



Restaurant Enterprise Series

Version 3.1

North American Liquor Dispensing Configuration and Interface Guide

About This Document

The North American Liquor Dispensing System (NALDS) Configuration and Interface Guide provides information on configuring NALDS on a 3700 system and provides the information necessary for a communications interface to be developed between an NALDS and the 3700 system.

Note *RES 3000 version 3.1 or higher is required to use NALDS.*

General Information

Your Guide to Getting Information on Software Installation

For information on installing RES software, including site requirements and installation tips, refer to *Restaurant Enterprise Series, Version 3.1 (RES 3000) Setup Instructions*. You can access this document directly from the CD by opening the ressetup.pdf file. You can also access this file through the Windows[®] *Start* menu by selecting *MICROS Applications / MICROS Documentation / ReadMe First / RES Setup / Version 3.1 Installation Guide*.

NALDS Overview

The 3700 North American Liquor Dispensing System (NALDS) Interface allows the 3700 system to receive sales postings from a Liquor Dispensing System (LDS). The LDS Interface also integrates the LDS control features with the point-of-sale system's controls.

An LDS is a non-MICROS hardware device that records each drink as it is poured at a bar and posts that sale directly to a 3700 transaction. Together, the LDS interface and 3700 provide improved accountability and control over liquor sales.

When implemented properly, the NALDS interface restricts liquor dispensing by preventing the LDS from pouring a drink until the 3700 has acknowledged receipt of the pour information and can guarantee that it will be posted to a transaction.

Note *Two different types of LDS Interface are available. The NALDS interface is primarily intended for use in North America, where tightly restricted liquor dispensing is usually desired. The International version is intended for operations in which operational flexibility is of greater concern. Refer to the RES 3700 POS System v2.60 ReadMe First for information on the International Liquor Dispensing System.*

NALDS Messages

The following messages can be sent from the NALDS device to the 3700 System:

Pour Request

When the 3700 POS Operations (OPS) module receives a Pour Request, it will treat it as a menu item NLU key entry. It uses the NLU number in the message and the LDS NLU Group field to order the menu item.

If the Main and Sub Menu Level fields in the Pour Request are 0, the current menu levels will be used. However, if they are non-zero, the menu level in the message will be used to order this item without affecting the current menu level. See “Message Types and Data Formats” on page 18.

Next Order

The Next Order message is sent by the LDS to POS Operations to indicate that the user is about to start pouring a drink. When POS Operations receives a Next Order message, it will execute keyboard macro #200. A Macro must be defined for this message type. See Macros on page 7 for information on configuring the Next Order macro.

End of Pour Session

When POS Operations receives an End of Pour Session message, it will execute keyboard macro #201. A Macro must be defined for this message type. See Macros on page 7 for information on configuring the End of Pour Session macro.

Note *The NALDS interface is supported while running in Backup Server Mode.*

Configuring NALDS

Overview

This section provides a summary of the 3700 programming required to enable the North American LDS (NALDS) feature. There are also examples of how this interface may be used in a bar environment. Refer to “Using NALDS” on page 8.

Hardware Configuration

The NALDS interface requires a connection between a POS client and the LDS via an RS232 interface. The interface supports a range of transmission speeds and uses an ASCII error-detecting protocol.

Confidence Test

The MICROS Confidence Test is available to help you develop and test your LDS interface. The Confidence Test operates in Diagnostics Mode without POS Operations being active. Therefore, you can hook up your LDS to the Workstation, send pour requests, and respond with ACK, WACK, or NAK characters that test your interface.

Once the interface is ready to be tested:

1. Connect the correct interface cable between the LDS and Workstation. Refer to the cable diagram on page 12.
2. Power up the LDS.
3. Power up the Workstation and start the Micros Confidence Test.
4. From the Micros Confidence Test, set the COM port settings to the recommended defaults:

Com Port:	1
Baud:	9600
Parity:	E
Data Bits:	7
Stop Bits:	1

Note *Any changes made to the Com Port settings will not be saved. These settings must be configured in POS Configurator / Devices / User Workstations / Peripherals.*

5. Select the Set Ready for Pour button to initialize the NALDS interface to accept messages from the NALDS.

Testing NAK

6. Set the Next Message Response to NAK.
7. At the LDS, send a Pour Request.
8. From the Micros Confidence Test, verify the status fields (NALDS Command, Message Seq #, Main Level, Sub Level, and NLU).

Testing ACK

9. Set the Next Message Response to ACK, which allows the LDS device to pour.
10. Enter the Access Code for ACK that will allow the NALDS device to pour.

Note *Use the random number that appears above the Enter Access Code box to calculate the access code number. (1st digit x 2nd digit + 4th digit + 6th digit. For example, if the number is 123456, the access code is 12 (1 x 2 + 4 + 6).*

11. At the LDS, send a Pour Request.
12. From the Micros Confidence Test, verify the status fields (NALDS Command, Message Seq #, Main Level, Sub Level, and NLU).

Testing Set Not Ready for Pour (WACK)

13. Select the Set Not Ready for Pour button, which sets the Next Message Response to WACK.

14. At the LDS, send a Pour Request.
15. From the Micros Confidence Test, verify the status fields (NALDS Command, Message Seq #, Main Level, Sub Level, and NLU).

POS Configurator Programming

Complete the following steps in POS Configurator to enable NALDS:

1. Go to **System | Restaurant | NLU Groups**. Set the LDS NLU field to define a system-wide LDS NLU group number to link LDS items with specific menu items.
2. Go to **Devices | Network Node | Com Ports**. Configure the com port settings for each POS client that has an NALDS device attached. These com port settings are defined by the NALDS manufacturer and are typically:

Baud Rate	9600
Parity Type	Even
Num Data Bits	7
Num Stop Bits	1

3. Go to **Devices | User Workstations | Peripherals**. Set the Peripheral Type to NALDS for the workstation in which the LDS device is connected.
4. Go to **Sales | Menu Items**. Set the NLU Group field to assign the system-wide NLU group number to each menu item programmed as an LDS item. Assign the NLU Group number to the same setting as the LDS field in **System | Restaurant**. This value can be no longer than four digits.
5. Go to **Sales | Menu Items**. Assign a unique NLU number in the NLU field for each menu item.

6. **(Optional)** Go to **Devices | User Workstations | Options**. Set the Begin check with operator ID option to begin a check automatically if an employee (e.g., bartender) is currently signed on and another employee swipes a magnetic card through the reader, or manually enters the ID#.
7. **(Optional)** Go to **Revenue Center | RVC Transactions**. Set the Allow fast transactions option if the Pour Request should initiate a Fast Transaction.
8. **(Optional)** Go to **Revenue Center | RVC Transactions**. Set the Allow fast transaction service total option to allow employees to convert a fast transaction to a guest check transaction by pressing a [Service Total] key.
9. **(Optional)** Go to **Employees | Employee Classes | Transactions**. Set the Void LDS Items option if the employee is privileged to void LDS items.
10. **(Optional)** Go to **System | Macros**. Configure the following macros:

Next Order - Macro #200

End of Pour Session - Macro #201

These Macros are reserved for use with the NALDS interface. Typically, these Macros are not assigned to touchscreens. To further speed bar operations, we recommend that you define the Macros as follows if sending the Next Order and End of Pour Session messages to the POS system:

Define Macro #200 as:	Define Macro #201 as:
Seat Filter key	Cash key
Service Total key (Print Memo Check)	
Next Seat key	

Using NALDS

We have provided several basic configurations for the NALDS. They are described in the following table:

Application	Description	Operation
1. Dedicated Bartender Workstation	Each bartender is assigned to a Workstation that has the task of handling checks controlled by the bartender.	The control of the drinks (LDS) is in close proximity to the control of the payments (POS), and the same person is responsible for both pouring drinks and performing all transactions at the Workstation.
2. Dedicated Bartender Workstation/ Check Employee ID Required	Each bartender is assigned to a Workstation, but when a server wants to place a drink order, the Check Employee's ID is required before the bartender can pour a drink.	If the <i>Devices / User Workstation / Table View / Reserved06 (Automatically begin check when check employee ID# entered outside of transaction)</i> option is enabled, when the server signs in using a remote magnetic stripe reader or manually enters the ID#, a check is automatically begun. Then, the bartender is allowed to pour the first drink.

Application	Description	Operation
3. Memo Checks to Generate Separate Receipts	In this scenario, the employee pays for several orders from a table, for example, and pays for all orders together, but each customer at the table requires a separate customer receipt.	At the end of the first order, the bartender sends a Next Order message that causes Macro #200 to automatically print a memo check for the first order and to increment the seat number. At the end of the second order, the bartender sends the Next Order message again and another memo check prints. When the last order is posted, the bartender sends the End of Pour Session message, which causes Macro #201 to close the transaction to cash, which can optionally print a customer receipt with the total amount to be collected by the server.
4. Bartender Picks Up Server Check	In this mode, a bartender picks up prechecks begun by servers at other workstations.	(1) A server creates a precheck at a designated Workstation, which may not be near the bar. (2) The bartender picks up the server's check, becoming the Check Employee, and pours the first drink.

NALDS Interface Specification

Purpose

This section provides the information necessary to develop a communications interface between a Liquor Dispensing System (LDS) and the 3700 POS for the purpose of transmitting data between the 3700 system and the LDS.

Features

RS-232 Interface

The North American LDS interface (NALDS) requires you to connect a PCWS directly to the LDS system via an RS232 interface.

An RS232 interface is provided to support the entry of LDS pour and sales information directly into the POS system. The interface supports a range of transmission speeds and uses an ASCII error-detecting protocol.

Message Types

The LDS interface supports the following types of messages:

- ♦ **A Pour Request.** This type is used by the LDS to request the pouring of a drink. The POS system acknowledges the request and, at the same time, enters the drink in its current transaction. In other words, the 3700 System either adds the drink to the current check or, if permitted, begins a fast transaction and posts the drink to the new check.
- ♦ **A Direction to Start the Next Order and to End the Pour Session.** These two types can be used with a 3700 Macro to speed up operations at the bar. This allows the bartender to begin a new order and to close one order or a group of orders without leaving the pour station. The Next Order facility is especially useful when the bartender is accepting a group of orders from a server. The POS can be setup to print a separate check or customer receipt for each order and also group all the orders together, so that the server can close them as a single order.

- ◆ **An Interface Health Check.** This type provides confirmation that the UWS is powered-on and on-line.

Diagnostics

From the PCWS, you can run a diagnostics test on your LDS interface using the Confidence Test. The use of the Confidence Test to check the LDS device is described in detail in “Confidence Test” on page 4.

Communications

Transmission Characteristics

Transmission Mode

The transmission format over the interface is asynchronous, RS232 serial binary, and the transmission mode is half duplex.

Character Format

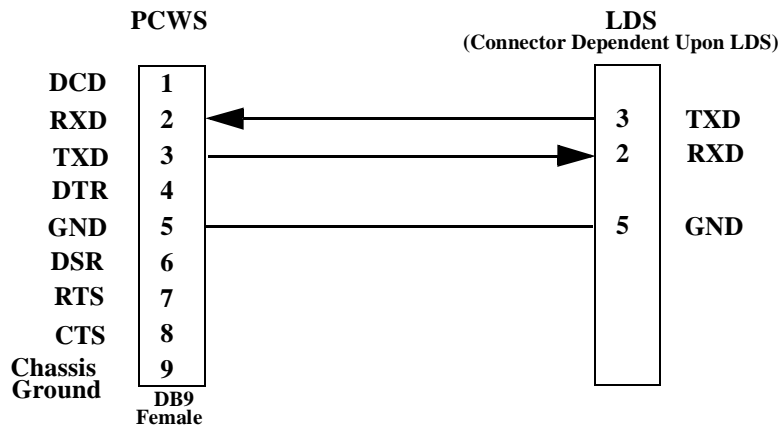
The transmission format is fixed at 1 start bit, 7 bits per character, even parity, with 1 stop bit.

Line Speed

The line speed can be configured to be 1200, 2400, 4800, or 9600 baud.

Cables

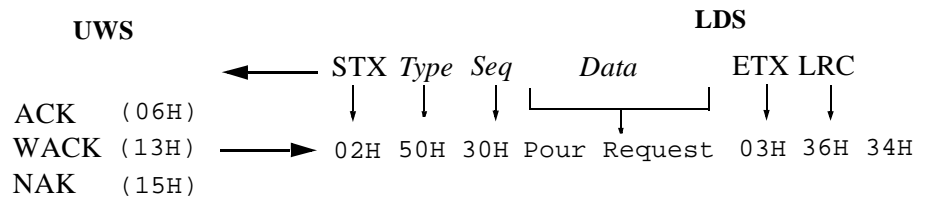
The MICROS PCWS and LDS communicate using a standard EIA RS232 interface. The connector configuration comprises a 9-pin D-Type female connector that uses Receive, Transmit, and Ground signals. The cable pin wiring is depicted below.



Protocol

Message Formats

Messages are initiated by the LDS and acknowledged by the MICROS Workstation. The dialogue is illustrated in the diagram shown below.



The LDS message comprises the elements provided in the following table:

Element	Syntax	ASCII	Description
Start of Text	STX	02H	The STX control character is used to indicate the start of a message. When the Workstation receives this character, it assumes that it is receiving a new message.
Message Type	P N E H	50H 4EH 45H 48H	The message type comprises a single ASCII character that indicates one of the four message types (e.g., P is a pour request message type). See “Message Types and Data Formats” on page 18.

Element	Syntax	ASCII	Description
Sequence Number	0 - 9	30H - 39H	The sequence number is used by the Workstation to detect retransmissions. This detection mechanism prevents a single pour from being entered more than once in the transaction. If the Workstation receives two messages with the same sequence number back to back, it will acknowledge the second but the LDS will not post the second pour to the transaction. The 0 sequence number is a special case since the LDS should always start with this number after a power-up, or initialization. The LDS should always post a pour with the sequence number 0. The LDS increments the sequence number with each new message; when 9 is reached, the sequence number rolls back to 1. When the Workstation powers up or resets, it will accept the first sequence number it receives, and post the pour to the current transaction.
Data	Variable	Variable	The data portion of the message contains ASCII characters and depends upon the message type. See "Message Types and Data Formats" on page 18.

Element	Syntax	ASCII	Description
End of Text	ETX	03H	The ETX control character is used to indicate the end of the message. When the Workstation receives the ETX, it expects the two LRC characters to follow.
Longitudinal Redundancy Check	LRC	30H-39H 41H-46H	The LRC comprises two ASCII hexadecimal characters (30H-39H or 41H-46H) that provide a message integrity check. The LRC is computed by initially setting it to zero and performing an Exclusive Or (XOR) of all the characters in the message except the STX character and the LRC characters themselves. This hexadecimal value is then converted into two ASCII hexadecimal characters; the most significant of the two will be sent first. This conversion process maintains STX and ETX uniqueness within the message.

Link Control Characters

The control characters in the table below are transmitted by the message recipient (Workstation) to inform the sender (LDS) that the message was received or did not satisfy the transmission protocol requirements due to **framing, parity, overrun, or checksum** errors.

Element	Syntax	ASCII	Description
Acknowledgment	ACK	06H	The ACK control character is sent by the MICROS Workstation when it receives an LDS message correctly and it can execute the LDS request or direction. If the LDS receives an ACK response to a pour request message, it pours the drink.
Wait Acknowledgment	WACK	13H	The WACK control character is sent by the MICROS Workstation when it receives an LDS message correctly, but it cannot execute the LDS request or direction. The Workstation will return a WACK when the system cannot post the drink requested—for example, if the bartender is not yet signed in.
Non-acknowledgment	NAK	15H	The NAK control character is sent by the MICROS Workstation when it receives a message with an LRC, parity, framing, or overrun error. The LDS should retransmit the message using the same sequence number as before. The LDS should drop the message and display an error after it has been retransmitted three times. If the Workstation receives a message which has no STX, or is otherwise unintelligible, it will not respond with a NAK. The LDS is responsible for detecting this type of situation.

Response and Timeout Considerations

The MICROS Workstation will respond within 100ms (and typically within 50ms) of receiving a message. If the LDS does not receive a response within one second, it should retransmit the message using the same sequence number as before. The LDS can continue to retransmit an arbitrary number of times until it alerts the operator of an error condition; we recommend that you specify between 500ms and 1 second. In addition, the LDS must maintain a copy of the message until it receives an ACK or WACK response in order not to increment the sequence number and send a new message before a successful transmission of the previous message.

Message Types and Data Formats

The LDS interface supports the following message types:

Type	Syntax	ASCII
Pour Request	P	50H
Next Order	N	4EH
End of Pour Session	E	45H
Health Check	H	48H

Pour Request

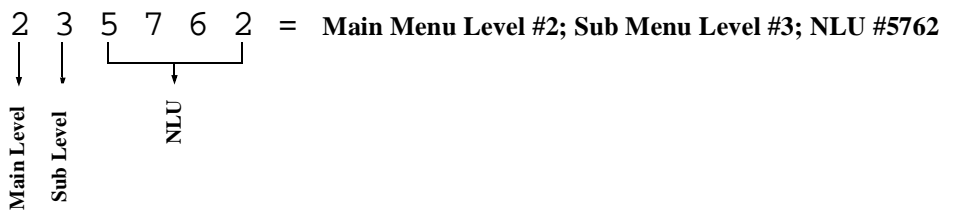
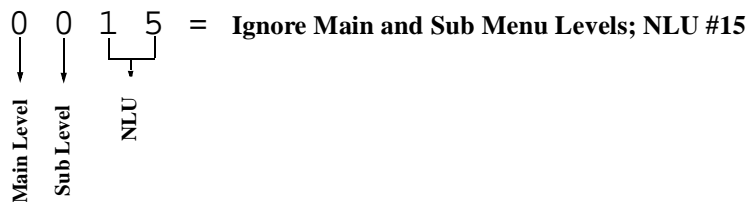
This message is sent by the LDS to the MICROS Workstation to request a drink-pour. The data format of the pour request message is as follows:

MainMenuLevel *SubMenuLevel* *NumberLookup*

Element	Syntax	Field Length	# of ASCII Digits	Description
<i>MainMenuLevel</i>	0-10	Fixed	1	Both fields may be used to select different pricing structures. This may be used to price different size drinks or to implement different pricing periods (happy hour or late evening). Main and sub menu levels may be ignored by setting either or both fields to 0 (ASCII 30H), causing the 3700 System to default to the current main and sub menu levels. The MICROS 3700 supports ten independent main menu levels and ten independent sub menu levels.
<i>SubMenuLevel</i>	0-10	Fixed	1	

Element	Syntax	Field Length	# of ASCII Digits	Description
<i>NumberLookup</i>	0 - 9	Variable	1 -12	The Number Lookup (NLU) field is used to select the appropriate menu item. The NLU may be used with the menu level to select different menu items or menu item prices; consequently, a single NLU may specify up to 20 different prices (10 main levels and 10 sub levels). Alternatively, main and sub menu levels may be ignored, and separate NLU categories may be used. (The 3700 supports 64 NLU categories—each with its own NLUs.) The LDS vendor may specify this operation.

Examples:



The MICROS Workstation responds with an ACK if the message is received correctly and the drink is entered in the current transaction. If the message is received correctly but the MICROS POS system cannot post the drink (usually because the Workstation is not in a transaction), the MICROS Workstation will respond with a WACK. If the message is received in error, the MICROS Workstation will return a NAK.

Next Order

This message may be sent by the LDS to the MICROS POS to indicate that the bartender is about to start pouring a new order. The MICROS POS may optionally print a customer receipt or check associated with the previous order and increment the order number. The MICROS POS system always responds with WACK, ACK or NAK, depending on whether or not the message is received correctly. After the MICROS Workstation responds to the message, it may ignore it if the message is inappropriate for the current transaction context. There is no data element for this message type.

End of Pour Session

This message may be sent by the LDS to the MICROS POS to indicate that the bartender has finished a pour session. The MICROS POS can optionally close the transaction to cash, and the transaction can comprise multiple orders. The MICROS POS always responds with a WACK, ACK, or NAK, depending on whether or not the message is received correctly. After responding to this message, the POS can ignore it if this message is inappropriate for the current transaction context. There is no data element for this message type.

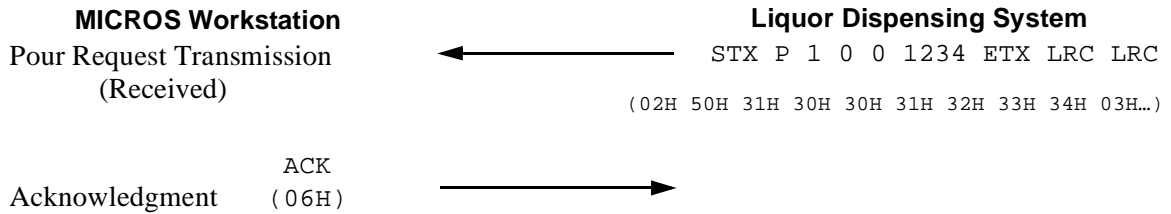
Health Check

This message may be used by the LDS to determine if the MICROS Workstation is correctly connected and on-line. The MICROS POS will respond with an ACK or NAK, depending on whether or not the message is received correctly. There is no data element for this message type.

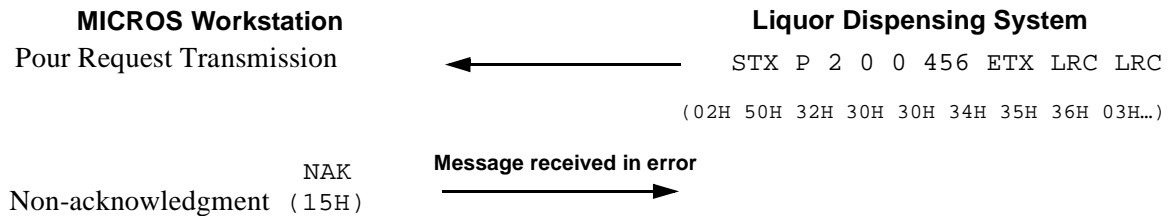
Transmission Examples

This section provides transmission examples using the Pour Request message type:

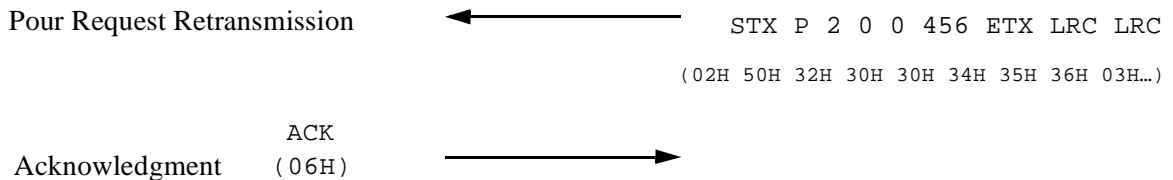
Example 1:



Example 2:



Note: Message retransmitted with same sequence number.



Example 3:

