

IMPROX MHR

ImproX Harsh Environment Micro Remote Reader

INTRODUCTION

The **ImproX (MHR) Harsh Environment Micro Remote Reader** is a small compact Remote Reader designed for use in conjunction with an ImproX (DT) Door Terminal, an ImproX (PT) Portal Terminal or an ImproX (TA) Time and Attendance Terminal within the IXP200, 300 or 400 Access Control Systems or in OEM applications.

The Remote Reader is intended for indoor or outdoor use, and is designed for use in harsh environments, such as industrial areas. The Remote Reader is vandal resistant.

APPLICATIONS

The following are possible uses of the Remote Reader:

- Access control Reader.
- Vending Reader.
- OEM custom requirements.



FEATURES

The Remote Readers provide the following features:

- Read/Write tag capability for various tag types: Slim Tags (Read Only), Omega Tags (Read Only), WriTag 128 (Read/Write) and WriTag 2048 (Read/Write).
- A single bi-coloured red/green LED, the use of which is configurable via the communications protocol.
- A buzzer.
- An external TTL remote communications bus interface, for connection to an ImproX DT or ImproX PT.

SPECIFICATIONS

PHYSICAL SPECIFICATIONS	
Dimensions	L = 75 mm (2.95 in). W = 72 mm (2.83 in). H = 27 mm (1.06 in).
Approximate Weight	250 g (8.82 oz).
Material	Die-cast zinc alloy.
Colour	Satin nickel finish.

ENVIRONMENTAL SPECIFICATIONS	Temperature Operating	-25°C to +60°C (-13°F to +140°F).	
	Temperature Storage	-40°C to +80°C (-40°F to +176°F).	
	Humidity Range	0 to 95% relative humidity at +40°C (+104°F) non-condensing.	
	EMC	EN 55024.	NOTE : <i>These tests were performed with the ImproX MHR Remote Reader connected to an ImproX PT Portal Terminal.</i>
	Electrostatic Discharge	EN 61000-4-2.	
	Electrical Fast Transients	EN 61000-4-4.	
	Surge Immunity	EN 61000-4-5.	
	Radiated Susceptibility	EN 61000-4-3.	
	Conducted Susceptibility	EN 61000-4-6.	
	Dust and Splash Resistance	This Remote Reader is manufactured in accordance with a dust and splash environment similar to that of IP30.	
Drop Endurance	2 m (6.56 ft) drop (in packaging).		
ELECTRICAL SPECIFICATIONS	Power Requirements		
	Voltage	3.5 V DC to 5.5 V DC, polarity sensitive.	
	Current	75 mA at 5 V DC, indicators all off.	
		100 mA at 5 V DC, indicators all on.	
	Power Input Protection	Reverse polarity protection is provided on the unit.	
	Permissible Input Supply Ripple Voltage (maximum)	1 VPP at 50 Hz.	
	Nominal Read/Write Range	40 mm to 60 mm (1.57 in to 2.36 in) (tag type dependent - see Table 1).	
	EEPROM	Retention of authentication keys.	
	Terminal Bus Port		
	Electrical Interface	TTL Full Duplex.	
	Baud Rate	9 600.	
	Data Format	8 data bits, no parity, 1 stop bit.	
	Communications Protocol	ImproX Proprietary Protocol.	
	OPERATOR INTERFACES	Buzzer	
Volume		Adjustable in four discrete steps (including off) via the communications protocol.	
Tones		Single tone.	
Status Indicators			
Bi-colour Red/Green LED		The functions are application specific (externally visible).	

TAG READING RANGES

The range at which the Remote Reader can read from or write to a tag is dependent on:

- The type of tag being used.
- The material on which the Remote Reader has been installed.

Typical ranges are shown in Table 1.

TAG TYPE	TYPICAL RANGE (minimum) (Remote Reader mounted on non-metallic surface)
ISO Credit Card Tag (Slim)	60 mm (2.36 in)
ImproX Credit Card Tag	60 mm (2.36 in)
ImproX Round Tag	40 mm (1.57 in)
ISO Credit Card WriTag 128	60 mm (2.36 in)
ISO Credit Card WriTag 2048	60 mm (2.36 in)
NOTE: Mounting the Remote Reader on a metallic surface will decrease the Read/Write range by up to 15%.	

Table 1: Typical Read/Write Ranges

ACCESSORIES

The Remote Reader is supplied with the following accessories:

- Wall mounting plugs and screws.

INTERNATIONAL STANDARDS

The ImproX MHR complies with requirements of the following international standards where applicable (tests applicable only when the Remote Reader is connected to an ImproX PT Portal Terminal).

EIA RS-485	Standard for Electrical Characteristics of Generators and Receivers for use in Balanced Digital Multipoint Systems.
EN 55024	Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment.
EN 61000-6-1	Generic Standards-Immunity.
EN 61000-6-3	Generic Standards-Emission.
EN 61000-4-1	Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 1: Overview of Immunity Tests. Basic EMC Publication.
EN 61000-4-2	Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 2: Electrostatic Discharge Immunity Test. Basic EMC Publication.
EN 61000-4-4	Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 4: Electrical Fast Transients / Bursts. Basic EMC Publication.
EN 61000-4-3	Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 3: Radiated, Radio-Frequency, Electromagnetic Field Immunity Test.
EN 61000-4-6	Conducted Susceptibility.
EN 61000-4-5	Surge Immunity.
EN 61000-4-11	Voltage Dips and Interruptions.

APPROVALS

CE Approval: Approved.



TAMPER PROOFING

The Remote Reader is potted, and is therefore tamper-resistant. The die-cast housing enhances the tamper resistance.

RELATED IMPRO PRODUCTS

The ImproX MHR Remote Reader is designed to be used in conjunction with the ImproX DT Door Terminal, ImproX PT Portal Terminal or ImproX TA Time Attendance Terminal.

ORDERING INFORMATION

The ImproX MHR Remote Reader can be ordered under the Impro code XMR901-1-0-GB-XX.

APPLICABILITY OF THIS CATALOGUE

The last two digits of the standard Impro stock code indicate the issue status of the item concerned.

This catalogue is applicable to the ImproX (MHR) Harsh Environment Micro Remote Reader, XMR901-1-0-GB-01.

XMR302-0-0-GB-04	Issue 05	February 2004	2002catalogue/ImproX Product Catalogue/ ImproX MHR/LATEST RELEASE/ImproX MHR-en-cat Issue 05 Approved.doc
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