the ImproX RF 4-channel UHF Receiver. The function is selectable via the DIP-switches.

Power Output	: 12 V DC and 5 V DC (selectable) at maximum 200 mA.
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Modes Supported	: Tag + PIN-code or Reason Code.
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Baud Rate	: 9 600.
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Data Format	: 8 data bits, no parity, 1 stop bit.
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Electrical Interface	: TTL Full Duplex.
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Communications Protocol	: ImproX Proprietary Protocol.
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Digital Inputs

General

Input Type	: 4 Dry-contact inputs.
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Detection Resistance Range	: < 2 kOhm.
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Protection Range	: +15 V continuous.
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Relays

Relay Output	: 2 Relays, Form C, each with NO, COM and NC contacts.
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Contact Ratings	: 10 A at 28 V DC, 5 A at 220 V AC, 10 A at 120 V AC.
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Operations	: 100 000 Minimum.
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Power Consumption (per Relay)	: ~ 0.4 W.
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Processor

Type	: 32-bit ARM7TDMI operating at 72 MHz.
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Total RAM	: 58 K Byte.
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Flash	: 256 K Byte.
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Other

Anti-tamper Switch (XRT910 and IPS920)	: 1 Internal Switch.
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Factory Defaults

Baud Rate	:	Factory-set to 38 400.
Mode	:	Receive (Slave Mode).

User Interfaces

Status Indicator

Status LED : Continuous Red.

Upgrade Mode : Flashing Red (Steady).

RS485 Communications Failure : Flashing Red (Intermittent).

Diagnostic Indicators

Relay [2] : Continuous Red on activation of the Relay.

Relay [1] : Continuous Red on activation of the Relay.

Reader 2, RTE [2] : Continuous Green on detected contact closure.

Reader 2, DOS [1] : Continuous Green on detected contact closure.

Reader 1, RTE [2] : Continuous Green on detected contact closure.

Reader 1, DOS [1] : Continuous Green on detected contact closure.

RS485 RX : Flashing Green as per incoming data.

RS485 TX : Flashing Red as per outgoing data.

Related Information

For extra information relating to this product refer to the:

- ImproX iTRT Hardware Installation Manual (XRT300-0-0-GB-XX).

Ordering Information

Order the ImproX iTRT using the following Part Numbers:

- XRT910-0-0-GB-XX: ImproX (iTRT) Intelligent Twin Remote Terminal in an ABS Plastic Housing.
- IPS920-0-0-GB-XX: ImproX IPS containing an ImproX (iTRT) Intelligent Twin Remote Terminal.

Warranty Details

CAUTION: We reserve the right to nullify the products warranty where you have not properly installed the Metal-oxide Varistors.

This product conforms to our Warranty details on www.impro.net.

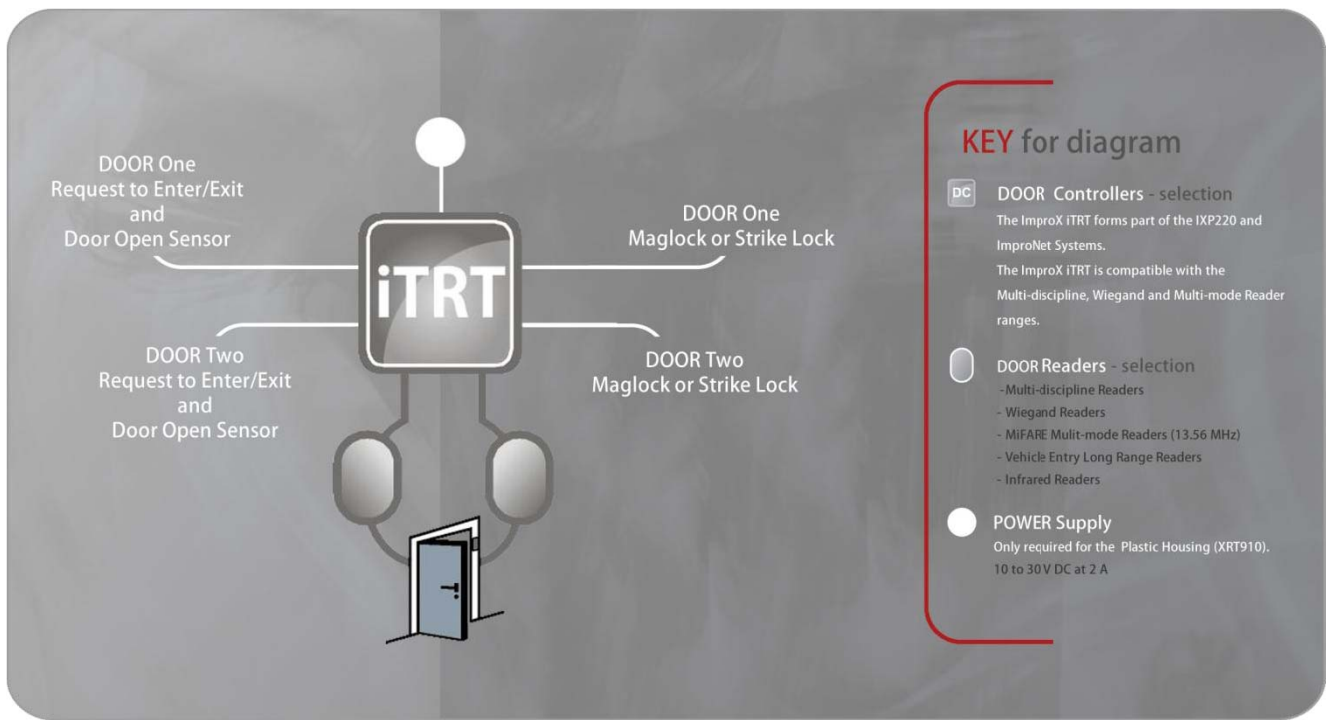


Figure 1: ImproX iTRT Overview

This Product Specification Catalogue applies to the ImproX (iTRT) Intelligent Twin Remote Terminal, XRT910-0-0-GB-07 and IPS920-0-0-GB-04. (The last two digits of the Impro stock code point to the issue status of the document or product).

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