

# DynaPro

## Secure Cryptographic Device for PIN and Data Entry Installation and Operation Manual



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**Table 0-1 - Revisions**

<b>Rev Number</b>	<b>Date</b>	<b>Notes</b>
1.01	Aug 15, 2012	Initial Release
2.01	Sep 10, 2013	Change name from IPAD EMV to DynaPro; include Ethernet and USB descriptions; update dimensions; update images; update formatting.
3.01	Oct 25, 2013	Update page screenshots and EMV transactions throughout section <b>5</b>
40	Jan 12, 2016	Change “PIN Encryption Device” to “Secure Cryptographic Device for PIN and Data Entry”; Update Major Components Diagram; Update Function Button Diagram
41	Jun 19, 2019	Update formatting, standardize terms, add and re-arrange sections to match current standards (e.g., add sections <b>1.15, 2, 3.1, 3.2, 4, 6, 7</b> , and refactor others); Add section <b>4.2</b> to include information about keypad-based configuration; Update list of available models and features; Update technical specifications; Misc. clarifications and corrections.

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Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.**

## CUR/UR

This product is recognized per Underwriter Laboratories and Canadian Underwriter Laboratories 1950.

## CE STANDARDS

Testing for compliance with CE requirements was performed by an independent laboratory. The unit under test was found compliant with standards established for Class B devices.

## UL/CSA

This product is recognized per *UL 60950-1, 2nd Edition, 2011-12-19* (Information Technology Equipment - Safety - Part 1: General Requirements), *CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12* (Information Technology Equipment - Safety - Part 1: General Requirements).

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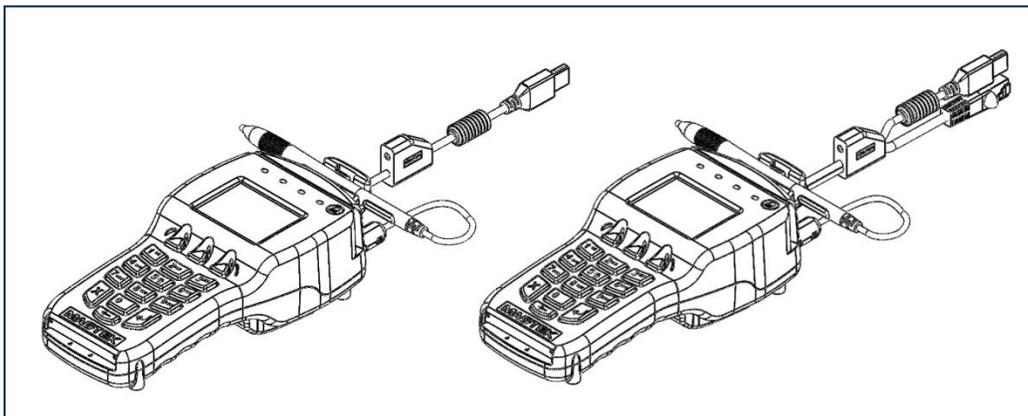
## 1 Introduction

### 1.1 About DynaPro

DynaPro is a secure PIN encryption device combined with MagTek's 3-Track MagneSafe secure card reader. DynaPro provides the most comprehensive end-to-end security solution to prevent personal cardholder data breaches while bringing convenience and speed to Retail and Financial transactions.

DynaPro features include:

- PCI PTS v3.x, SRED Compliant
- Meets EMV level 1 and 2 requirements
- Track Secure Card Reader
- EMV chip card reader
- Contactless reader (optional)
- Backlit color LCD graphics
- Optional real-time electronic signature capture
- Optional privacy shield
- 16-digit key pad
- Connectivity via USB HID or Ethernet
- TDEA (3DES) Encryption
- DUKPT Key Management
- Remote Key Injection
- Card and Data Authentication
- Device Authentication
- Mutual Authentication
- Flexible Data Formats
- Flexible Data Masking



**Figure 1-1 - DynaPro USB and Ethernet**

**Table 1-1 - Available Models and Options**

PN	Description	Cable	NFC	SigCap
30056072	DYNAPRO V3, PCI, CONTACTLESS, SIGNATURE CAPTURE, BLACK, USB 6FT	USB	Yes	Yes
30056073	DYNAPRO V3, TST, CONTACTLESS, SIGNATURE CAPTURE, BLACK, USB 6FT	USB	Yes	Yes
30056070	DYNAPRO V3, PCI, CONTACTLESS, NO SIGCAP, BLACK, USB 6FT	USB	Yes	No
30056071	DYNAPRO V3, TST, CONTACTLESS, NO SIGCAP, BLACK, USB 6FT	USB	Yes	No
30056083	DYNAPRO V3, PCI, NO CTLESS, SIGNATURE CAPTURE, BLACK, USB 6FT	USB	No	Yes
30056086	DYNAPRO V3, TST, NO CTLESS, SIGNATURE CAPTURE, BLACK, USB 6FT	USB	No	Yes
30056082	DYNAPRO V3, PCI, NO CTLESS, NO SIGCAP, BLACK, USB 6FT	USB	No	No
30056085	DYNAPRO V3, TST, NO CTLESS, NO SIGCAP, BLACK, USB 6FT	USB	No	No
30056092	DYNAPRO V3, PCI, NO CTLESS, NO SIGCAP, BLACK, USB 6FT, QWICKCARDS	USB	No	No
30056074	DYNAPRO V3, PCI, CONTACTLESS, SIGNATURE CAPTURE, BLACK, ETHERNET 6FT	Ethernet	Yes	Yes
30056075	DYNAPRO V3, TST, CONTACTLESS, SIGNATURE CAPTURE, BLACK, ETHERNET 6FT	Ethernet	Yes	Yes
30056094	DYNAPRO V3, TST, CONTACTLESS, NO SIGCAP, BLACK, ETHERNET 6FT	Ethernet	Yes	No
30056084	DYNAPRO V3, PCI, NO CTLESS, NO SIGCAP, BLACK, ETHERNET 6FT	Ethernet	No	No
30056087	DYNAPRO V3, TST, NO CTLESS, NO SIGCAP, BLACK, ETHERNET 6FT	Ethernet	No	No

### 1.2 Protection for All Points Within the Payment Infrastructure

In addition to meeting the requirements established by PCI PTS v3.x, which incorporates SRED features, DynaPro has MagnePrint, a proven embedded security feature that authenticates the debit, credit, or gift card and its encoded track data, rendering counterfeit or cloned cards useless. So even if cardholder data is acquired for the purpose of manufacturing counterfeit cards, such cards can be detected, the transaction can be declined, and the criminal can be prosecuted. The MagnePrint feature provides a valuable defense to protect the merchant, the acquirer, the processor, the card issuer, and ultimately the consumer.

### 1.3 Securing Personal Cardholder Data

DynaPro immediately encrypts data at the point of swipe to safeguard personal information encoded on the magnetic stripe. The encryption takes place within an encapsulated magnetic read head as the card is swiped, eliminating the chance of intercepting clear text data. DynaPro's data encryption scheme uses the industry standard TDEA (3DES) algorithm, which offers merchants, processors, issuers and acquirers the flexibility to manage decryption services themselves or to outsource, thereby avoiding the risk imposed by unproven, proprietary encryption algorithms.

### 1.4 Security and Ease of Integration by Design

In addition to securing clear text card data, DynaPro uses a 32-bit secure processor which incorporates flexible data formatting and masking capabilities for compatibility with existing software and payment applications, eliminating the need for recertification.

DynaPro supports Device Authentication so the retailer, processor, and acquirer have the confidence of knowing a rogue reader was not substituted and provides transparency to the processor, acquirer, or ISO if the device is changed. Furthermore, it supports Mutual Authentication through a secure challenge/response sequence, which eliminates both the potential of being redirected to an illegitimate site and the ability to substitute a compromised PINpad terminal.

### 1.5 Remote Services

DynaPro supports secure remote key injection, eliminating the need to return the device in the event a new key is required.

### 1.6 Physical and Electronic Security

DynaPro's enclosure and its associated electronics have been designed to form a Tamper Resistant Security Module (TRSM). The covers are securely attached and incorporate sensing circuits to detect if any attempt is made to open the device. Internal spaces within DynaPro have been minimized to reduce the possibility of unauthorized modifications.

In addition, any attempt to penetrate or modify DynaPro electronically causes the device to permanently erase its stored encryption keys, after which DynaPro ceases to function.

### 1.7 Liquid Crystal Display

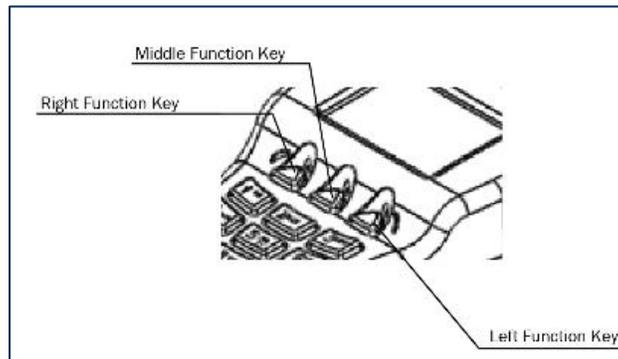
The device incorporates a color Liquid Crystal Display (LCD) capable of showing static or animated messages.

### 1.8 10-Digit Numeric Pad

During normal operation the numeric keypad is used for PIN entries. An audio tone provides feedback when entering the PIN digits. There are three additional keys that may be used during a transaction: an ENTER button (green), a CLEAR button (yellow), and a CANCEL button (red).

## 1.9 Function Buttons (Soft Keys)

The three function buttons or *soft keys* are located below the display. These buttons are programmable for use with display-based prompts.



**Figure 1-2 - Function Buttons**

## 1.10 Low-Power Standby Mode

When the Windows operating system shuts down or is suspended, DynaPro enters *sleep mode*.

## 1.11 Magnetic Card Reading

DynaPro contains a MagneSafe card reader that encrypts card data at the point of swipe to protect the cardholder's personal information. The reader incorporates MagTek's 3-track encrypting IntelliHead, a magnetic read head which has encapsulated and securely potted electronics that reads, decodes, and encrypts card data within the head. This technology secures the magnetic stripe data at the earliest point in the transaction chain—the initial swipe.

In addition, as a card is swiped through the reader, through the use of MagnePrint technology the card can be authenticated immediately, either by Magensa.net or by another system, to determine whether the card is counterfeit or has been altered.

The card reader is capable of reading any ISO or AAMVA encoded magnetic stripe data.

## 1.12 Chip Card Reading

DynaPro includes a chip card (ICC) reader. The card is inserted from the front of the device under the keypad.

## 1.13 Contactless Card Reading

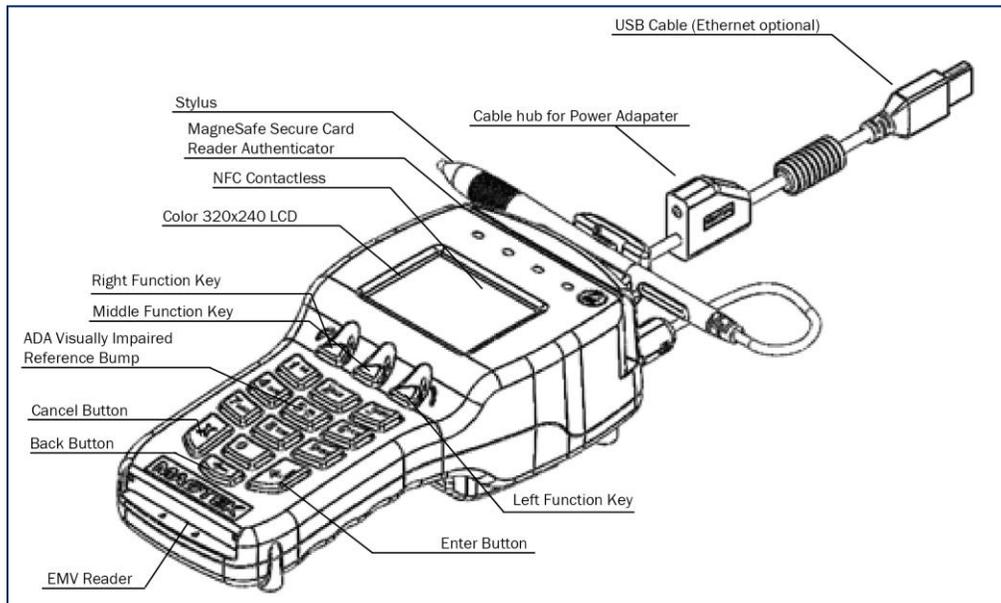
DynaPro includes an optional contactless reader. The card or payment device is tapped above the display.

## 1.14 About Major Components

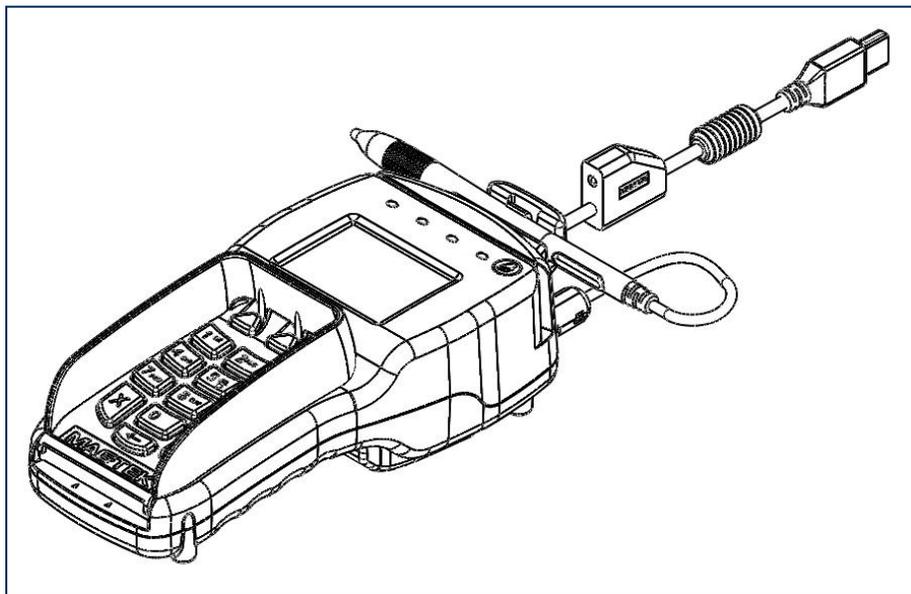
### NOTICE

**The ferrite bead must remain attached to the stylus cable at all times, do not remove. Changes or modifications not expressly approved by MagTek could void the owner's authority to operate the equipment.**

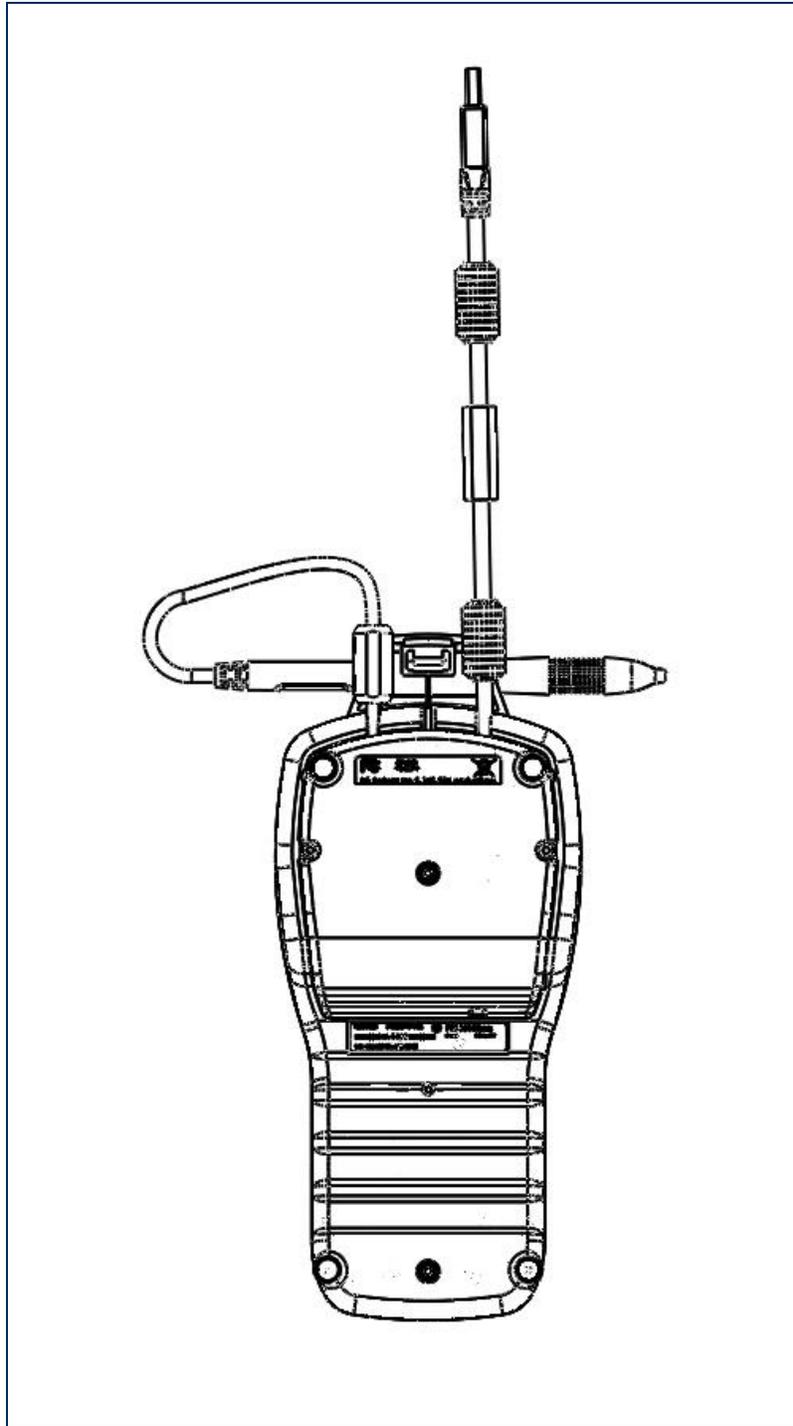
The major components of various DynaPro models are shown in the following figures.



**Figure 1-3 - Major Components (Front)**



**Figure 1-4 - With Privacy Shield Installed**



**Figure 1-5 - Major Components (Back)**

### 1.15 About Terminology

In this document, DynaPro is referred to as the **device**. It is designed to be connected to a **host**, which is a piece of general-purpose electronic equipment which can send commands and data to, and receive data from, the device. Host types include PC and Mac computers/laptops, tablets, and smartphones.

Generally, the host must have **software** installed that communicates with the device and is capable of processing transactions. During a transaction, the host and its software interact with the **operator**, such as a customer service representative, while the device interacts with the **cardholder** (even if the cardholder is using a virtual representation of the card account, such as a smartphone).

## 2 Handling and Storage

### CAUTION

Proper handling of the device throughout delivery, assembly, shipping, installation, usage, and maintenance is very important. Not following the guidelines in this document could damage the device, render it inoperable, and/or violate the conditions of the warranty.

### NOTICE

Connect the device to a power source as soon as possible after receiving it, and keep it connected to a power source whenever possible to maximize operation.

### 2.1 Handling to Avoid Damage

Upon receiving the device, inspect it to make sure it originated from an authentic source and has not been tampered with.

From device delivery through assembly, shipping, installation, usage, and maintenance, the device must not be exposed to conditions outside the ratings in **Appendix A Technical Specifications**.

If the device is exposed to cold temperatures, adjust it to warmer temperatures gradually to avoid condensation, which can interfere with the operation of the device or cause permanent damage.

Do not drop or shake the device.

For information about ongoing maintenance of the device, such as cleaning, see section **6 Maintenance**.

### 2.2 Handling to Avoid Accidental Tamper

This device implements active tamper detection, which uses a small amount of electricity even when the device is completely powered off. The device ships with a coin cell backup battery which provides a shelf life of approximately 5 years. Storage conditions (such as storage above 77°F / 25°C) strongly affect this duration. If the battery is allowed to completely discharge, the device interprets this as tampering.

Upon detecting tampering, the device locks down and must be returned to the manufacturer to reset. To avoid accidental tamper events, follow these precautions:

- Connect the device to a power source as soon as possible after receiving it, and keep it connected to a power source whenever possible.
- Do not drop or shake the device.
- Do not attempt to disassemble the device.
- Do not expose the device to excessive heat or cold (see **Appendix A Technical Specifications**).

### 3 Installation

Installing DynaPro is straightforward: The acquirer configures the Certificate Authority, public keys, terminal and payment brand settings before deployment; end users need only set up a host with appropriate software, configure the software, and connect the device to the host. This section provides general information about solutions that incorporate DynaPro, including host software, connecting the device, and charging the device.

#### 3.1 About Inspection

It is important to regularly and thoroughly inspect a device in live usage, and its immediate surroundings, to make sure malicious individuals have not tampered with it. MagTek recommends inspection training for all device operators, and an inspection schedule with checkpoints in place to make sure inspections are being done as specified and as scheduled.

Before the device is deployed, it is also important to inspect the packaging to make sure it has not been tampered with in storage or in transit.

#### 3.2 About Software

In any solution, DynaPro is connected to a host, which must have software installed that knows how to communicate with the device, and which is capable of processing transactions. To set up the host to work with DynaPro, follow the installation and configuration instructions provided by the vendor of the host or the host software. For information about developing custom host software, see section **7 Developing Custom Software**.

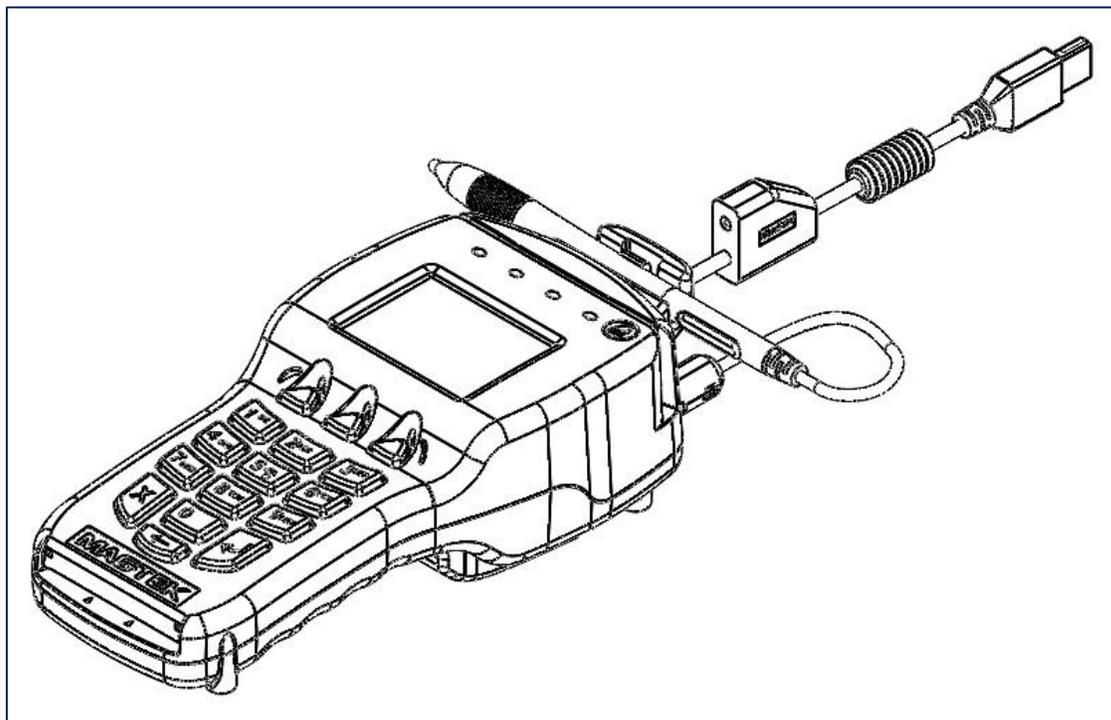
### 3.3 How to Connect DynaPro to a Host via USB

**⚠ CAUTION**

**Connecting or disconnecting the USB cable from the back side of DynaPro when the host is ON may clear the encryption keys.**

To connect DynaPro to a host using the USB connection, connect its USB cable to the USB port on the host as shown in **Figure 3-1**. The standard USB cable P/N **30019317** is 6 feet long.

Upon installation, Windows automatically recognizes and installs the USB drivers for this device.



**Figure 3-1 - Connecting DynaPro to a USB Host**

### 3.4 How to Connect DynaPro Go to a Host via Ethernet

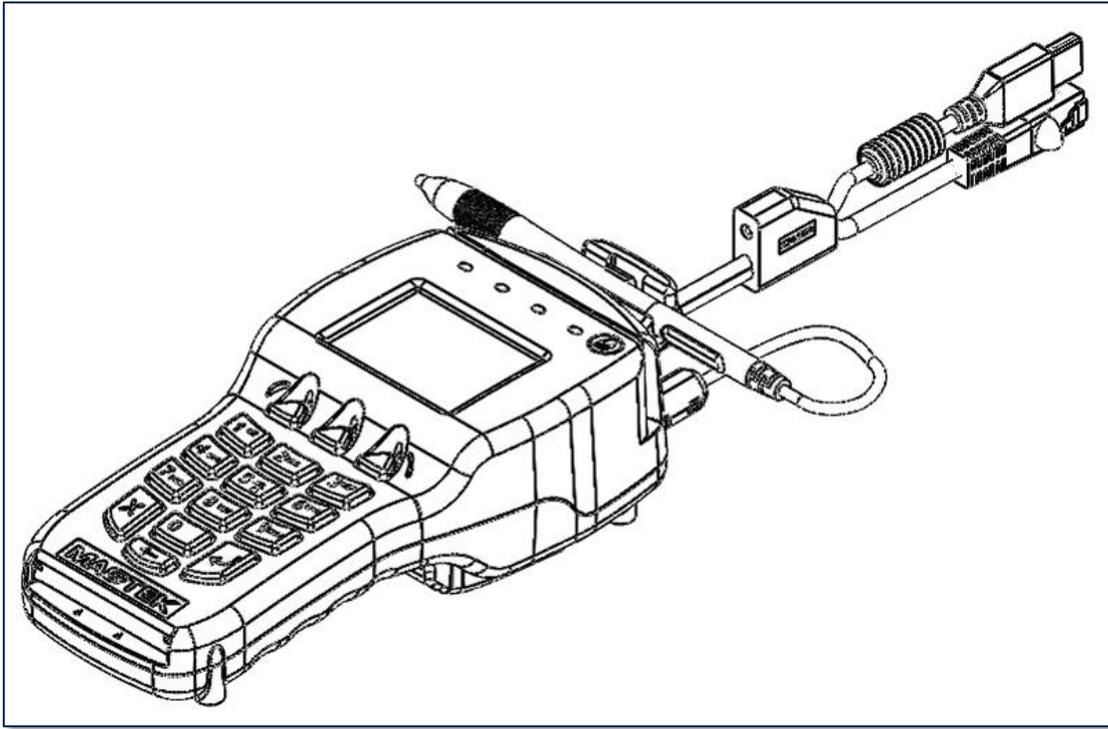
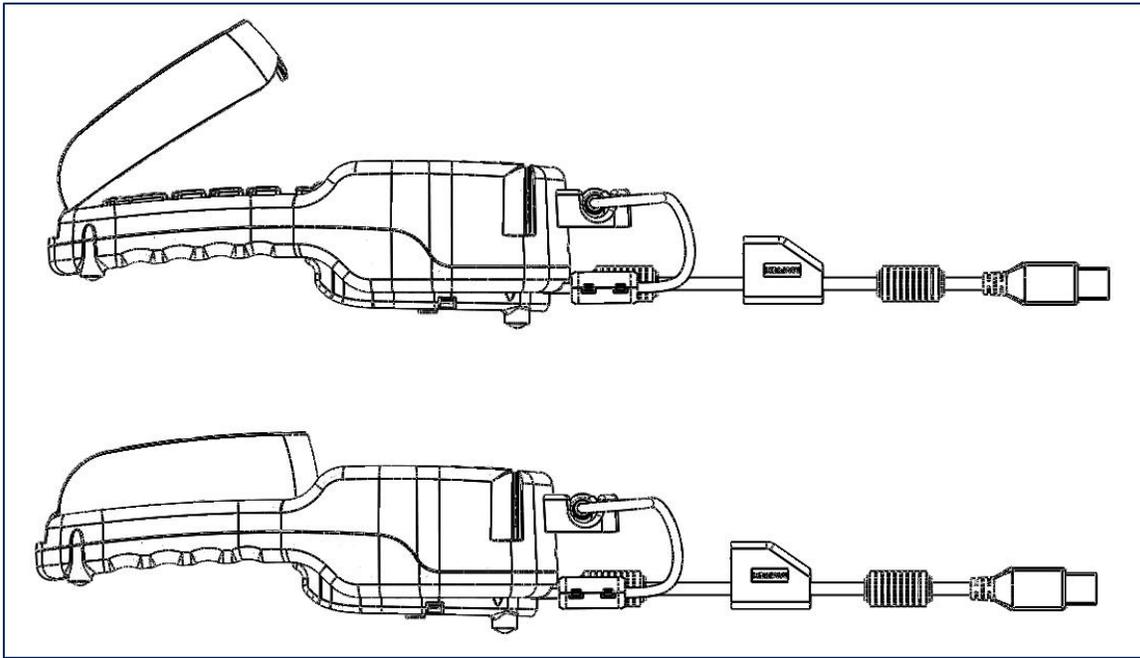


Figure 3-2 - Ethernet Interface

### 3.5 How to Install and Remove the Privacy Shield

To install the privacy shield, follow these steps:

- 1) Place the clips of the open end of the Privacy Shield into the openings located just above the contact card slot, as shown in **Figure 3-3**.
- 2) Pivot the shield down, locking the three clips into the holes located just above the function buttons.



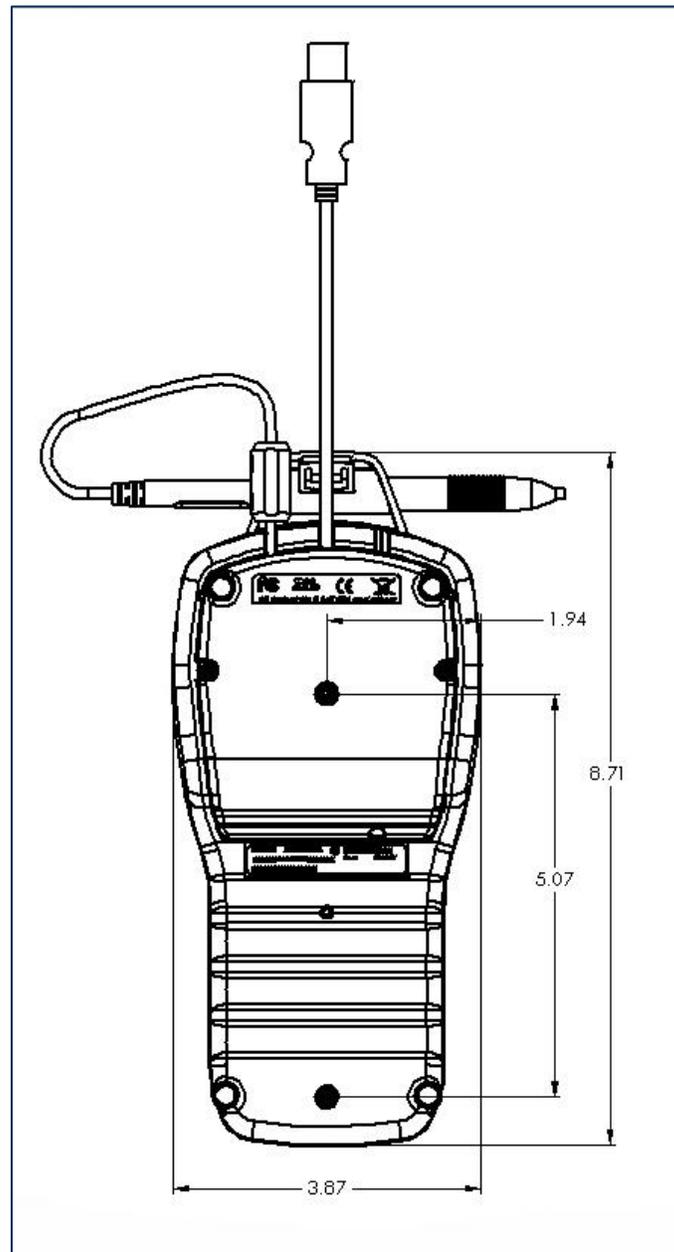
**Figure 3-3 - Installing the Privacy Shield**

To remove the privacy shield, follow these steps:

- 1) Slowly lift the edge of the privacy shield closest to DynaPro's display.
- 2) Pivot the shield up to a 45 degree angle.
- 3) Remove the shield.

### 3.6 About Mounting

The overall dimensions of the device and the mounting hole locations are shown in **Figure 3-4**. Mounting DynaPro to a surface requires size #4-40 screws.



**Figure 3-4 - Mounting Dimensions and Cable Access Hole (inches, +/- 0.02 in.)**

### 3.7 About the RJ-25 6-pin Connector

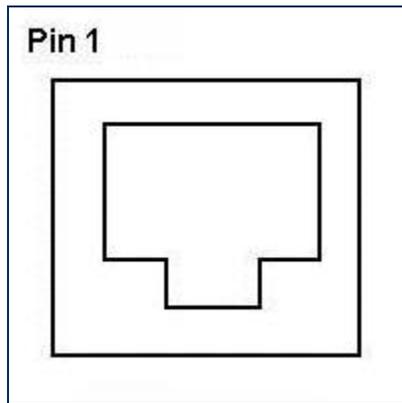


Figure 3-5 - RJ25 6-Pin Connector

RJ25 Connector Pin	Signal
1	VBUS
2	USB_DM
3	USB_DP
4	GND
5	NC
6	CGND

## 4 Configuration

The device has many commands the host software can use to change and monitor its behavior. They are documented in detail in *D99875585 DYNAPRO PROGRAMMER'S MANUAL (COMMANDS)*.

In addition, when the device is on the **Welcome** page or showing an error message, operators can view or change some configuration options using the keypad and display. **Table 4-1** lists these features.

**Table 4-1 - Keypad Configuration Features**

Operation	Key Sequence	Notes
Change display brightness	<b>Left Function Key</b> 5 2 3 <b>Right Function Key</b>	See section <b>4.1 How to Configure the Display Brightness</b> .
Change network configuration	<b>Left Function Key</b> 2 4 7 <b>Right Function Key</b>	See section <b>4.2 How to Configure Ethernet Settings</b> .
Show EMV details	<b>Left Function Key</b> 7 8 3 <b>Right Function Key</b>	Displays a page showing information about the EMV functions of the device.
Show network configuration	<b>Left Function Key</b> 2 4 8 <b>Right Function Key</b>	Displays a page showing the device's network configuration.
Show MAC address	<b>Left Function Key</b> 6 2 2 <b>Right Function Key</b>	Displays a page showing the device's MAC address.
Show IP address	<b>Left Function Key</b> 4 7 2 <b>Right Function Key</b>	Displays a page showing the device's current IP address.
Show Ethernet firmware number	<b>Left Function Key</b> 3 9 8 <b>Right Function Key</b>	Displays a page showing the device's Ethernet module firmware part number and revision number.

### 4.1 How to Configure the Display Brightness

To adjust the device's display brightness or contrast, press **Left Function Key 5 2 3 Right Function Key** (the numbers 523 correspond to the letters "LCD") to show the **Adjust LCD** page. Press **1** to decrease the brightness or **3** to increase the brightness. To exit and apply the selected brightness setting, press the green arrow key.

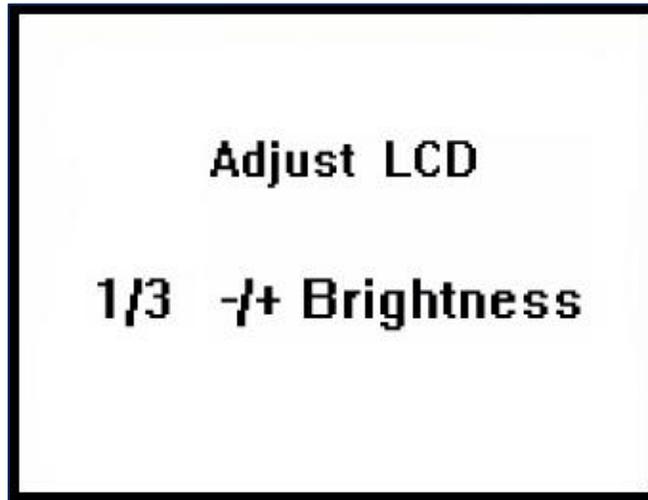


Figure 4-1 - Adjusting DynaPro's Display Brightness

### 4.2 How to Configure Ethernet Settings

The device's Ethernet port is equipped with Auto-MDX, which allows it to automatically detect and adapt to being connected using either straight-through or crossover Ethernet cables.

When the device is connected to the host via Ethernet, on power-up the device attempts to contact a DHCP server to acquire a dynamic IP address. If the device is configured to use a static IP address, it uses its preconfigured IP address instead.

If the device fails to obtain an IP address from a DHCP server, the device assigns itself a link-local IP address using APIPA (also known as auto-IP). To find the link-local address, you can use a utility program such as *finder.exe* (supplied by Texas Instruments).

The default port for the host to communicate with the device via the network is **port 26**.

On some devices, network functionality and the following network-related keypad commands are only enabled when the device's USB cable is not connected.

To show the **MAC address** of the device, press keypad buttons **Left function key** **6** **2** **2** **Right function key**.

To show the current **IP address** of the device, press keypad buttons **Left function key**, **4** **7** **2** **Right function key**.

To show the device's **Ethernet module firmware** part number and revision number, press keypad buttons **Left function key** **3** **9** **8** **Right function key**.

To show the device's **network configuration** information such as mode (DHCP/Static), IP address, subnet mask, and default gateway, press keypad buttons **Left function key** **2** **4** **8** **Right function key**.

To **change** the device's network configuration, such as mode (DHCP/Static), IP address, subnet mask, and default gateway, press keypad buttons **Left function key** **2** **4** **7** **Right function key**, then follow the on-screen instructions.

## 5 Operation

### 5.1 Operation Overview

#### NOTICE

**Messages shown on DynaPro's display are customized by the host software developer; therefore, the sequence and content of prompts on the display may vary depending on the requirements of the institution, and may not correspond to the example messages shown here. Consult appropriate personnel if there are any questions about the prompts or any part of the operation.**

When DynaPro is ready to begin a new transaction, it shows **Welcome** on the display.



**Figure 5-1 - Example of Welcome Page (Ready for a New Transaction)**

During normal operation, the operator initiates a transaction from the host, and the cardholder enters data on the device's keypad in response to prompts on its display. Transaction types may include new accounts, teller window applications, checking, savings, mortgages, retail transactions, or any other type of transaction where there is interaction between the cardholder and the operator.

For each transaction type, the host software can direct the device to prompt the cardholder for any combination of magnetic stripe swipe, EMV contact card insertion, and/or contactless payment tap, and the transaction flow on the device may differ depending on what the host software specifies and what the cardholder does. Section **5.3 Card Reading** provides examples of the cardholder experience for each type of payment.

If the device can not read payment data, it may request the cardholder repeat the action, or request the cardholder revert to a different form of payment (such as using the magnetic stripe reader instead of the chip card slot, or entering card data manually). The device may also prompt the cardholder to identify the card type, such as debit or credit. If the transaction requires a PIN (such as in banking or debit card transactions), the device prompts the cardholder to enter one. DynaPro models with signature capture capability may also prompt the cardholder to sign on the touchscreen. For details, see the following sections on Card Reading, Manual Card Entry, PIN Entry, and Signature Capture.

## 5.2 How to Read Device Status

Generally when the device is ready for a transaction, it shows the **Welcome** page. The device may show text other than “Welcome” under certain conditions:

- **No Host Connection** instead of “Welcome” means the device is not yet connected to a host.
- **Device Offline** instead of “Welcome” means the device is not ready for normal operation. When this occurs, the display shows a reason code in the lower right corner. Codes that start with **C**, **H**, **K**, or **S** indicate a problem that requires the device be returned to the supplier for service or replacement. **Table 5-1** provides full explanations of the prefixes of all **OFFLINE** codes. *D99875585 DYNAPRO PROGRAMMER'S MANUAL (COMMANDS)* provides detailed explanations of every individual numerical code, geared toward solution designers.

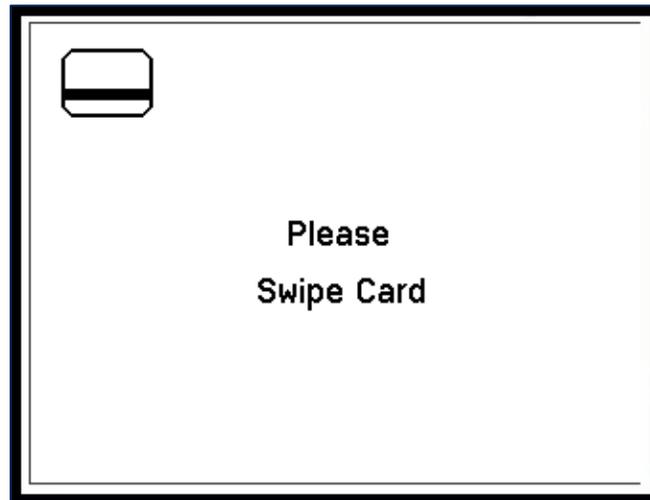
**Table 5-1 - Device Offline Code Prefixes**

Code Type	Description
A	An offline code beginning with <b>A</b> indicates the device is awaiting authentication. This is a normal condition when a device configured to require authentication (Security Level 4). Authentication by the host software is required to return it to the <b>Welcome</b> page.
C	An offline code beginning with <b>C</b> indicates the device is missing a certificate. MagTek recommends the device should be repaired or replaced.
H	An offline code beginning with <b>H</b> indicates there is a hardware problem with the device. MagTek recommends the device should be repaired or replaced.
K	An offline code beginning with <b>K</b> indicates a problem with either the MSR or PIN key. If it is a new device, it is likely due to the PIN Key not being loaded. A new device showing this code should be returned to the supplier for Key loading. If the code appears after being deployed and used for a long period of time, this code would be presented if one or both DUKPT keys have been exhausted. Contact the supplier for a replacement.
S	An offline code beginning with <b>S</b> indicates a security element failure. This code can be triggered through severe handling of the device or strong interference by a nearby EMF source. If you move the device away from any suspected EMF source and the error continues, the device should be repaired or replaced.

## 5.3 Card Reading

### 5.3.1 How to Swipe Magnetic Stripe Cards

When the appropriate prompt appears (see **Figure 5-2** for an example), swipe the card with the magnetic stripe down and facing toward DynaPro's keypad as shown in **Figure 5-2**. If the magnetic stripe data can not be read, the host software may prompt the cardholder to swipe the card again.



**Figure 5-2 - Example of Swipe Card Page**

### 5.3.2 How to Insert Contact Chip Cards

An EMV transaction is started by the host sending an amount to be approved by a cardholder, as shown in section **5.4 How to Verify the Transaction Amount**.

After the cardholder accepts the amount, the device prompts the cardholder to insert a chip card by showing:



**Figure 5-3 - Example of EMV Chip Card Insertion**

When the appropriate prompt appears (see **Figure 5-3** for an example), insert the card with the contacts facing up and the magnetic stripe facing down, as shown in **Figure 5-3**. The display shows

**Processing.** If the chip card data could not be read, the device may prompt the cardholder to insert the card again.

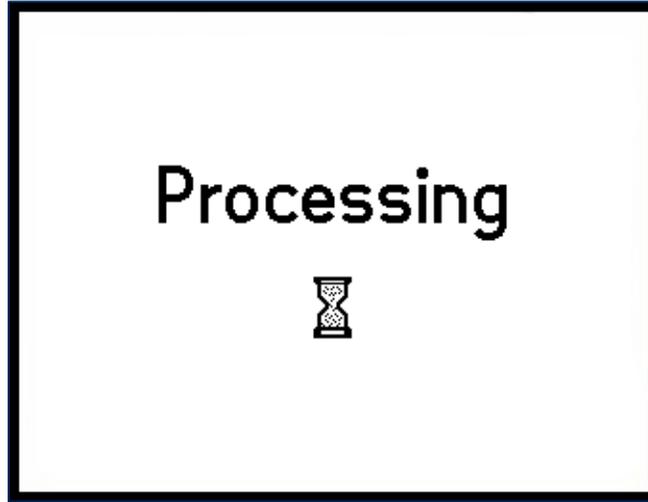


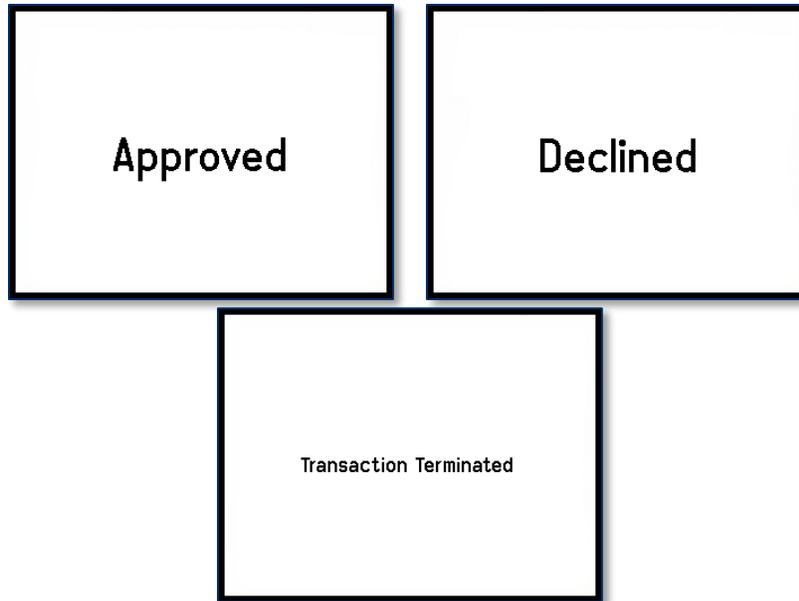
Figure 5-4 - Processing Page

Depending on the requirements of the chip card, the device may ask for a signature or PIN. If PIN entry is required, the device asks the cardholder to enter a PIN:



Figure 5-5 - Example of Enter PIN Page for EMV Transactions

Processing continues, after which DynaPro shows the outcome: Whether the transaction is APPROVED, DECLINED or TERMINATED.



**Figure 5-6 - Examples of Pages Approved, Declined or Terminated**

Transaction data is sent to the host, and as the last step of the EMV transaction process, DynaPro asks the cardholder to remove the chip card by displaying:



**Figure 5-7 - Examples of Page Remove Card**

### 5.3.3 How to Enter Card Information Manually

If the swiped card's magnetic stripe is damaged or unreadable, the host software controlling DynaPro may prompt the cardholder to manually enter card information, as shown in the following example:



Figure 5-8 - Example Page to Manually Enter Card Data

The account number field can be configured with a minimum of 9 and a maximum of 19 digits, or a minimum of 14 and a maximum of 21 digits. Expiration date consists of 4 digits. The card verification code can be 3 to 4 digits long.

### 5.4 How to Verify the Transaction Amount

In a retail setting when the customer selects "Credit" they are then prompted to verify the amount of the transaction. The customer can select "Yes" or "No" as shown in the following example:

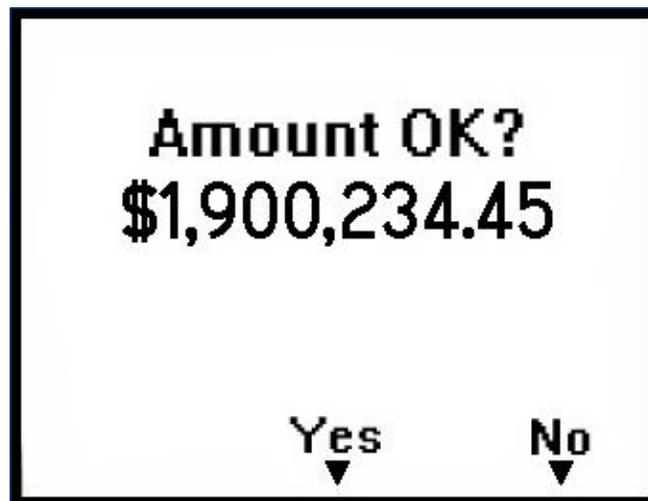


Figure 5-9 - Example of Page to Verify Amount

### 5.5 How to Select the Card Type

In a retail setting, the transaction might require the cardholder to select the card type (e.g. “Debit or Credit”). In the following example, the device prompts the cardholder to press the Left function key if the card is a Credit card or to press the Right function key if the card is a Debit card:

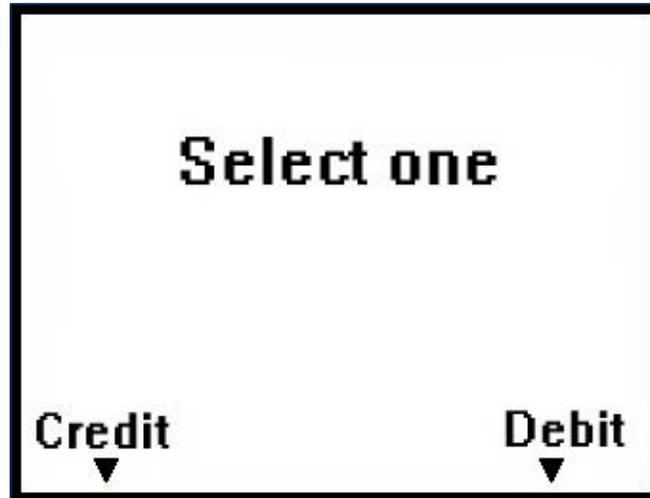


Figure 5-10 - Example of Page to Select Card Type

### 5.6 How to Enter PINs

When PIN entry is required, the display prompts the cardholder to enter a PIN (the PIN field has a minimum of 4 and a maximum of 12 digits) as required by the financial institution (see **Figure 5-11** for an example). After the cardholder has entered a PIN, the ENTER key must be pressed.

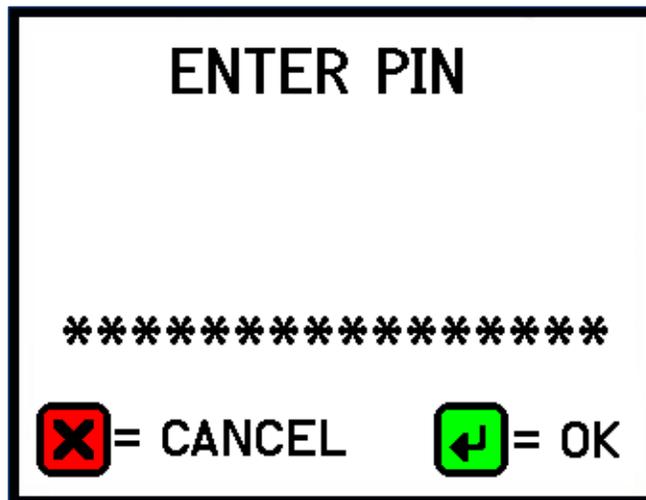
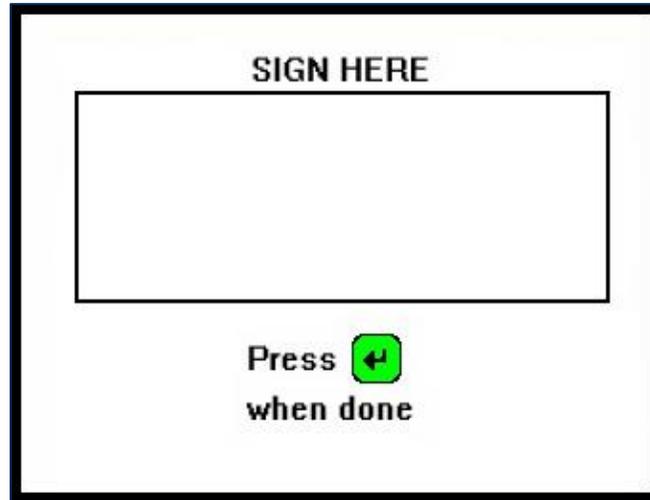


Figure 5-11 - Example of Page to Enter PIN

If the double PIN entry option is enabled, the display prompts the cardholder to reenter his or her PIN for confirmation. The cardholder must repeat the above process and enter the correct PIN a second time, followed by the ENTER key.

## 5.7 How to Use Signature Capture

If your DynaPro has signature capture capability, the display prompts the cardholder to enter a signature to complete the transaction (see **Figure 5-12** for a sample display). After the cardholder has entered his or her signature, the ENTER key must be pressed.



**Figure 5-12 - Example of Page to Enter Signature**

## 6 Maintenance

### 6.1 Mechanical Maintenance



**Avoid excessive use of liquid cleaning products and do not attempt to clean the card path with any objects other than approved cleaning cards or compressed air.**

Periodic cleaning of DynaPro's exterior may be required. To clean the outside of DynaPro, wipe down the device with a soft, damp cloth and then wipe with a dry cloth.

### 6.2 Updates to Firmware, Documentation, Security Guidance

In addition to the security guidance in the product manuals, MagTek may provide updates to this document, as well as supplemental security guidance or notices regarding vulnerabilities, at [www.magtek.com](http://www.magtek.com). MagTek advises checking the product's home page periodically for the most up-to-date information.

Any firmware updates addressing product features, bugs, or security vulnerabilities are also posted to [www.magtek.com](http://www.magtek.com) or may be sent directly to affected customers.

## 7 Developing Custom Software

Custom host software can communicate with DynaPro using the same command set across all available connection types. The host must wrap device commands slightly differently depending on the connection type.

MagTek produces software development kits (SDKs) with API libraries that provide higher-level functions wrapped around the direct communication protocols like USB and TCP/IP. They also include sample code which the solution development team can compile to demonstrate and test the device, and copy / rewrite to jumpstart solution development. These libraries and sample code simplify the development of custom applications that use DynaPro Go:

- **99510124 DYNAPRO / DYNAPRO MINI / DYNAPRO GO SDK FOR IOS**
- **99510129 IPAD / DYNAPRO / DYNAPRO MINI / DYNAPRO GO SDK FOR ANDROID**
- **99510127 IPAD / DYNAPRO / DYNAPRO MINI / DYNAPRO GO SDK FOR WINDOWS**, which bundles libraries for C++, Java/Java Applets, Microsoft .NET, and Microsoft .NET PCL.

In addition to the SDK API libraries, custom software on any supported operating system can communicate directly with the device using the operating system's native USB, TCP/IP, or Bluetooth LE libraries. For more information about sending commands directly, see **D99875585 DYNAPRO PROGRAMMER'S MANUAL (COMMANDS)**.

For more information about developing custom applications that integrate with DynaPro Go, see the MagTek web site or contact your reseller or MagTek Support Services.

## Appendix A Technical Specifications

DynaPro Technical Specifications	
Reference Standards and Certifications	
ISO 7810 and ISO 7811, AAMVA TDEA (3DES)-CBC using DUKPT PCI PTS v3.x EMV ICC Specifications for Payment Systems Version 4.3 EMV Contactless Level 1 Book D v2.6 MCL v3.1.1 (formerly PayPass) payWave v2.2 Expresspay v3.1 D-PAS Terminal Payment Application v1.0 D-PAS Terminal Application Specification Bulletin CL TAS-001 v1.1 FCC Title 47 Part 15 Subclass C EMC UR/CUR UL Recognized CE (EN 300 328 v2.1.1, EN 300 330 v2.1.1, EN 301 489-17 v3.2.0, EN 301 489-1 v2.2.0, EN 61000-6-1 (2007), EN 61000-6-3(2007)+A1+C1) MasterCard TQM RoHS Compliant / California Proposition 65 WEEE (EU) USB 1.1, USB 2.0	
Physical Characteristics	
Dimensions (L x W x H):	8.8 in. x 3.9 in. x 2.4 in. (223.5mm x 99.1mm x 61.0mm)
Weight	1 lb.
Supported Mounting Options:	Countertop, fixed or free-standing
Card Read Characteristics	
Magnetic Stripe Reader:	Triple Track (TK1/2/3) encrypting reader with MagnePrint
Magnetic Swipe Speeds:	6 ips to 60 ips
EMV Contact Reader:	EMVCo Contact L1 and L2
EMV Contactless Reader:	EMVCo Contactless L1 D-PAS®, PayPass™/MCL, payWave®, Expresspay® Mobile wallets including but not limited to Apple Pay®, Google Pay, Samsung Pay®
User Interface Characteristics	
Status Indicators:	4 monochrome green LEDs for idle and contactless transaction status
Display Type:	Backlit color liquid crystal display (LCD)
Display Size (viewable area):	1.9 in. x 1.4 in. x (49mm x 37mm)
Display Resolution:	320 x 240 px

<b>DynaPro Technical Specifications</b>	
Signature Capture:	On selected models
Keypad:	16 Keys (3 Function Keys), raised marking, ADA compliant
<b>Electrical Characteristics</b>	
Power Inputs:	USB Powered (Power adapter required for contactless or Ethernet) RJ25 modular jack
Power Outputs:	Not Applicable
Battery Type:	Lithium
Battery Capacity:	Not Applicable
Battery Charge Time:	Not Applicable
Battery Time, Standby:	Not Applicable
Battery Time, Transactions:	Not Applicable
Voltage Requirements:	5VDC
Current Draw:	250mA 900mA when using contactless or Ethernet
Data Storage:	64 Mbit internal SDRAM 256 Mbit Flash
<b>Communication Characteristics</b>	
Wired Connection Types:	USB 2.0 (USB 1.1 compatible) and Ethernet Standard cable length 6 ft. (1.82 m)
Wireless Connection Types:	Not Applicable
Wireless Range:	Not Applicable
Wireless Frequency:	Not Applicable
<b>Software Characteristics</b>	
Tested Operating System(s):	USB: Windows 7, Windows 8 and 8.1, Windows 10, Android 4.4.2 and above on devices with USB On-the-Go support  Ethernet: Windows 7 SP1 and above, iOS 7.1 and above, Android 4.4.2 and above
<b>Environmental Tolerance</b>	
Ingress Protection:	Not Applicable
Operating Temperature:	32°F to 113°F (0°C to 45°C)
Operating Relative Humidity:	10% to 90% non-condensing
Storage Temperature:	14°F to 140°F (-10°C to 60°C)

<b>DynaPro Technical Specifications</b>	
Storage Relative Humidity:	Up to 90% non-condensing
Vibration Resistance:	Not Applicable
Shock Resistance:	Not Applicable
ESD Tolerance (FCC/CE):	±4kV contact discharge / ±8kV air discharge when properly grounded
Vapor Resistance:	Not Applicable
<b>Reliability</b>	
Magnetic Read Head Life:	1,000,000 card swipes (equivalent to 5 years of operation)
ICC Read Head Life:	500,000 card insertions
Battery Shelf Life:	5 years coin cell backup over device lifetime
Battery Cycle Life:	Not Applicable