

TERMINAL USER GUIDE

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Notices**Document History**

The Document History shown below defines the revision status of each item included in the ISN Terminal User Guide publication. An updated document history will always accompany any items which have been revised, then published as an update.

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Introduction

This publication describes the operator interface to the ISN range of products via a terminal. The product range consists of Level 1 products - The RDC, the EDC/36 and the EDC/72, and the Level 2 products - the LDC/17 and the LDC/34. This publication assumes that the User is familiar with the basic structure of the MicroReporter.

Document References

The following document is referred to:

- ISN Software Reference Manual

General System Description

System Levels

Access to the Features, Sections and Pages of an ISN is achieved through a system of hierarchical levels. Each level can be reached from a terminal. As well as connecting to the unit into which the terminal is plugged, it is possible to communicate to another ISN attached to the Local Area Network (LAN) or Public Switched Telephone Network (PSTN).

Access to an ISN can also be made via its integral keyboard. This method of access is described in the ISN Software Reference Manual.

The ISN is divided into four primary system levels:

- Advisory Level
- Feature Level
- Section Level
- Page/Data Entry Level

All Feature, Section and Page data can be accessed by a series of key presses from a terminal.

Advisory Level

The Advisory Level is the default level of the system. The Advisory level message consists of the unit name, the current date and time and one of the following four messages:

- System Unconfigured
- System Halted
- Loading Configuration
- Saving Configuration

The only operations which may be performed at Advisory Level are:

- Password Access
- Alarm Review

Password Structure

A valid password of up to 8 alpha-numeric characters must be entered to gain access to the Features, Sections and Pages of an ISN. If an incorrect password is entered or no password entry is attempted, access to all data is denied. Each time a password is entered it is checked with the passwords stored in Feature 60 - System Structure. Two types of passwords structure exist, the first type allows access to the F.S.P. hierarchical levels, the second puts the User into the report structure. If a valid password has been entered, one of five levels within one of the two password structures is made available. Each level has a Feature Extent which restricts access to a set number of Features.

Password Levels

Password Level 1 - Primary View Level - View Pages 01 and 02. No editing functions are available.

Password Level 2 - Primary Control Level - View Pages 01 and 02, plus the ability to alter alarm limits and alarm setpoints.

Password Level 3 - Operator Review and Control Feature - View Pages 01 and 02, plus the ability to manually control some building operations.

Password Level 4 - Engineering Data Entry - View all Pages, provide control as in Levels 1 to 3, plus the ability to alter setpoints and other limits.

Password Level 5 - Programming and Commissioning - View all Pages, provide control as in all the lower levels, plus enable all control operations and configuration of the system.

Password Structure Reports

Report Password 1 has access limited to Report No 1.

Report Password 2 has access limited to Report No 1 and 2.

Report Password 3 has access limited to Report No 1,2 and 3.

Report Password 4 has access limited to Report No 1,2,3 and 4.

Report Password 5 has access to all Reports.

Alarm Acknowledgement

Alarms may only be acknowledged on the Page were they are logged in Feature 01 - System Alarms. This is achieved using the 'a' key on the terminal.

Feature Level

Access to the Features of the system requires a correctly entered password while the ISN is at Advisory Level. The number of Features which are accessible is dependent upon the Feature Extent given to the password.

Section Level

Each Feature is divided into a number of Sections. The password determines which Features may be accessed by the User and consequently, all Sections of those Features can be reached.

Page/Data Entry Level

Each Section of a Feature consists of a number of Pages. Depending on the level of password which is current, the system allows viewing and, if high enough, editing of the configuration data within these pages.

Terminal Operation

Terminal Set-Up

Terminals which have an RS232 standard interface can be connected to the Universal RS232 port of the ISN. The following are suitable:

- A terminal with a standard keyboard, display and RS232 port.
- A personal computer with an RS232 port and running a suitable communications package.

The terminal must be set up to match the communication protocol being used by the ISN, as follows:

- Data bits = 8
- Baud rate equal to the baud rate selected for Channel 2 on Page 04 of Feature 45 - Channel Configuration.
- Parity equal to the parity selected for Channel 2 on Page 05 of Feature 45.

The terminal should also be set up in half duplex mode with auto linefeed on a carriage return.

Terminal Command Structure

The terminal command set for the ISN range of products is an extended version of the command set for the MicroReporter 4800, the DDC and the LDC. Several commands have been added in order to increase the versatility of the control of the system and its user-friendliness. Two types of command can be issued.

- Base Commands - These comprise a single character and provide basic control of the ISN. Base commands can also take the form of a string of Base command characters.
- Extended Commands - These comprise complete words and provide more flexible methods of interrogating an ISN. Extended commands cannot be strung together.

All commands consist of lower case characters. Upper case characters are reserved for text entry.

Either type of command is executed when the 'carriage return' key is pressed.

A comprehensive set of messages exist which inform the User of any error conditions, plus the status of the terminal interface. These messages are listed in the section 'Error and Special Messages'.

Logging On

- 1 Establish Link - Type 'login' or 'logon' and press the 'carriage return' key. When communications are established, the Advisory Level text of the unit will be returned. If an alarm is present, its details are displayed instead of the Advisory message. Input is prompted with the 'greater than' symbol. (This may be disabled by the User - see section 'Communication Control').

Help Table

A Help Table can be displayed which lists the commands available to the User communicating with an ISN via a terminal.

- 1 View Help Table - Type 'help', then press the 'carriage return' key. The complete content of the table will scroll up the screen.

Refer to the section 'Help Text' at the end of this publication for details on the Help Table.

Data Access**Password Entry**

Passwords are entered at Advisory Level. A valid password must be entered before access to the Features, Sections and Pages of the system.

- 1 Request Password Access - Type 'e' and press the 'carriage return' key. The display will reply:

PLEASE ENTER PASSWORD -

- 2 Enter Password - Enter up to 8 alpha-numeric characters, then press the 'carriage return' key. This initiates password validation. Provided the password matches one of the passwords stored in Feature 46 - System Structure, the appropriate password level and Feature Extent are made available for interrogation.

NOTE:

- Alpha-numeric passwords can be set via a terminal. This format of password cannot be entered from the keyboard. The use of text in passwords is not recommended unless a terminal is readily available.

Alarm Acknowledgement

Alarms can only be acknowledged in Feature 01 - System Alarms.

- 1 Go to Feature 01, which lists the alarms in a table, and select the required Section. Type 'f01 snn', where nn is in the range 01 to 08. Go to the Page which contains the details of the alarm to be acknowledged - type 'pnn'.
- 2 Acknowledge Alarm - Type 'a', then press the 'carriage return' key. The alarm will be acknowledged.

Feature Access

Access to the Features will only be allowed if a valid password has been entered. The number of Features which may be accessed and the degree of alteration which can be completed is governed by the Level and Extent given to the password.

- 1 Step To Feature - Type 'f' then press the 'carriage return' key. The Feature Level text of the Feature visited will be returned.
- 2 Repeating this procedure accesses the Features in turn. If the last Feature, Feature 60 is reached, then the Feature accessed will scroll to Feature 01.
- 3 Specify Feature - Type 'fnn' where nn = a Feature number in ISN format, then press the 'carriage return' key. The Feature Level text of the Feature requested will be returned. An 'Out Of Range' error message will be returned if a number greater than 60 is entered.

Section Access

Each Feature is divided into Sections. The Password Extent determines the number of Features which may be accessed. The Sections of only those Features will be viewable.

- 1 Access Feature - Use the 'Feature' commands (above) to reach the Feature whose section text is required.
- 2 Step To Section - Type 's' then press the 'carriage return' key. The Section Level text of the Section visited with be returned. Repeating this procedure accesses the Sections in turn. If the last Section is reached, then the Section accessed will scroll to Section 01.
- 3 Specify Section - Type 'snn' where nn = a Section number in ISN format, then press the 'carriage return' key. The Section Level text of the Section requested will be returned. An 'Out Of Range' error message will be returned if a number greater than the number of Sections in the Feature is entered.

NOTE:

- Each key press is processed separately. If an 'Out Of Range' error occurs and 'snn' was typed, the next Section will be displayed; if only 'nn' was types, the last Section text will be re-displayed.

Page Access

Each Section of a Feature is divided into Pages. The Level of the password determines the number of Pages which can be viewed and edited. If the password level is less than 4, the contents of Pages 01 and 02 only will be returned.

- 1 Show Current Page Contents - Type 'p', then press the 'carriage return' key. The Page text will be returned.
- 2 Step To Page - Type 'p', then press the 'carriage return' key. The Page text of the Page visited will be returned. Repeating this procedure accesses the Pages in turn. If the last Page, or Page 02 if the current password restricts further viewing, is reached, the next Page accessed will scroll to Page 01.
- 3 Select Page - Type 'pnn', where nn = a valid Page number, then press the 'carriage return' key. The contents of the Page will be returned. An 'Out Of Range' error message will be returned if the number entered is greater than the number of Pages available. If the password level does not allow access to that Page, the message '#09 Insufficient Priority' is displayed.
- 4 Access Corresponding Page In Next Section - The corresponding Page of the next Section in the same Feature can be accessed via one keystroke. Type 'n', then press the 'carriage return' key. The content of the corresponding Page in the next Section will be returned.
- 5 Access Corresponding Page In Last Section - The corresponding Page of the last Section in the same Feature can be accessed via one keystroke. Type 'l', then press the 'carriage return' key. The content of the corresponding Page in the last Section will be returned.
- 6 To refresh the data on the screen simply press the 'carriage return' key. The data will be updated on the screen.

Direct Page Access

Any one Page can be reached from any other. In principle, this requires the issue of the Select Feature, Select Section and Select Page commands to be issued as a single command.

Go To Page - Type in the command 'fnnsnpnn' where nn is a valid Feature, then Section, then Page number. Check that this is correct, then press the 'carriage return' key. The content of the Page chosen will be displayed.

User Enterable Data

Provided password level and extent allows, the User enterable data in each field of a Page can be modified. This is termed 'editing'. The following steps through editing of the different types of data which can be placed in a User enterable field.

The data each User enterable data field required, including their extent, choice or limitation, is detailed in the ISN Software Reference Manual.

Data Editing, Cancellation and Correction

Each Page which will accept User enterable data may have one or more fields. The following shows the keystroke format of editing.

Editing

The following summarises the editing process. When entries are accepted the editing process will terminate. If entries are out of range or of the wrong type, the entry will not be accepted, the original context of the fields will not change and an error message will be displayed as the editing process terminates.

- 1 One Enterable Field - This is completed in three stages:
 - Point To Page - Issue suitable Feature, Section and Page commands to 'point' to the Page to be edited.
 - Prepare to Edit Field - When the content of the Page chosen is displayed, type 'e' and press the 'carriage return' key. The content of the Page will be returned as before except that the content of the User enterable data field will have been replaced with an appropriate data entry prompt (described below).
 - Edit Field - Type in the new data, suffix with an 'e', then press the 'carriage return' key. The entry will be validated and if acceptable, the content of the Page will be returned again, this time showing the new data in the enterable field. If the new entry is rejected, the Page will show the data entry prompt. Type 'e' and press the 'carriage return' key again - the page will show its original contents.

- 2 Two Enterable Fields - Some pages have two fields which can accept User enterable data. The existing content of either field can be changed or left intact while the other is changing.
 - Point To Page - Issue suitable Feature, Section and Page commands to 'point' to the Page to be edited.
 - Prepare To Edit First Field - When the content of the Page chosen is displayed, type 'e' and press the 'carriage return' key. The content of the Page will be returned as before except that the content of the first User enterable data field will have been replaced with a data entry prompt.
 - Edit First Field - Type in the new data, suffix with an 'e', then press the 'carriage return' key. The entry will be validated and if acceptable, the content of the Page will be returned again, this time showing the new data in the first enterable field. If the new entry is rejected, the Page will show the data entry prompt as before. The content of the second field will be replaced with a data entry prompt.
 - Close the second field.
 - Bypass First Field - Type 'ee', then press the 'carriage return' key. The content of the Page will be returned, showing the original content of the first field, but with the content of the second replaced with a data entry prompt.
 - Edit Second Field - Type in the new data, suffix with an 'e', then press the 'carriage return' key. The entry in the second field will be validated and if acceptable, the content of the Page will be returned again, this time showing the new data in the second enterable field.
 - Bypass Second Field - Type 'e' then press the 'carriage return' key. The content of the page will be returned, showing the original content of the second field.

Cancellation

An edit can be cancelled. When this is requested, the original content of a field will be restored.

- 1 Cancel Edit - During editing, type 'c' and press the 'carriage return' key. The edit will be cancelled.

Correction

During editing, an incorrectly entered digital character may be corrected.

- 1 **Correct Last Digit** - Type '?' and press the 'carriage return' key. The last digit or character entered will be replaced with the appropriate data entry prompt for that field. Enter the correct digit or character. Type 'e' and press the 'carriage return' key after entering the remaining data.
- 2 **Correct Any Digit** - Type '?' and press the 'carriage return' key. Repeat this procedure until the wrongly entered digit or character is reached. Each intervening digit or character will be replaced with the data entry prompt. Enter the correct digit or character. Type 'e' and press the 'carriage return' key after entering the remaining digits or characters.

Different fields within the Pages of the ISN can accept different types of data. The following steps through the syntax of each type. The following assumes that the Page to be edited is currently being pointed to.

Values

Type types of value will be accepted, depending on the needs of the field; real values or integers.

Real Values

An integer or a real number can be entered.

- 1 Prepare Field - Type 'e' and press the 'carriage return' key. The prompt 'v..v' will appear in the field.
- 2 Enter Value - Real values may be entered to a maximum of 5 decimal places though they will only be displayed to one decimal place. For example, if the number entered is 0.05, the display will show 0.0. All dependent calculations will use 0.05. A negative number will also be accepted.
 - Decimal Point - The use of this character causes a reduction in the length of the value which can be entered by one digit.
 - Negative Numbers - The minus sign will occupy one digit of the field, thus reducing the effective length of the value which can be entered.
- 3 Enter Value - Type in the required value, plus 'e' then press the 'carriage return' key.

Integer Values

All integer values are positive. Real numbers are rejected if entered and the message '#02 Invalid data' is displayed.

- 1 Prepare Field - Type 'e' and press the 'carriage return' key. The prompt 'v..v' will appear in the field.
- 2 Enter Value - Type in the required value, plus 'e', then press the 'carriage return' key. The permissible length of the integer will vary.

Point Address Entry

Point addresses are made up in the format Feature/Section number, ie. Feature 02 - Analog Input Number 12 = Feature 2 Section 12 = 212.

Addresses from the following Features can be used.

- Feature 02 - Analog Inputs
 - Feature 03 - System Variables
 - Feature 04 - Pulse Inputs
 - Feature 05 - Digital Inputs
 - Feature 06 - Digital Outputs
 - Feature 07 - Analog Outputs
- 1 Prepare Field - Type 'e' and press the 'carriage return' key. The prompt 'sss' will appear in the field.

- 2 Enter Address - Type in the required address, plus 'e', then press the 'carriage return' key.

Date Entry

Dates are entered with the day of the month, followed by the month. For example: '3108' corresponds to the 31 of August.

- 1 Prepare Field - Type 'e' and press the 'carriage return' key. the prompt 'dddd' will appear in the field.
- 2 Enter Date - Type in the required date, plus 'e', then press the 'carriage return' key.

Time Entry

Time is entered in 24 hour format. For example: '1830' corresponds to 6:30pm.

- 1 Prepare Field - Type 'e' and press the 'carriage return' key. The prompt 'hhhh' will appear in the field.
- 2 Enter Value - Type in the required time, plus 'e', then press the 'carriage return' key.

Year Entry

The year is entered as standard, eg '1991'.

- 1 Prepare Field - Type 'e' and press the 'carriage return' key. The prompt 'yyyy' will appear in the field.
- 2 Enter Value - Type in the required year, plus 'e', then press the 'carriage return' key.

Text Entry

Text entries are usually used to provide inputs and outputs with relative names; 'OUTSIDE AIR TEMP', for example. All ASCII characters will be accepted from the terminal, with the exception of lower case characters.

- 1 Prepare Field - Type 'e' and press the 'carriage return' key. The prompt 't..t' will appear in the field.
- 2 Enter Value - Type in the text, plus 'e', then press the 'carriage return' key.

Text Removal

Text may also be removed. This is achieved by typing 'eae' at the required field.

Menu Entry

Menu texts provide fixed options for input. Where this is possible, a menu is provided which lists the items that are appropriate to the Page and field being edited. Two methods of Menu item selection can be used; Step to Menu Item and Nominate Menu Item.

- 1 Prepare Field - Type 'e' and press the 'carriage return' key. the prompt 'm..m' will appear in the field.
- 2 Step To Menu Item - Type 'm' and press the 'carriage return' key until the text of the menu item required is returned. When the item required is returned, type 'e' and press the 'carriage return' key.
- 3 Nominate Menu Item - Each item in a Menu is allotted a number. The numbers of all menu items are listed in the ISN Software Reference Manual. Type in the number which corresponds to the item required, plus 'e', then press the 'carriage return' key.

Repeat Edit

An edit sequence may be repeated over a number of Sections. This is achieved with the repeat command 'r'. For example, the string 'reme' will repeat 'eme' from the current Section to the last Section of the Feature. This functions works only at Page level.

Control Functions

The following operations may be carried out at Page level. This is achieved by typing 'e' and pressing the 'carriage return' key.

- Reset latched alarms - Feature 12 - Digital Alarms.
- Reset Equipment Hours Run - Feature 14.
- Reset Utility Totals and the Utility Cost Log - Feature 20.
- Re-transmit Analog and Digital Outputs - Feature 28 and Feature 29.
- Reset the output sequence in Feature 35 - Load Sequencing.
- Execute manual changeover of digital points in Feature 36 - Lead/Lag.
- Initialise remote Alarms in Feature 41 - Alarm Route.
- Establish enquiry of another unit on the LAN or on the PSTN - Feature 43.
- Reset errors in Feature 45 - Channel Configuration.
- Reset Peak System Load Factor in Feature 50 - System Diagnostics.

For further details see the 'ISN Software Reference Manual'.

Alarm Review

This operation allows fast access to Page 01 of a Feature and Section which has generated an alarm.

- 1 Return To Alarm Summary - Type 'f01', then press the 'carriage return' key. The Alarm Summary Feature will be reached.
- 2 Select The Section Corresponding To The Required Alarm Classification - Type 'snn', where nn is a number in the range 01 to 08, then press the 'carriage return' key.
- 3 Select The Required Alarm - Type 'p' and press the 'carriage return' key. Repeat until the required alarm log is displayed, or type 'pnn' to go directly to the Page.
- 4 Go To The Feature and Section In Alarm - Type 'm', then press the 'carriage return' key. The Page 01 text of the Feature and Section in alarm will be displayed.
- 5 Return To Alarm Summary - Type 'm' and press the 'carriage return' key and the last Page accessed in the Alarm Summary Feature will be accessed again.

NOTES:

- The alarm log may display Feature and Section equal to 0 if the alarm was system generated. In this case, typing 'm' has not effect.
- Typing 'm' at Page level anywhere in the system (except Feature 01) will return the User to the last Page accessed in Feature 01. This will occur if 'm' was initially typed to go to a Feature and Section in alarm.

Print Selected Data

Selected Section or Page data of any Feature may be printed by manual command. The output is sent to a printer which is directly connected to the ISN. Output is not delivered to the terminal. Before attempting this, make sure that a printer is connected directly to the printer port and its details are configured in Feature 44 - Printer Configuration, within the ISN.

- 1 Print Section - This is completed in two steps.
 - Point To Section - Where 'nn' are Feature and Section numbers, type in the Feature and Section to be printed in the format 'fnnsnn', then press the 'carriage return' key. The Feature descriptor and the Section number will be returned.
 - Print Section - Type 'a' and press the 'carriage return' key. The contents of each Page in the Section chosen will be printed.
- 2 Print Page - This is completed in two steps.
 - Point To Page - Where 'nn' are Feature, Section and Page numbers, type in the Feature, Section and Page to be printed in the format 'fnnsnnpnn', then press the 'carriage return' key. The contents of the Page will be returned.
 - Print Page - Type 'a' and press the 'carriage return' key. The contents of the selected Page in the Section chosen will be printed.

NOTES:

- Data cannot be printed at Feature level.
- Pages 02 to 11 in Feature 01 cannot be printed at Page level.

List Data

Selected configuration data may be listed to the VDU, as follows:-

- All Pages from all Sections of one Feature.
- All Pages from one Section of one Feature.
- A common Page from all Sections of one Feature.
- All Pages in one Section of the Data Access Feature.
- All Pages in one Section of the Alarm Summary Feature.
- All Pages of the User Report.
- All Pages of the User Report Section specified.

Listing is restricted to the access allowed by the Level of password in use and the Extent of Features made accessible.

Continue Listing

The listing of data may halt under one of two conditions. This allows a pause for review of the list content.

- 1 Continue Page Listing - Each time 15 lines of data have been returned, if more data remains to be listed, the message 'More... press enter' will be returned. Press the 'carriage return' key. If the 'carriage return' key is not pressed within 30 seconds, listing will terminate and the message '#14 List Aborted' will be returned.
- 2 Continue Section Listing - When the content of a complete Feature is being reviewed, listing will halt each time the end of a Section is reached. The message 'Next Section... press enter' will be returned. Press the 'carriage return' key. If the 'carriage return' key is not pressed within 30 seconds, listing will terminate and the message '#List Aborted' will be returned.

Terminate Listing

Listing of data can be terminated each time a halt occurs.

- 1 Terminate Listing - Press the 'Ctl' and 'c' keys together, then press the 'carriage return' key. Listing will be terminated and the message '#14 List aborted' will be returned.

List Selected Feature

The content of each page in each Section of one Feature is listed as follows:

- 1 Type 'list fmm', where mm is a valid Feature number, then press the 'carriage return' key. Listing will be returned in the 15 line batches if more than 15 lines are to be listed.

List Selected Section of a Feature

The content of each Page in one Section of one Feature is listed as follows:

- 1 Type 'list fmm,snn' where mm is a valid Feature number and nn is a valid Section number, then press the 'carriage return' key. If the Section contains more than 15 lines, listing will halt after every 15 lines.

List Selected Page of a Feature

The content of common Pages in each Section of one Feature is listed as follows:

- 1 Type 'list fmm,pnn', where mm is a valid Feature number and nn is a valid Page number, then press the 'carriage return' key. The content will be returned in 15 line batches if there are more than 15 Sections in the Feature.

List Data Access

The appropriate Page details of the Feature and Section numbers specified in one Section of Feature 24 are listed as follows:

- 1 Type 'da snn', where nn is a valid Section number between 01 and 10, then press the 'carriage return' key.

List Alarm Summary

Each Section of Feature 01 - Alarm Summary consists of a log of Alarms for one of the Alarm Classifications. The Alarm Summary for any Alarm Classification is listed as follows:

- 1 Type 'alm snn', where nn is in the range 01 to 08, then press the 'carriage return' key.

List User Report

Each Section of Report data can contain up to 10 pages of data. There are 5 Reports available.

- 1 Type 'list rnn', where nn is in the range 01 to 05, then press the 'carriage return' key.

List A Specific User Report

To list all Pages of all report.

- 1 Type 'list'.

Communications Control

The ISN can return data in a number of formats, the timeout between periods of communication inactivity can be changed and communications links can be made to other ISN's within the same network.

The following are a series of commands which allow communications facilities to be made or varied.

Timeout

An ISN will close terminal interrogation following a period of communication inactivity. The default timeout is 1 minute. This can be extended to 10 minutes and will remain current until an automatic timeout occurs, or when the communications link is closed. When the link is re-established, the timeout will have reverted to 1 minute. The timeout can be changed at any time during an interrogation via a terminal.

- 1 Set Timeout - Type 'tim nn' where nn is a number between 1 and 10, then press the 'carriage return' key. An error message will be returned if the value entered is out of range or of the wrong type.
- 2 View Timeout - type 'tim', then press the 'carriage return' key. The following message is displayed.

'Timeout = vv minutes'

where vv is the current value of the timeout.

Text Terminator

Some terminals handle and display the data they receive differently to others, particularly in the way the data is terminated. The following are provided to overcome any difficulties which may be encountered when receiving poorly terminated data. Five classes of terminator, 0 to 4, can be set.

- 0 - No terminator
- 1 - Carriage Return only
- 2 - Carriage Return and Linefeed
- 3 - Prompt only
- 4 - Carriage Return and Prompt

The default terminator is 4 and is always current when communications are first established.

Set Terminator - Type 'trm n', where n is the number which corresponds to the type of terminator to be set, then press the 'carriage return' key. An error message is displayed if the value entered is out of range or range of the wrong type.

- 2 View Terminator - Type 'trm', then press the 'carriage return' key. The following message is displayed.

'Terminator = v(t..t)',

where v is the value of the terminator

t..t is the descriptor text of the terminator.

Text Mode

The text mode determines the amount of data to be displayed. Three modes can be set.

- 0 - Full Text: In this mode, Feature, Section and Page text will be returned.
- 1 - Short Text: In this mode only Page text will be returned.
- 2 - Field Text: This mode displays the values of the fields with delimiting characters. This mode has no practical use during terminal operations.

Default Text Mode = 1.

The default text mode is set when communications are first established.

- 1 Set Text Mode - Type 'txt n', where n is the number which corresponds to the text mode to be set, then press the 'carriage return' key. An error message is displayed if the value entered is out of range or of the wrong type.
- 2 View Text Mode - type 'txt', then press the 'carriage return' key. The following message is displayed.

'Text mode = v(t..t)',

where v is the value of the text mode

t..t is the descriptor text of the text mode.

Secondary Link

Communications can be established from the terminal through a local ISN to another unit on the Local Area Network (LAN). A secondary link can only be established when a Level 5 Password is current.

- 1 Type 'open link nn,ss', where nn is the network number and ss is the station number for channel 1 of the destination unit, then press the 'carriage return' key.

When a link is established with the second unit, the prompt on the VDU changes to '*' to inform the User that a secondary link has been established. The text mode and timeout are set as follows:

- Text Mode of Second Link = Text Mode of First Link
- Timeout of Second Link = Timeout of First Link + 2 minutes

During the secondary link, the text mode can be altered, but the timeout cannot be altered.

A third link cannot be made. If an attempt is made to open another link from the second ISN to a third unit either via the 'open link' command or through the Enquiry Feature (Feature 43), the following error message is displayed.

'#19 Cannot form this type of nested communications link'

All other commands may be executed.

NOTE:

- For phase 1 and 2 of the development of the ISN range of products, the network number is zero. Future developments will enable inter-network communications.

Search

A facility is provided which determines which ISN attached to the LAN are currently operational.

The station number and the identity of each ISN is listed, plus the total number of ISN's found. A search can only be made when a Level 5 password is current.

- 1 Type 'search nn,xx,yy', where nn is the network number, xx is the first station number to be searched for and yy is the last station number to be searched for, then press the 'carriage return' key.

The 'search' command can be terminated at any time. Press the 'ctl' key and the 'c' key simultaneously, then press the 'carriage return' key.

NOTE:

- In phases 1 and 2 of the development of the ISN range of products, the network number must be zero.

Cancel Current Operation

Once started, any command can be cancelled.

- 1 Press the 'ctl' key and the 'c' key simultaneously, then press the 'carriage return' key. A message will be displayed which will confirm the operation has been cancelled.

Terminating Communications

It is good practice to make sure that the link between the terminal and an ISN is shut down correctly. This prevents having to wait for communication timeouts before further interrogation from a terminal.

- 1 To close a secondary link - Type 'close link', then press the 'carriage return' key. The following messages are displayed.

'Close secondary link....please wait'

'Secondary link closed'

- 2 To close the first link - Type 'logoff' or 'logout', then press the 'carriage return' key. The following message is displayed.

'Link closed'

Error and Special Messages

Error Messages

The following is a list of the error messages which can be received from an ISN.

- '#01 Invalid Command.'
- '#02 Invalid Data.'
- '#03 Invalid Character.'
- '#04 Nothing to edit or insufficient priority.'
- '#05 Invalid data length.'
- '#06 Feature number out of range.'
- '#07 Section number out of range.'
- '#08 Page number out of range.'
- '#09 Insufficient Priority.'
- '#10 Can only print at Section or Page level.'
- '#11 Parameter out of range.'
- '#12 Invalid parameter type.'
- '#13 Edit aborted.'
- '#14 List aborted.'
- '#15 Nothing to abort.'
- '#16 No responds from target. Wait aborted.'
- '#17 Cannot abort .. please wait.'
- '#18 Channel busy.'
- '#19 Cannot form this type of nested communications link.'
- '#20 Cannot process this command in nested link.'
- '#21 This command is only available to channel 2, during terminal link.'
- '#22 Invalid station number.'
- '#23 This section is in use.'

Special Messages

Special messages are returned while the syntax of reply data is being altered, while a process is completing or to announce when a process has completed.

'Link closed.'

'Text mode = n',

where n =

- 0 - Full text
- 1 - Short text, or
- 2 - Field text

'Terminator = n',

where n =

- 0 - No terminator
- 1 - Carriage Return only
- 2 - Carriage Return, Linefeed
- 3 - Prompt only
- 4 - Carriage Return, Prompt

'Timeout = vv minutes',

where vv = 1 to 10

'#40 Timed Out. Link closed.'

'#41 Destination busy.'

'#42 Link broken.'

'Establishing link... please wait.'

'Link established.'

'Closing secondary link... please wait.'

'Failed to close secondary link.'

'Secondary link closed.'

'Searching... Press ^C to abort.'

'Search complete vv station(s) found',

where vv is the number of stations found on the LAN.

'#43 Station not responding.'

'#44 Minc not responding.'

'#45 Modem not responding.'

'#46 Search aborted. vv station(s) found',

where vv is the number of stations found on the LAN.

'More... press enter'

'Next Section... press enter'

Help Text

Typing 'help' and pressing the 'carriage return' key displays the following information on the VDU.

TERMINAL INTERFACE COMMANDS

f	Feature key
s	Section key
p	Page key
e	Enter key
a	Print/Ack key
c	Cancel key
m	Menu key
r	Repeat
n	Next Section or Report
l	Last Section or Report
list fmm	List all Pages of all Sections in Feature mm
list fmm, snn	List all Pages of Section nn in Feature mm
list fmm,c	List Page nn of all Sections in Feature mm
list	List all Pages of all reports (report level only)
list rnn	List all Pages of report nn (report level only)
da snn	List Data Access Section nn data
alm snn	List the Alarm table for Section nn
tim nn	Set link timeout to nn minutes (1 to 10)
trm n	Set termination of text (0 to 4)
txt n	Set text format (0 to 2)
open link nn,ss	Open link to station ss on network nn
close link	Close link to secondary station
search nn,xx,yy	Search for stations between xx and yy on network nn
^C	Cancel current operation
logoff/logout	End Session

