

ISO Compatible RF/ID Panel Readers For Passive Electronic Identification Transponders (P/N PNL-2530-001, PNL-4060-001, PNL 60120-V2)



General Description

The Allflex Panel Readers are flat panel antennas and integral passive transponder reading devices that are compatible with the technical specifications of ISO Standards 11784 and 11785, including both FDX-B and HDX technologies. The Panel Readers provides the basic RF/ID reader functions of reading and transmitting via RS232/RS422 serial data the identification code contained within passive transponder for real time and batch mode data logging. The Panel Reader provides two indicator lights designating "Exciter Active" (red) and "Good Read" (green). Power and serial data are connected to a Panel Reader through a 2 meter long cable, which is 3 45+

. The Panel Reader is provided with a Windows® based PC utility *Configurator*, which provides users an easy means of customizing the Panel Reader's serial data format and operating mode. The Panel Readers are intended for stationary mounting in applications where electronic eartagged livestock traverse past the panel.

Construction

The Allflex Panel Readers are assembled in laminated plastic panel enclosures that are designed to withstand the hazards and abuse typical in livestock operations. The Panel Reader's antenna coil is sealed within the laminated plastic, while the reader electronic assembly is enclosed in a separate compartment featuring a gasketed cover. The Panel Reader is hermetically sealed to IP67 specifications for being dust tight and immersible in water, and is available constructed from either economical PVC plastic or high-durability UHMW polyethylene. Panel Readers are available in three sizes measuring 25cm x 30cm (PNL-2530-001), 40cm x 60cm (PNL-4060-001), and 60cm x 120cm (PNL-60120-001). All three sizes measure 16mm thick, and 30mm thick in the vicinity of the reader electronics compartment. The data/power cable exits the reader compartment through a watertight strain relief.



Performance Capabilities

The Allflex Panel Readers provide various read range performances that are proportional to panel size and supply voltage, which can range between 6 and 12 VDC. Typical read range performances are listed within the Specifications section of this document.

Ordering Information

Allflex P/N PNL-2530-001, PNL-4060-001, PNL-60120-V2 ISO Compatible Panel Reader

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SPECIFICATIONS

GENERAL

RFID Compatibility:	ISO 11784 & 11785 HDX and FDX-B
Form Factor:	Flat Laminated Plastic Enclosure
User Interface:	Red LED "Exciter Active" Visual Indicator Green LED "Good Read" Visual Indicator RS232/RS422 Serial Data Port
RS232 Serial Port:	1200 BPS to 57.6 KBPS (9600N81 default setting)
Serial Data ID Code Format	Decimal or Hexadecimal w/flexible formatting options
Memory:	Retains last ID Code read in non-volatile memory for retransmission
User Options:	Non-volatile mode control options selectable via RS232 serial port interface
Power/Data Interface:	3 meter straight cable (unterminated) / can be extended
Antenna Tuning:	Capacitor array located inside reader compartment
Battery Power:	6 to 12 VDC (External Battery or Mains Powered Linear Regulated Supply)
Agency Certifications: (*PENDING)	Electromagnetic Compatibility - FCC Part 15 Class A / CISPR 22 (EN55022) *ISPR Certification

PHYSICAL/ENVIRONMENTAL

Panel Reader Model	PNL-2530-001	PNL-4060-001	PNL-60120-V2
Dimensions:	25cm x 30cm x 30mm	40cm x 60cm x 30mm	60cm x 120cm x 30mm
Weight:	~ 2 kg	~ 6 kg	~ 18 kg.
Material:	PVC or UHMW Polyethylene UL94 HB Plastic		
Color:	Gray (PVC) or White (UHMW)		
Operate Temperature	-10°C to +55°C (IEC68.2.1/.2)		
Storage Temperature	-40°C to +85°C (IEC68.2.1/.2)		
Humidity:	0 to 100% (IEC68.2.56)		
Altitude:	-100 to +3,000 meters		
Mechanical Shock:	Per IEC 68-2-27 (15g/11ms sawtooth) & 1 meter free-fall drop onto concrete)		
Vibration:	Per IEC 68-2-6 (10-55 Hz sinusoidal/0.75mm displ./1 oct/min./10 cycles)		
Hermeticity:	IP-67 (dust-tight/immersible) per IEC 529		

RELIABILITY

MTBF:	50,000 hours
MTTR:	0.5 hours (field replaceable electronics module)
Expected Life:	5 years, minimum

PERFORMANCE

Panel Reader Model	PNL-2530-001	PNL-4060-001	PNL-60120-V2
Read Distance: (@ 6 VDC battery) (add ~ 20% for 12VDC)	60cm (HDX/HP) ¹ 45cm (FDX-B/HP) ²	80cm (HDX/HP) ¹ 55cm (FDX-B/HP) ²	100cm (HDX/HP) ¹ 70cm (FDX-B/HP) ²
¹ Allflex 30mm eartag ² Allflex 31mm eartag			
Reading Orientation:	0° to 45° with less than 10% range decrease		
Read Zone:	80% of read distance across entire panel surface on either side		
Interrogation Rate:	~ 9 times/second		
Read Error Rate:	Less than 1 in 10 ⁶		
Exciter Signal Radiated Field Strength: ³			
@ 10 meters w/6VDC power input	94 dBuV/m	103 dBuV/m	112 dBuV/m
@ 10 meters w/12VDC power input	100 dBuV/m	109 dBuV/m	118 dBuV/m

³Note: Maximum legally allowed operating voltage in U.S. and Canada for PNL-60120-001 is 6.0 volts DC