The **Impro Wiegand Reader Module** (WRM) is one of the new, 3rd-generation, Access Portal Cluster Modules from Impro Technologies.

This Cluster Extension Module may be plugged into an existing Cluster (or connected to a Cluster Controller Module via S-Bus) to add full Anti Pass-back (APB) control of one door, or Single Entry Access Control of two doors.

The Module has two full-featured Wiegand Reader Terminals with their associated Relays, Door Open Sense and Request To Exit digital inputs.

The Wiegand Reader Module is presently available as a Cluster Module in a black ABS plastic Housing - and a PCB Card version for installation into an IPS (Integrated Power Supply) Housing.
**Key Features**

- Cost effective, modular solution that offers:
  - **Scaling** - Quick and convenient (plug-in) should needs increase
  - **Expansion** - Zero System Downtime - When plugged into the Cluster Controller
    - Replacing a WRM only requires downtime on the doors associated with the Expansion Modules that are disconnected (the Tag memory and Transaction Buffer reside in the Cluster Controller).
  - **Hot Swappable** - No need to power down when plugging, unplugging and wiring of modules.

- 3-Year Warranty on Hardware
- A Software utility to upgrade Firmware while installed on-site, without removal of the WRM (WRM must be clustered with its CCM.)
- The WRM Interfaces to the following Impro Readers:
  - Impro Multi-discipline Readers
  - Impro Wiegand Reader
  - Impro Multi-mode Readers

- Each WRM:
  - Offers full Wiegand Support
  - Connects up to two Readers or Third-party Devices
  - Allows Relaxed or Full Anti-passback (APB) access on a single Door or single entry on two Doors
  - Has end-of-line (EOL) Sensing on Door Open Sensor (DOS) Inputs
  - Has eight status LEDs (two visible with the housing closed) providing concise diagnostic indication
  - Interfaces to Third-party Wiegand Readers as well as to legacy devices, such as the UHF Receiver

- Two 10 A 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 Dry Contact Digital Inputs including two Door Open Sensor (DOS) and two Request to Exit (RTE) Inputs. (When used in Access Portal Pro or IXP220 Systems, these inputs may be configured for other uses, including: Scanner Inhibit, Alarm interface and Action Request)

**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**

- Dust & Splash: Designed to work in an indoor (dry) environment similar to IP20. The WRM is not sealed against water
- Drop Endurance: 1 m (3.28 ft) drop (in packaging).

**Electrical Specifications**

**Power**

- Input Voltage: 12 V DC to 15 V DC, polarity sensitive.
- Power Requirements: 12 V DC with no peripherals connected and relays off
  - Current (mA): 37
  - Power (W): 0.44
- Power Input Protection: Reverse polarity, over-voltage and over-current protection are provided on the Terminal.
- Relay Power Requirements: An additional ~0.4 W per Relay used

**Communications**

- Direct (Baud Rate 115 200):
  - When the WRM is plugged (side-by-side) directly into a Cluster Controller Module (CCM), or installed as a PCB Card in an IPS housing or 19” Rack
- S-Bus (Baud Rate: 9600):
  - S-Bus allows for the remote installation of the WRM, up to 150m away from its CPU.
- Module Status: Slave

**Digital Inputs**

- Input Type: 2 Dry-contact inputs with End-of-line (EOL) Sensing and 2 Dry-contact inputs without End-of-line (EOL) Sensing.
- Detection Resistance Range: < 2 kΩ
- Protection Range: +15 V continuous.

**Relays**

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

**Processor**

- Type: ARM Cortex M0 operating at 45MHz

**Other**

- Anti-tamper Switch: 1 PCB Mounted Micro-lever Switch

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**Physical Specifications**

- HML900: Wiegand Reader Module in plastic housing

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>186 mm (7.3 in)</td>
</tr>
<tr>
<td>Width</td>
<td>99 mm (3.9 in)</td>
</tr>
<tr>
<td>Height</td>
<td>57 mm (2.3 in)</td>
</tr>
<tr>
<td>Approximate Weight</td>
<td>280 g (9.9 oz)</td>
</tr>
<tr>
<td>Housing Material</td>
<td>ABS Plastic</td>
</tr>
<tr>
<td>Colour</td>
<td>Black</td>
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</tbody>
</table>

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**Impro (WRM) Wiegand Reader Module**

HML900-0-0-GB-XX  HML901-0-0-GB-XX
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
- ImproX RF 4-channel UHF Receiver

The function is selectable via the DIP-switches.

Power Output: 12 V DC OR 5 V DC (selectable) at maximum 200 mA.

Modes Supported: Tag + PIN-code or Reason Code.

Baud Rate: 9 600.

Data Format: 8 data bits, no parity, 1 stop bit.

Electrical Interface: TTL Full Duplex.


Factory Defaults

Baud Rate: Factory-set to 38 400.

Mode: Receive (Slave Mode).

User Interfaces

LED Status and Diagnostic Indicators

<table>
<thead>
<tr>
<th>Status LED</th>
<th>Continuous Red, flashing during fault (Visible through closed housing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data LED</td>
<td>Flashes green During Communication (Visible through closed housing)</td>
</tr>
<tr>
<td>Relay 1</td>
<td>Continuous Red on activation of the Relay</td>
</tr>
<tr>
<td>Relay 2</td>
<td>Continuous Red on activation of the Relay</td>
</tr>
<tr>
<td>Reader 1, RTE</td>
<td>Continuous Green on detected contact closure</td>
</tr>
<tr>
<td>Reader 1, DOS</td>
<td>Continuous Green on detected contact closure</td>
</tr>
<tr>
<td>Reader 2, RTE</td>
<td>Continuous Green on detected contact closure</td>
</tr>
<tr>
<td>Reader 2, DOS</td>
<td>Continuous Green on detected contact closure</td>
</tr>
</tbody>
</table>

Related Information

For extra information relating to this product refer to the:

- Wiegand Reader Module Installation Manual (HMW300-0-0-GB-XX)

Ordering Information

Order the Wiegand Reader Module using the following Part Numbers:

- HMW900-00-GB-XX: Module in plastic Cluster Module Housing
- HMW901-00-GB-XX: PCB Card on base for IPS Housing

Figure 1 – System layout showing how Wiegand Reader Modules may be connected to a Cluster Controller Module