

Mackay GUARDIAN™ X Series

Mackay mechanism



Mackay Guardian™ X, XL & XLE Models

Advanced Electronic Mechanism

- The Mackay Guardian™ mechanism is the parking industry's most respected and foremost choice for single space parking meter solutions.
- The Mackay Guardian™ X Series is MacKay's neXt generation of electronic mechanisms. With three models to choose from, the X, XL and XLE utilize the proven Mackay Guardian™ pedigree of being *tough*, *reliable* and *accurate*.
- The Mackay Guardian™ X Series has been designed to meet the challenges, and demanding requirements of our customer's diverse single space parking needs.
- Designed for flexible enforcement, programming, battery use and ease of maintenance.
- Count Down Timer Accuracy and Real Time Clock Accuracy certified by an independent laboratory.
- Features include:
 - MacKay's patented SmartChute™ coin validation technology,
 - MacKay's patented SmartPower™ technology (XLE model),
 - Exceptional battery life performance (XLE model),
 - Automatically scheduled profile/rate changes,
 - LED back light for nighttime use (XL & XLE models),
 - Large easy to see, rear violation LCD.
- Manufactured under stringent ISO 9001:2000 certified quality processes.
- MacKay Meters backs its entire Mackay Guardian™ product line with a solid warranty based on the confidence, quality and lineage of its products.



<over for specifications>






www.mackaymeters.com

MacKay GUARDIAN™ X Series

COMPARISON



	X	XL	XLE
 MacKay Guardian™ XLE Model	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
 MacKay Guardian™ XL Model	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
 MacKay Guardian™ X Model	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
General Specifications ! Compatible with all MacKay mechanism housings and most competitors' products. ⁴ ! Manufactured under ISO 9001:2000 certified quality processes. ! Designed to work under extreme environmental conditions. ! Can withstand prolonged exposure to intense UV radiation, humidity, rain, sleet, snow and grime and under normal street vibration. ! Operating temperature range: -40°C (-40° F) to 80°C (176° F).	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Internal Time Keeping ! Equipped with a time-of-day clock that is accurate to a few seconds-per-week. ! Real Time Clock Accuracy and Count Down Timer Accuracy is certified by an independent laboratory. ! A 365-day calendar/Real Time clock. • with short-term power backup during battery exchanges/replacement. • Time-of-day clock is automatically re-synchronized to the handheld computer's time-of-day clock during data transfer. • Perpetual and automatic daylight savings time change feature. ⁴ • Automatically introduce a scheduled profile/rate change.	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Powered by Patented MacKay SmartPower™ Technology • Supports 6V and 9V alkaline battery packs. • Can operate for a period in excess of 12 months ¹ using a 6V (4xAA) alkaline pack, dual 9V alkaline pack ² , or single 9V lithium pack. • Supports the use of 3V, 4.5V, 6V and 9V battery packs, with no changes to main board hardware required. • Can operate for a period in excess of 36 months ¹ (3yrs) using a 4.5V (3x C) alkaline pack, and for a period in excess of 48 months ¹ (4yrs) using a 3V (2x D) alkaline pack.	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Front Display • High contrast and high visibility Liquid Crystal Display (LCD) and Light Emitting Diode (LED) technologies. • LCD has programmable time-of-day/duration and LED back light for effective night-time operation. • Large display - 2.5cm (1 inch) x 5cm (2 inches). Shows four 1.27cm (1/2 inch) high numeric digits, colon, plus seven additional icon/symbols/messages.	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Rear Display • Large and highly visible display - 2.5cm (1 inch) x 7.5cm (3 inches). Flashes red and silver to indicate "Time Expired" or solid silver for valid parking time. • Can display text "EXPIRED", "OUT OF ORDER", two 1.27cm (1/2 inch) high No Parking Symbols • Optionally supports dual numeric displays (time displayed front and back). ³	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
LED Display • Dual colour (Red/Green) Super Bright LED's on both front and rear. • Flashing LED visible at distance of 24 meters (80 feet) at night. • Programmable for maximum flexibility in enforcement options.	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Patented SmartChute™ Coin Discriminator • 3-coil design provides accurate coin reads and long life. • Straight-drop/clear view coin chute allows for superior detection and removal of foreign objects. • Coin chute is easily and quickly replaced/serviced in the field without the need for special tools. • Coin chute calibration or chute training is not required. • Sorts up to 16 different coin/token signatures and uses a single entrance slot. • Can be programmed to detect non-metallic jams such as paper/gum. • Validates and discriminates coins electronically by two different coil sensors/methods. • Invalid coin indicator on display.	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Communication and Data Transfer • Supports the following modes of communication and programming: • RF (Radio Frequency) • IR (Infrared) • peripheral port • card slot, and card adapter port (if card reader installed). • A typical meter rate or parameter change in less than 10 seconds using IR. • Transfer of coin audit data, as well as clock date re-synchronization, in less than 3 seconds using IR. Faster data transfers may be possible using other communication modes. • Coin audit totals are always protected and stored in non-volatile memory. • Audit information retained during battery failure and/or replacement. • Status of meter uploaded when interrogated or otherwise stimulated. • Meter information can be imported into an electronic parking citation issuance system to be printed on a ticket at the time of issuance. ⁴	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓

	X	XL	XLE
ISO Card System ⁴ • Programmable to use one (or more) of the following ISO7816 compliant card payment technologies: • Microprocessor cards capable of using sophisticated security algorithms to deter fraud. ⁴ (e.g. DES) • Reloadable/reusable type memory card used as a token based stored value card. • Disposable type memory card used as low cost token based stored value card. • Card payment schemes requiring active authentication. ⁴ • Card reader rated at 200,000 insertions and constructed for easy maintenance. • Card reader can optionally support single security access module (SAM). ^{3,4}	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Special Expansion Features • Expansion ports are accessible from within the meter frame. These ports act as integration points for future add-on hardware and accessories. • Card reader edge connector port. • Main board edge connection port. • Meter supports an optional button interface located next to coin slot. ⁴ • Other custom applications/configurations available upon special request. ⁴	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Memory Size & Programmable Features • Standard programming resident in 60 KB re-programmable memory. • Additional 256 KB serial Flash data storage. • Highly flexible rate/tariff/max-time structure including: • Up to eight (8) defined rates with defined max time for each. • Standard rate operation. • Time-of-day rate/max time control. • Day-of-week rate/max time control. • Day-of-year rate/max time control. • Progressive/regressive tariffs. ⁴ • Cumulative grace.	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Software System Management Features • Meter revenue audit including individualized coin counts, plus total invalid coin count. • Separate time-stamped transaction (coin/card) and maintenance logs for ticket adjudication. • Transaction log stores time-stamped data for the last approx. 450 coin and/or card transactions. • Maintenance log stores time-stamped data for the last approx. 100 maintenance events. • Coin discrimination data is retrievable in the field for chute performance analysis by factory personnel. • Swapping/moving meters within a meter system. • Audit disable for coin and/or card check during: • Maintenance/testing. • Time/rate programming. • Meter maintenance. • Meter/post inventory. • Password protected - user and group level security features.	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Handheld Computer • Rugged handheld computer, with Ethernet/serial communications/rechargeable cradle and attached IR and/or RF communications device. • Wide range of accessories available.	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
Warranty • J.J. MacKay Canada Limited, the manufacturer, guarantees for a period of one year from the date of shipment against defects in workmanship and/or materials.	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓

Contact your local representative for further information.

[1] Actual battery life achieved may vary significantly depending on many factors including but not limited to: battery manufacturer, age of battery when installed, meter usage, hours of operation, features implemented, and operating environment.
 [2] Requires Dual 9V adapter, Part # 35GD0000055
 [3] Factory installed option, 6-8 weeks lead time.
 [4] Certain restrictions and/or costs may apply.

As our policy is one of continuous product improvement and development, we reserve the right to alter product specification and design. Photos are representative; product appearance may differ.

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Head Office:

J.J. MacKay Canada Limited
 1342 Abercrombie Road
 PO Box 338, New Glasgow
 Nova Scotia, Canada B2H 5E3
 Phone: (902)752-5124
 Fax: (902) 752-5955

Sales Office:

Head Office customer service and technical support:

Toll free in North America: 1-888-4MACKAY
 (462-2529)

Fax: (902) 752-4889
 Email: customer.service@mackaymeters.com
 Web: www.mackaymeters.com

