dataTaker

Training Note

TR-02RD

CopyD command

DT80 firmware V8.08

CONTENTS

COPYD

The COPYD command is a multipurpose command for unloading data.
It has advanced capabilities include unloading data to;

- Different formats e.g. CSV, fixed and free format.
- Different locations e.g. FTP, USB drive etc.
- Tracking of last data unloaded for up to 40 different users.
- Merge data into a single file.
- Archive data.
- Unload between a specified start and end time.
- Delete the unloaded data.

The COPYD command is followed by a list of space separated options to control the functionality of the command. The options can be listed in any order and are not case sensitive.

The option name can be shorted if required as long as the name remains unique. For example the JOB option can be simplified to J as it is the only option starting with J, where as the DELETE option can be only be simplified to DEL to maintain the distinction between the DELETE and DEST (Destination) options.

To simplify the usage of the COPYD command there are default settings for each option. Only the options that the user wants to change from default need to be passed to the COPYD command.

COPYD options that have a Y (Yes) or N (No) input can use either Y, YES, N or NO and are not case sensitive.

Notes;

1. Command length is limited to a maximum 255 characters. Use abbreviations where possible if line length is excessive.

Options are;

Job

Specifies which jobs data is to be unloaded.

Syntax:

Job=*Option*
J=*Option*

Where *Option* may be;

- Job Name - unload specified job
- * - Unload all jobs
- None - Unload current job (Default)

Examples:

1. **CopyD J=North** -Unload all data from the job named North.
2. **copyd Job=*** -Unload all data for all jobs in the logger to a single CSV file.

Sched

Specifies which schedules data is to be unloaded.

Syntax:

Sched= *List*
Sc= *List*

Where *List* may be;

- ABCD - List of schedules to unload
- None - Unload all schedules (Default)

Examples:

1. **COPYd** -Unload data from all schedules.
2. **Copyd sched=a** -Unload data from schedule A.
3. **copyd sc=bx** -Unload data from schedules B and X.

Data

The DT80 stores both data and alarms for each schedule in the DBD files. The data option allows the user to select if they want to unload the data part of the file or not.

Syntax:

Data=*Option*
Da=*Option*

Where *Option* may be;

- Y -Unload data records (Default)
- N -Do not unload data record

Examples:

1. **COPYd** -Unload data.
2. **Copyd DATA=Yes** -Unload data.
3. **copyd da=n** -Don't unload data. This will unload any alarm data only.

Alarms

The DT80 stores both data and alarms for each schedule in the DBD files. The alarms option allows the user to select if they want to unload the alarm data part of the file or not.

Syntax:

Alarms= *Option*
Al= *Option*

Where *Option* may be;

- Y - unload alarm records (Default)
- N - Do not unload alarm records

Examples:

1. **COPYd** -Unload all data including alarm data.
2. **CopyD Alarm=Y** -Unload alarm data.
3. **copyD aL=n -**Don't unload alarm data. This will unload data portion of the DBD file only.

Live

Specifies if data from the DBD file currently being used by the owning schedule is to be unloaded or not.

Syntax:

Live=*Option*
L=*Option*

Where *Option* may be;

- Y - unload live (Current) DBD data files (Default)
- N - Do not unload live (Current) DBD data files

Examples:

1. **COPYd** -Unload all data including current DBD data.
2. **CopyD Live=Yes** -Unload live data.
3. **copyd l=n** Don't unload live data.

Archive

By default the COPYD command will unload any archived DBD files associated with the selected job. It will not unload data from files archived in CSV format.

Syntax:

Archive=*Option*
Ar=*Option*

Where *Option* may be;

- Y - unload data from archived DBD files
- N - Do not unload data from archived DBD files (Default)

Examples:

1. **COPYd** -Unload all data including archived DBD data.
2. **CopyD Archive=Yes** -Unload archived data.
3. **copyd ar=n** -Don't unload archived data.

Format

Allows users to specify the data format of the unloaded data.

- CSV is a common file format used when importing data into spread sheets and databases. Note: TZ=Time Zone. (Not currently used)

  e.g. "Timestamp","TZ","REFT (degC)","VBAT (V)"
  2010/04/09 10:19:15.005,n,23.707366,6.708
  2010/04/09 10:19:16.010,n,23.707366,6.708

- Fixed format is the DT80 standard fix format mode output. Please refer to DT80 user's manual for further details on data format.
- Free format is a user specified output. The format is controlled by using the DT80 parameter and switch settings to control the output

  e.g. REFT 23.7 degC
  VBAT 6.71 V

- DBD is the DT80's internal binary data format. This provides the fastest data transfer rate.

Syntax:

Format=*Option*
F=*Option*

Where *Option* may be;

- csv - unload in CSV format: (Default)
- fixed - unload in fixed format
- free - unload in free format
- dbd - unload in DBD format

Examples:

1. **COPYd** -Unload all data in CSV format.
2. **CopyD Format=Fixed** -Unload data in fixed format mode.
3. **copyd F=Free** -Unload data in free format mode.
4. **copyd f=dbd** -Unload data in dbd format.

Merge

The DT80 has a separate binary file for each schedule. The merge command allows form multiple schedule files to be merged into a single output file.

Syntax:

Merge=*Option*
M=*Option*

Where *Option* may be;

- Y - merge all input data into one file.
- N - create a separate output file for each input file (Default)

Examples:

1. **COPYd** -Merge unloaded data into one file.
2. **CopyD Merge=Yes** -Merge unloaded data into one file.
3. **copyd m=n** -Do not merge unloaded data into one file.

Id

User identification number for tracking of last unloaded data.

Syntax:

id=*Int*
i=*Int*

Where *Int* may be;

- An arbitrary integer in the range of 1 to 65535 to identify which new data tracking to used for up to 40 clients. Used with start=new option for tracking new data unloading for multiple users. (default id=0)

Examples:

1. **Copyd** id=12345 -identify user 12345 with this unload.

Step

If your code is saving data every one second this option allows the user to down load every n th data point (Every 10th in the example below). This can be use to get an indication of typical values from remote sites by reducing the volume of data unloaded.

Syntax:

Step=*nn.nn*
Ste=*nn.nn*

Where *nn.nn* may be;

- Time in seconds. Step option skip records such that gap between successive record timestamps is no less than nn seconds (may be fractional) Default is to return all records.

Note:
Be aware this can also lead to aliasing of cyclic data and may skip over events of interest.

Examples:

1. **COPYd** step=10 -Unload next data point after 10 second time increment.

Src

Used to specify which disk drive the source DBD files are located.

Syntax:

SRC=*drive*
SR=*drive*

Where *drive* may be;

- Specify the drive for DBD files to be unloaded. (Default is b:, look on internal drive only)

Examples:

1. **COPYd** SRC=B -Unload binary data from the B drive (Internal).
2. **copyd** Sr=A -Unload binary data from the A drive (USB device).

Path

Specifies which drive and folder to unload the data from.

Syntax:

path=*pathname*
p=*pathname*

Where *pathname* may be;

- unload from specified DBD file, or DBD files in the specified directory only (default=none)

Examples:

1. **COPYD** Path=b:\MyArchives\ -Unload data from the B drive (Internal) in the folder MyArchives.
2. **CopyD** p=A:\Data\ -Unload data from the A drive (USB device) in the folder Data
3. **CopyD** Pa=B:\JOBS\SAMPLE\002_20100311T193043.DBD -Unload data from the file 002_20100311T193043.DBD located in the path B:\JOBS\SAMPLE\

Dest

Used to specify where the data is to be unloaded to.

Syntax;

Dest=*stream*
Des=*stream*

Where *stream* may be;

- stream - output data to active comms port using Format
- B: - output file(s) to B:\JOBS\jobname
- b:\mypath\ - output to specified location
- b:\mypath\myfile.csv - output to specified file (implies merge=Y)
- ftp://ip/mypath/ - output to specified location on ftp server
- ftp://ip/mypath/myfile.csv - output to specified file on ftp server (implies merge=Y)

Notes:

1. If a file name is not specified then the data logger will create a file name in the format *nnn_yyyymmdd*T*hhmmss.ext* (e.g. 003_20100409T114513.CSV)

   Where

   nnn is an index number
   yyyymmdd is the date the file was created in ISO format
   hhmmss is the time the file was created in ISO format
   ext File externsion appropriate to the data type

Custom file and path names

Replacement macros can be used to create custom destination path and file names. Macros allow file names include;

- Time stamp of when data was unloaded.
- dataTaker serial number.
- Unload sequence number.
- A string variable.
- A channel variable.

Time stamp

Syntax: ?(TimeStamp)
Function: Add the current Date and time
Time and date format is YYYYMMDDThhmmss

Example
CopyD Dest=A:\MyFolder\MyData_?(TimeStamp).csv format=CSV

Will copy the data from the current job to a folder called “MyFolder” to a file called MyData_20100907T144419.

e.g. a:\MyData\MyData_20100907T144419.CSV

Note: If the folder does not exist on the USB device it will be created.

dataTaker serial number

Syntax: ?(Serial)
Function: Add the dataTaker serial number

Example
CopyD Dest=A:\MyFolder\MyData_?(Serial).csv format=CSV

Will copy the data from the current job to a folder called “MyFolder” to a file called MyData and include the DT80 serial number (e.g. 082015)

e.g. a:\MyData\MyData_082015.CSV

Sequence

Syntax: ?(Seq)
Function: Add the unload sequence number
Example

CopyD
Dest=FTP://DATATAKER:DATATAKER@10.70.1.111/MyFolder/MyData_?(Seq).csv f=csv

Will FTP the data from the current job to a folder called “MyFolder” and file called MyData_2.CSV on the FTP site

e.g. FTP://DATATAKER_DATATAKER_10.70.1.111/MyFolder/MyData_6.csv

Note: If the folder does not exist on the FTP site it will be created.

String variable.

Syntax: ?(n$)
Function: Add the contents of string variable n

Example
1$="MyData"
CopyD Dest=A:\MyFolder\?(1$)_?(TimeStamp).csv format=CSV

Will copy the data from the current job to a folder called “MyFolder” to a file called MyData_20100907T144419.

e.g. a:\MyData\MyData_20100907T144419.CSV

Notes:

1. The following characters can not be used in replacement strings
   ! " # $ & ^ \ ( ) , / : ; \ ` { } | * @ < > [ ] ?
   If used they will be replaced with the under line character _
2. Spaces and extended character set can not be used.

Channel variable

Syntax: ?(nCV)
Function: Add the current value of n Channel variable

Example
1CV=12345
CopyD Dest=A:\MyFolder\?(1CV).csv format=CSV

Will copy the data from the current job to a folder called “MyFolder” to a file called 12345.CSV

e.g. a:\MyFolder\12345.CSV

Examples:

1. **COPYd** DEST=Stream -Unload data to the current connection (e.g. Current TCP/IP, USB, RS232 connection.)

2. **CopyD** Des=B: -Unload data to the folder where the current job is located.

3. **CopyD** Dest=A:\MyData\ -Unload data to USB memory device, folder \MyData\jobname.

4. **CopyD** Dest=A:\MyData\MyData.CSV-Unload data to USB memory device, folder \MyData\ with the file name MyData.CSV.

5. **CopyD** Dest=ftp://UserName:PassWord@My.FTP.com/MyData/ -Unload data to the FTP site My.FTP.com and folder called MyData.

6. **CopyD** Dest=ftp://UserName:PassWord@My.FTP.com/MyData/NewData.CSV -Unload data to the FTP site My.FTP.com, folder called MyData with the file name NewData.CSV

Start

Allows unloading of selected parts of the data based on Time, Date, calculated times and dates or last unloaded data by selected user. Unload records with timestamp greater than or equal to specified time (default=earliest available).

Syntax:

Start=*timespec*
Sta=*timespec*

Where *Timespec* may be:

- *yyyy-mm-dd*T*hh*:*mm*:*ss.ss*
- *yyyy-mm-dd*T
- *yyyy-mm*T
- *hh*:*mm*
- -*hh*:*mm*:*ss*
- -*n*T*hh*:*mm*:*ss*
- *n*CV
- T*n*CV
- *n*CVT*m*CV
- new
- new2

Notes;

1. Time and date is in ISO8601 format
   - *yyyy-mm-dd* for date
   - *hh*:*mm*:*ss.ss* for time
2. If left blank then unload all data.
3. New option unloads new data since last unload. This is equivalent to the DT500 range ULAST command but extended to track the last unload for up to 40 users as identified by the ID option.
4. New2 option will repeat the unloading of data starting from the same time and date of the last START=New. Use this if you did a start=new unload but then lost the data. Successive start=new2 unloads will all use the same starting point, each successive NEW2 unload will therefore contain progressively more data. Once the data has been successfully transferred to its final destination, resume using start=new unloads.

Examples:

1. **COPYd** Start -Unload all data (default)
2. **COPYd** Start=2010-02-15T12:05:02.25 -Unload all data from 12:05:02.25 on 15 February 2010 to end of data.
3. **copyd** Sta=2010-02-15T -Unload all data from midnight (00:00:00) on 15 February 2010.
4. **CopyD** START=2010-02T -Unload all data from midnight (00:00:00) on 1st February 2010.
5. **COPYd** Start=13:20 -Unload all data from 13:20 today to end of data.
6. **copyd** Sta=-0:0:10 -Unload the last 10 seconds of data
7. **COPYd** Start=-1T12:00 -Unload the data from 12:00, date -1 day (yesterday)
8. **CopyD** STA= T*n*CV -Unload the data from the time held in channel variable *n*. This can be the result of a calculation.

```
Begin"Time"
RA1S
        T(=1CV)                 'Save time to CV
        reft                    'Read reference temperature
        2CV=1CV-10              'calculate T-10 seconds
        Do{CopyD Start=T2CV}        'Unload data from T-10 to end
        LogOnA                      'Log data.
End
```

9. **CopyD** START= *m*CVT*n*CV -Unload the data from the time held in channel variable *n*. This can be the result of a calculation.

```
Begin"Time"
RA1S
        Reft
RB1D
        1CV=3CV                 'Old time = 1CV
        T(=3CV)                 'Save current time.
        2CV=2CV                 'Old date = 2CV
        D(=4CV)                 'Save current Date
        Do{CopyD Start=2CVT1CV}  'Unload data from old date / time to
end
        LogOnA                      'Log data.
End
```

10. **CopyD** start=New -Unload new data logged since the last unload. If this is the first unload then all data will be unloaded.
11. **CopyD** Start=New2 –Repeat data unload from the previous Start=New date and time. (Refer to note 4 above)

End

Allows unloading of selected parts of the data based on Time, Date, calculated times and dates or last unloaded data by selected user. Unload records with timestamp less than specified time (default=last available).

Syntax:

end=*timespec*
e=*timespec*

Where *Timespec* may be:

- *yyyy-mm-dd*T*hh*:*mm*:*ss.ss*
- *yyyy-mm-dd*T
- *yyyy-mm*T
- *hh*:*mm*
- -*hh*:*mm*:*ss*
- -*n*T*hh*:*mm*:*ss*
- *n*CV
- T*n*CV
- *n*CVT*m*CV
- new
- new2

Notes;

1. Time and date is in ISO8601 format
   - *yyyy-mm-dd* for date
   - *hh*:*mm*:*ss.ss* for time
2. If left blank then unload all data.
3. New option unloads data up to the last unload
4. New2 option will repeat the unloading of data up to same time and date of the last end=New.

Examples:

1. **COPYd** End -Unload all data (default)
2. **COPYd** END=2010-02-15T12:05:02.25 -Unload all data up to 12:05:02.25 on 15 February 2010.
3. **copyd** E=2010-02-15T -Unload all data up to midnight (00:00:00) on 15 February 2010.
4. **CopyD** e=2010-02T -Unload all data up to midnight (00:00:00) on 1st February 2010.
5. **COPYd** en=13:20 -Unload all data up to 13:20 today.
6. **copyd** En=-0:0:10 -Unload up to the last 10 seconds of data
7. **COPYd** End=-1T12:00 -Unload the data up to 12:00, date -1 day (yesterday)
8. **CopyD** End= T*n*CV -Unload the data up to the time held in channel variable *n*. This can be the result of a calculation.

```
Begin"Time"
RA1S
```

```
        T(=1CV)                 'Save time to CV
        reft                    'Read reference temperature
        2CV=1CV-10              'calculate T-10 seconds
        Do{CopyD End=T2CV}      'Unload data up to T-10
        LogOnA                  'Log data.
End
```

9. **CopyD** End= *m*CVT*n*CV -Unload the data up to the time held in channel variable *n*. This can be the result of a calculation.

```
Begin"Time"
RA1S
        Reft
RB1D
        T(=1CV)                 'Save current time.
        D(=2CV)                 'Save current Date
        Do{CopyD End=2CVT1CV}   'Unload data up to date / time
        LogOnA                  'Log data.
End
```

10. **CopyD** End=New -Unload new data logged Up to the last unload. If this is the first unload then all data will be unloaded.
11. **CopyD** END=New2 –Repeat data unload from the previous END=New date and time. (Refer to note 4 above)

Delete

Delete data if unload data if transfer is successful.

Syntax:

Delete=*Option*
Del=*Option*

Where *Option* may be;

- Y - Delete unloaded records
- N - Do not delete records (Default)

Notes;

1. Not valid if unload had start= specified.
2. Will cause New and New2 commands to loose the time and date of last unload as the data is deleted.

Examples:

1. **CopyD delete=Yes** -Delete data if unload is successful.
2. **copyd DEL=n** -Do not delete data if unload is successful. (default)

Option Conflicts

Certain combinations of **COPYD** options are invalid, and will result in a "parameter/option conflict" error message.
In particular:

- If **format=dbd** then the **step=** option is not supported. All records in the specified time range will be unloaded.

- If **format=dbd** then **dest=stream** is not valid: DBD format data can only be output to a file (either local or on an FTP server). If DBD format output is specified then the default value of **dest** is **B:** rather than **stream**.
- If **merge=n** then **dest=stream** and **dest=***filename* are invalid: given that multiple output files are to be created, the destination must resolve to a folder.
- If **start=new** or **end=new** (or **new2**) then the **job=** option is invalid: tracking of the last unloaded record is only supported for the current job.
- If **delete=y** then the **start=** option is invalid: data are always deleted from the start of the storefile

COPYD examples:

Archiving data:

a) Archive data to internal drive in DBD format.

Description: Archive data to internal drive in DBD format.

Code example:
CopyD Dest=B: format=DBD

DT80 output:
CopyD Dest=B: format=DBD
DT85>
Unloading: UNTITLED A Data (5 records) -> B:\JOBS\UNTITLED\008_20100409T132726.DBD
Unload complete.

b) Archive new data for user 10 to USB drive in DBD format.

Description: Archive new data for user ID #10 to the UDB drive in DBD format.

Code example:
CopyD Dest=A: format=DBD Start=New Id=10

DT80 output:
CopyD Dest=A: format=DBD Start=New Id=10
DT85>
Unloading: UNTITLED A Data (21 records) ->
A:\SN085533\JOBS\UNTITLED\015_20100409T145739.DBD
Unload complete.

Copy to USB:

a) Copy new schedule A data of the current job to USB in CSV format.

Description: Copy only the new data for schedule A to a USB memory device in CSV format.

Code example:
CopyD Alarms=N Dest=A: Sched=A format=CSV Start=New

DT80 output:
CopyD Alarms=N Dest=A: Sched=A format=CSV Start=New
DT85>
Unloading: UNTITLED A Data (5 records) ->
A:\SN085533\JOBS\UNTITLED\003_20100409T114513.CSV
Unload complete.

b) Copy data to USB with folder and file name in CSV format.

Description:
Copy the data and alarm data for schedule A of current job to a USB memory device including folder and file name in CSV format.

Code example:
CopyD Alarms=N Dest=A:\ MyDataFolder\MyData.csv Sched=A format=CSV

DT80 output:
CopyD Alarms=N Dest=A:\MyDataFolder\MyData.csv Sched=A format=CSV
DT85>
Unloading: UNTITLED A Data (5 records) -> A:\MyDataFolder\MyData.csv
Unload complete.

c) Copy data to USB in DBD format.

Description: Copy the data of current job to a USB memory device in DBD format.

Code example:
CopyD Dest=A: format=dbd

DT80 output:
CopyD Dest=A: format=dbd
DT85>
Unloading: UNTITLED A Data (5 records) ->
A:\SN085533\JOBS\UNTITLED\005_20100409T131357.DBD
Unload complete.

d) Copy data to USB in Fixed format.

Description: Copy the data of current job to a USB memory device to folder \MyStore\ in fixed format.

Code example:
CopyD Dest=A:\MyStore\ Format=Fixed

DT80 output:
CopyD Dest=A:\MyStore\ Format=Fixed
DT85>
Unloading: UNTITLED A Data (5 records) -> A:\MyStore\UNTITLED\010_20100409T133507.TXT
Unload complete.

e) *Copy all internal data to USB in CSV format as separate files.*

Description: Copy the all the data from internal memory to USB memory device creating separate CSV files

Code example:
copyd job=* dest=a: format=csv sched=a merge=n

DT80 output:
copyd job=* dest=a: format=csv sched=a merge=n
DT85>
Unloading: EAST A Data (3184 records) ->
A:\SN085533\JOBS\EAST\A\011_20100419T141205.CSV
Unload complete.

Unloading: NORTH A Data (34952 records) ->
A:\SN085533\JOBS\NORTH\A\012_20100419T141205.CSV
Unload complete.

Unloading: SOUTH A Data (764 records) ->
A:\SN085533\JOBS\SOUTH\A\013_20100419T141205.CSV
Unload complete.

Unloading: UNTITLED A Data (0 records) ->
A:\SN085533\JOBS\UNTITLED\A\014_20100419T141205.CSV
Unload complete.

Unloading: WEST A Data (13917 records) ->
A:\SN085533\JOBS\WEST\A\015_20100419T141205.CSV
Unload complete.

Copy data to FTP site:

a) Copy data to FTP site in CSV format.

Description: Copy the data of current job to a FTP site in CSV format

Code example:
CopyD Dest=FTP://DATATAKER:DATATAKER@MyFTPSite.com.au

DT80 output:
CopyD Dest=FTP://DATATAKER:DATATAKER@ MyFTPSite.com.au
DT85>
FTP: Connecting to server MyFTPSite.com.au (192.168.1.2)...
FTP: Connected.

Unloading: UNTITLED A Data (5 records) -> FTP://DATATAKER:DATATAKER@ MyFTPSite.com.au /UNTITLED/012_20100409T135957.CSV
FTP: Transfer successful. Transferred 255 bytes.
Unload complete.

b) Copy previous 5 seconds of data to FTP site in CSV format.

Description: Copy the data of current job to a FTP site in CSV format

Code example:
CopyD Dest=FTP://DATATAKER:DATATAKER@MyFTPSite.com.au Start=-0:0:5

DT80 output:
CopyD Dest=FTP://DATATAKER:DATATAKER@ MyFTPSite.com.au
DT85>
FTP: Connecting to server MyFTPSite.com.au (192.168.1.2)...
FTP: Connected.
Unloading: UNTITLED A Data (5 records) -> FTP://DATATAKER:DATATAKER@ MyFTPSite.com.au /UNTITLED/012_20100409T135957.CSV
FTP: Transfer successful. Transferred 255 bytes.

Unload complete.

c) Copy schedule A data to FTP site in DBD format.

Description: Copy the schedule A data of current job to a FTP site in DBD format

Code example:
CopyD Dest=FTP://DATATAKER:DATATAKER@MyFTPSite.com.au Format=dbd

DT80 output:
CopyD Dest=FTP://DATATAKER:DATATAKER@ MyFTPSite.com.au
DT85>
FTP: Connecting to server MyFTPSite.com.au (192.168.1.2)...
FTP: Connected.
Unloading: UNTITLED A Data (5 records) -> FTP://DATATAKER:DATATAKER@ MyFTPSite.com.au /UNTITLED/013_20100409T140510.DBD
FTP: Transfer successful. Transferred 255 bytes.
Unload complete.