When using Firmware Revision 10.01 and above, AccuLoad III offers a card reader interface. The card reader is linked to the AccuLoad via communications. The AccuLoad communicates with the card reader and can relay both the card status and the card data to an automation system. The card data is archived with the transaction and is available for printing on the transaction report.

The Smith Card Reader is a proximity card reader. The reader can be mounted directly to the front of a NEMA-IV AccuLoad III or the MMI of the AccuLoad III Split Architecture. The interface for the split architecture is addressed following the standard AccuLoad application.

AccuLoad III is also capable of storing a database of valid cards. These can be entered via AccuMate or downloaded from an automation system. A diagnostic is also available to allow the cards to be swiped at the card reader and stored in the AccuLoad's database. AccuLoad can then use this database to authorize a driver, if so programmed. This validation can occur all the time or only when the automation system is off-line.

Step 1: Set up a communications port for the card reader

Select a communications port for the card reader interface and set the corresponding system parameter (707, 712, 717, or 722) to Smith Card Reader. Next, set up the baud rate and data format for the communications port to match the settings of the card reader. The control for the port (710, 715, 720, or 725) should be set to 0, N/A.

Step 2: Set Up Timeout for Valid Card Data

System parameter 772 allows entry of the timeout period. Note this parameter is applicable only if parameter 773 is set "momentary". The timeout represents the period of time that the card data will remain valid with no transaction activity at the AccuLoad. Since the card reader is a proximity reader, there is no card present inherent in the reader. Therefore, the card data read will be considered viable for the length of this timeout. If a transaction is begun on any load arm before the timeout expires, then the card data will remain viable until there is no transaction in progress on any load arm of the AccuLoad. Note that during the timeout period, a new card will be accepted by the AccuLoad and will replace the previous card read. Once a transaction is in progress, new card data will be ignored.

Step 3: Determine the Use of the Card Data in the AccuLoad III

Set system parameter 771 according to how the card data is to be used in conjunction with the AccuLoad. Several options are available. Note that card data is archived with the transaction regardless of the option selected.

0 - ID Stamp only. The card data is saved with the transaction if a card was presented; however, the driver is not prompted to card in nor is a card-in required.

1 - ID Stamp + Card In Required. The driver is presented with a "Please Card In" prompt, rather than "Press SET Key." Carding in is required before loading can proceed, but the card data is not compared with a database in the AccuLoad.

2 - Validate in Standalone / Standby Mode Only. This option allows the AccuLoad to validate cards only when the automation system is off-line. When the automation system is controlling the loading process, the AccuLoad will accept card data and archive it with the transaction, but will not require card-in nor attempt to validate the card data. Thus, when under automation control, the AccuLoad will respond as though the "ID Stamp Only" option were selected. When the AccuLoad goes into Standby mode (as a result of the automation system going off-line and the timeout expiring on the AccuLoad), carding in will be required and loading will be prevented if the card data does not match one of the entries in the card database in the AccuLoad. If a card is recognized by the card reader but cannot be validated by the AccuLoad (not in the database), the AccuLoad will display "Invalid Card" and presetting will not be permitted. This selection is designed for installations that impose the card validation function on the host system, but still maintain the security of card validation if the host goes offline. If no communications port is configured for either remote control or poll and authorize, the AccuLoad is considered to be in Stand Alone mode. With this option selected, if the AccuLoad is in Stand Alone mode, validation is required as described above.

3 - Always Validate. This option requires validation regardless of the presence or absence of an automation system. The driver will always be prompted to card in. The lack of a valid card will cause the AccuLoad to deny access to presetting even if the automation system has issued its authorization.

Step 4: Set Up Method of Operation (Firmware Revision 10.07 and Above)

Set System parameter 773 according to how the system is designed to work. This parameter sets how the card system operates, either with a momentary swipe of the card or if the card has to remain captive through out the loading process.

1 – Momentary. Card is presented momentarily to the card reader. The data is held in the unit till the timeout that is programmed in code 772 expires.

2 – Captive. Card is held captive at the card reader for systems where the automation system ends the transaction when the card is pulled. Once all batches have been delivered, removing the card will automatically end the transaction. If the card is removed while a batch is in progress a “card removed” alarm will sound.

Step 5: Set Up a Card Database

Note that this step is only required if card validation was selected in step 3.

There are three methods available for establishing a card database in the AccuLoad III. First, card data already existing in an automation system may be transmitted to the AccuLoad via communications. Second, card data can be entered via the AccuMate. When a database has been composed, this may be downloaded to the AccuLoad. The third method is to use the card reader to retrieve the data from each card and have the AccuLoad store it in the card database. This method is accomplished via a diagnostic.

Automation Method: If a card database already exists in the automation system, this is probably the easiest approach. The AccuLoad supports new communications commands allowing a card database to be established and manipulated at the AccuLoad. The “DI” command allows a driver record to be inserted in the database. The “DD” command allows a record to be deleted. The “DU” command instructs the AccuLoad to update the database in nonvolatile memory. A “DQ” command is available for the automation system to read the database. Please see the communications manual for further details.

AccuMate Method: AccuMate offers a means of entering the card data from the master list provided by the card manufacturer. From AccuMate, choose “File | New”, then select “Driver Database.” Double-click on the first entry and an entry window will appear. Enter the card number and, optionally, the name of the driver to which the card has been assigned. Double-click on the next entry and continue with the data entry. When all of the data has been entered, select “Edit | Dump All” with the AccuMate on-line with the AccuLoad.

Card Reader Method: For this method, the card reader itself is used as the means for entering the card data into the database. At the AccuLoad, enter the program mode. Select diagnostics. From the diagnostics menu, choose “Card Reader Database Update.” As cards are swiped, the data from each card is entered into the database. The only disadvantage of this method is that you have to have all of the cards, which may have already been distributed.

The AccuLoad III also offers a method for inserting the data from a single card into the database. When a driver cards in and receives the “Invalid Card” message, press the SET key. The operator will be prompted for a passcode. If a valid passcode is entered, the new card data may be stored in the database. The driver can then proceed with his loading.

Step 6: Set Up Pin Validation (Firmware Revision 10.05 and Above)

System parameter 758 allows the validation of prompt response 1 and optionally prompt response 2 against the internal driver card database.

Valid options are:

0 – None

1 – Response 1=ID

2 – Response 1=ID, 2=PIN

3 – Response 1=PIN for card

Options 1 and 2 are used when no card reader is available. If option 1 is selected, the AccuLoad will prompt for the driver ID using the configurable prompt message 1 (System parameter 743). The ID entered will be compared to the entries in the driver card database. If a match is found, the driver will be authorized to start a transaction. If option 2 is selected, the AccuLoad will prompt the driver for a driver ID using the configurable prompt message 1 (System parameter 743). If a match is found in the driver card database, the AccuLoad will then prompt the driver for a PIN # using the configurable prompt message 2 (System parameter 746). If the PIN matches the PIN stored with this driver ID record, the driver will then be authorized to start a transaction.

Option 3 is used with a card reader. Once a valid card is presented to the card reader, the AccuLoad will prompt for the PIN number using the configurable prompt message 1 (System parameter 743). If the PIN matches the PIN stored with this driver ID record, driver will then be authorized to start a transaction.

The values in System 741 (Prompts in use) and System 740 (Prompt mode) still solely determine whether the prompt messages are displayed. This parameter will have no effect at times when the prompt(s) are not presented. Also, no PIN validation will occur if a validated driver record has not been established; i.e. when the AccuLoad is under host control, 771 is programmed for standalone/standby validation and 740 is Standby.

Split Architecture Application

The Card Reader Interface is also designed for the AccuLoad III Split Architecture. In this application, the card reader is located at the MMI (man-machine interface) and communications is established between the card reader and the MMI. After the MMI receives the data from the card reader, the MMI transmits this card data to the flow control module.

In the case of a Dual MMI Split Architecture AccuLoad III, two card readers would be used. One card reader would be connected to each MMI. The card data would then be transmitted to the flow control module (FCM) for the load arms assigned to that MMI, both those assigned permanently and those currently swung to that position.

An automation system may retrieve card data from a Split Architecture AccuLoad III from either the MMI or from any load arm. If requested from the load arm, the card data will remain available until the last transaction is ended on the board set or the timeout expires. If requested from the MMI, the data will not time out but will remain available until the next card is read.

Step 1: Set Up a Communications Port for the Card Reader (MMI)

Select a communications port for the card reader interface on the MMI then enter program mode on the MMI by pressing the “F2” key. Set the corresponding system parameter (720, 725, or 730) to Smith Card Reader. Next, set up the baud rate and data format for the communications port to match the settings of the card reader.

Step 2: Set Up Timeout for Valid Card Data

Flow Control Module system parameter 772 allows entry of the timeout period. Note this parameter is applicable only if MMI parameter 772 is set to “momentary”. To configure this parameter, enter program mode from the Main Menu. To do this, press “Enter” from the ready screen for any load arm. The Main Menu will appear. Enter the desired timeout period. Repeat this procedure for every board set in the AccuLoad III Flow Control Module, by bringing a load arm serviced by that board set into focus and following the instructions above.

The timeout represents the period of time that the card data will remain valid with no transaction activity at the board set. Since the card reader is a proximity reader, there is no card present inherent in the reader. Therefore, the card data read will be considered viable for the length of this timeout. If a transaction is begun on any load arm before the timeout expires, then the card data will remain viable until there is no transaction in progress on any load arm of the board set. Note that during the timeout period, a new card will be accepted by the AccuLoad and will replace the previous card read. Once a transaction is in progress, new card data will be ignored.

Step 3: Determine the Use of the Card Data in the AccuLoad III

Flow Control Module system parameter 771 allows the operator to select how the card data is to be used in conjunction with the AccuLoad. Several options are available. Note that card data is archived with the transaction regardless of the option selected.

0 - ID Stamp only. The card data is saved with the transaction if a card was presented; however, the driver is not prompted to card in nor is a card-in required.

1 - ID Stamp + Card In Required. The driver is presented with a “Please Card In” prompt, rather than “Press SET Key.” Carding in is required before loading can proceed, but the card data is not compared with a database in the AccuLoad.

2 - Validate in Standalone / Standby Mode Only. This option allows the AccuLoad to validate cards when only when the automation system is off-line. When the automation system is controlling the loading process, the AccuLoad will accept card data and archive it with the transaction, but will not require card-in or attempt to validate the card data. Thus, when under automation control, the AccuLoad will respond as though the “ID Stamp Only” option were selected. When the AccuLoad goes into Standby mode (as a result of the automa tion system going off-line and the timeout expiring on the AccuLoad), carding in will be required and loading will be prevented if the card data does not match one of the entries in the card database in the AccuLoad. If a card is recognized by the card reader but cannot be validated by the AccuLoad (not in the database), the AccuLoad will display “Invalid Card” and presetting will not be permitted.

This selection is designed for installations that impose the card validation function on the host system, but still maintain the security of card validation if the host goes offline. If no communications port is configured for ei ther remote control or poll and authorize, the AccuLoad is considered to be in Stand Alone mode. With this option selected, if the AccuLoad is in Stand Alone mode, validation is required as described above.

3 - Always Validate. This option requires validation regardless of the presence or absence of an automation system. The driver will always be prompted to card in. The lack of a valid card will cause the AccuLoad to deny access to presetting even if the automation system has issued its authorization.

Step 4: Set Up Method of Operation (Firmware Revision 10.07 and Above)

Set System parameter 772 in the MMI program mode according to how the system is designed to work. This parameter sets how the card system operates, either with a momentary swipe of the card or if the card has to remain captive through out the loading process.

1 – Momentary. Card is presented momentarily to the card reader. The data is held in the unit till the timeout that is programmed in code 772 in the flow control module expires.

2 – Captive. Card is held captive at the card reader for systems where the automation system ends the transaction when the card is pulled. Once all batches have been delivered, removing the card will automatically end the transaction. If the card is removed while a batch is in progress a “Card Removed” alarm will occur.

Step 5: Set Up a Card Database

Note that this step is only required if card validation was selected in step 3.

MMI’s with firmware release 10.02 or higher support the card database in the MMI. Once the data base is set up in the MMI, the MMI will validate the driver ID number and then broadcast the card record to all KDC’s in the attached FCM.

The methods for entering/downloading a card database (Automation, AccuMate, and Card Reader) are described above with the standard AccuLoad III. If the Card Reader method is selected, enter the MMI program mode by pressing the F2 key. Enter the diagnostics menu and select “Card Reader Database Update”. As cards are swiped, the data from each card will be entered into the database.

Step 6: Set Up Pin Validation (Firmware Revision 10.05 and above)

The methods for setting up pin validation are described above with the standard AccuLoad III. Note that the driver card database including PIN #s is downloaded and stored on the MMI. But pin validation must be set up on each of the individual board sets in the attached FCM using System parameter 758.

Revisions included in AB06052 Issue/Rev. 0.1 (8/05):
Page 2: Added step #4 Set Up Method of Operation

Headquarters:
1803 Gears Road, Houston, TX 77067 USA, Phone: 281/260-2190, Fax: 281/260-2191

Gas Measurement Products:
Houston, TX USA Phone 281/260-2190
Thetford, England Phone (44) 1842-82-2900
Kongsberg, Norway Phone (47) 32/286-700
Buenos Aires, Argentina Phone 54 (11) 4312-4736

Integrated Measurement Systems:
Corpus Christi, TX USA Phone 361/289-3400
Kongsberg, Norway Phone (47) 32/286-700
San Juan, Puerto Rico Phone 787/274-3760
United Arab Emirates, Dubai Phone 971 +4/331-3646

Liquid Measurement Products:
Erie, PA USA Phone 814/898-5000
Los Angeles, CA USA Phone 661/702-8660
Slough, England Phone (44) 1753-57-1515
Ellerbek, Germany Phone (49) 4101-3040
Barcelona, Spain Phone (34) 93/201-0989
Moscow, Russia Phone (7) 095/564-8705
Melbourne, Australia Phone (61) 3/9807-2818

Beijing, China Phone (86) 10/6500-2251
Singapore Phone (65) 6861-3011
Chennai, India Phone (91) 44/450-4400

Visit our website at www.fmcmeasurementsolutions.com