1. Overview

The monitor is utilized as the man machine interface in the system SIMADYN D.

Function Set of the Monitor

- Reviewing the Function Block Connectors
- Reviewing and Changing the Connector Values
- Reviewing and Changing Connections
- Changes Saved in the EEPROM of the Program Memory Sub-Module
- Reviewing and Acknowledging Plain Text Messages
- Information Output via Connector Attributes
- Information Output via MES/PAR Values
- Terminating Commands
- Memory Back Up

2. Command Set

2.1 Available Commands

Code	No. Operands	Abbreviation	Significance		Remark
BM	–	–	break	monitor	Delete Last Command
CV	2	lgn=val	change	value	Remains Unchanged for SE
CV	2	adr=val	change	value	Remains Unchanged for SE
DC	1	lgn	display	connection	Review Connection
DF	–	val	display	failure	Message Block
DI	–		display	information	Set Path
DI	1..10	lgn	display	information	Connector Attribute
DP	1	val	display	parameter	PAR Path
DT	1	val	display	terminal	MES Path
DV	–..10	lgn|adr	display	value	Continuous Value
DX	1..10	lgn	display	address	Name & Address
QV	–..10	lgn|adr	query	value	Name & Continuous Value
RF	–		reset	failure	Delete Message Block Buffer
RM	–..1		reset	monitor	Deactivated Commands
SE	–..1	val	save	EEPROM	Enter last CV Value
CC	2	lgn,val	change	connection	Remains for SC
CC	2	lgn,lgn	change	connection	Remains for SC
SC	–	–	save	connection	Enter Last CC Value
M0	–	–			Memory Backup in Byte Form

Explanation of the Abbreviations lgn, addr, val:

lgn Logical Name

Path Name (i.e. FP-A.ADD1.CON)
or FP Connector (i.e. $I_SET)

With output control character suffix:

%	only for N2 and N4	(i.e. Y%)
H	as hex value	(i.e. Y H)
B	as binary vector	(i.e. Y B)
E	expanded	(i.e. DX1 Y E)

addr Address

0X + Segment + Offset (i.e. 0X20:A1FE)
or 0X (i.e. 0X)
or 0X + Offset (i.e. 0XA1FE)

With output control character suffix:

H as hex value (i.e. 0H20 = 20 words)

val Value

1)

The number representation is implemented exclusively according to the ergonomics specification (Doc. No. 01.15.00 version 1.1 from 03.05.88).

2)

hex	1HFF	Number, byte, hex, value / byte
	2HABCD	Number of bytes, hex, value / word
	0H...	Number bytes according to AMC specifications (default is 2)
ascii	0A_TEXT__TEXT	for NS connectors (Pocket)
	'_TEXT__TEXT'	for NS connectors
	2ABB	
bin	2B0001110101001101	Binary vector
	B1	Binary vector 0000001

!! No dimension specification is permitted for all value variables mentioned under 2).

2.2 Ease of Dialog

The path name specified last is valid for the block level as a default. The commands DT and DP (display terminal (MES=...) or display parameter (PAR=...)) modify the default with their own information. The command DX transfers the address of a connector into the default for address accessing.

The defaults are valid for each board independent of one another:

Example:

Input	Output
DP1 PAR/MES Number	DP1_FP-DRAWG1.ADD1.X
DT3 PAR/MES Number	DT3_FP-CNTROL.INT3.A1
DX1 Connector Name	DX1_ADR(FP-DRAWG1.ADD1.X)=656D:01AC
DV3 0X20:400	DV3_20:400=0020

Defaults:

Pn	Path	Addr.
1	FP-DRAWG1.ADD1.	656D:01AC
2	-	
3	FP-CNTROL.INT3.	0020:0400
4	-	

The defaults are not changed for faulty entries.
Examples to the entries above:

DV3 FP-CNTROL.INT2.AN	DV3_###_(0044)_CONNECTOR NOT FOUND,19
DV3 A1	DV3_FP-CNTROL.INT3.A1=_179.999_%

Explanation:

- : Relevant 'Spaces' or 'Tabs'

2.3 Resetting / Terminating Active Commands

RMn	Resetting the monitor, deactivating all active commands
BMn	Deactivating the last command
DVn	Deactivating an active DVn command
QVn	Deactivating an active DVn command
n= 1..8	Processor number

2.4 Commands

2.4.1 BREAK MONITOR (BM)

The command entered last can be terminated with the BM command. A renewed entry will not delete any further commands. The monitor does not know in which sequence the commands have been entered into the command memory.

Example:

Input	Output
BMn	BMn_DV-DELETED____SIMADYN_D. MONITOR.YYMMDDVxxx

Explanation:

```
YYMMDDVxxx
| | | | |
| | | | +--Version Number
Year| Version
  | Day
  Month
```

2.4.2 CHANGE VALUE (CV)

The CV command changes the values of inputs or initialization connectors. Only constants can, in principle be changed. The command CV checks whether the constant value entered corresponds to the attributes specified during the configuring. An error message is generated when this is not the case.

Only one connector value can be changed for each CV command. The CV command is a non cyclic command. The last CV command remains valid internally in the monitor in order to permit a later storage in EEPROM. The CV command is operated in two modes.

a) Normal Mode:
The block connector is directly accessed with its configured name in this mode. This is followed by an equals sign and the new value (possibly with dimensions).

The complete name is displayed in the reply telegram, followed by an equals sign and the connector value with dimension (when available).

b) Test / Diagnostic Mode:
The CV command can process various input and output formats for test and diagnostic purposes.

Control parameters permit the filling of memory with various formats (HEX, BIN, ASCII). In addition connector values with various number formats can also be changed.

The monitor does not check whether the accessing is permitted. Users with accurate system knowledge should be the only ones that should use this mode (danger of crashing the processor, i.e. by accessing non existent memory).

Examples to a)

Input	Output
CVn FP-X.BST1.X1=179.999%	CVn_FP-X.BST1.X1=_179.999_% <Telegram End, Command End>

The configured dimension is utilized as a default value for time variables.

CVn FP-X.BST1.Y1=10 S	CVn_FP-X.BST1.Y1=_10.0000_[S] <Telegram End, Command End>
CVn FP-X.BST1.Y1=100	CVn_FP-X.BST1.Y1=_100.000_[S] <Telegram End, Command End>

Examples to b)

Input	Output
CVn 0X 20:400=2HFFFF Address ID Segment Offset Input Format Value	CVn_20:400=FFFF <Telegram End, Command End>

Input Format:

1 –> Input in Bytes

2 –> Input in Words (not checked for hex values)

H –> Input in Hex Value

B –>Input in Binary Value

A –> Input in ASCII

Input	Output
CVn 0X20:400= 1HFF CVn 0X20:400= 2HFFFF CVn 0X20:400= 20 CVn 0X20:400= 0ABBBBBBBB CVn 0X20:400= 2ABB	CVn_0020:400=00FF CVn_0020:400=FFFF CVn_0020:400=0014 CVn_0020:400=4242424242424242 (see remark) CVn_0020:400=4242

Remark:

When changing or initially entering ASCII characters, the corresponding memory areas must have a length specification in the first byte. This is automatically fulfilled for NS connectors.
If an attempt is made to save an excessively large hex value in the format 2H, then a hex 'hil' is written to this memory location. Attention – No Warning Occurs !!!

2.4.3 DISPLAY CONNECTION (DC)

The command 'DC 'searches for connections within either function packets, or within a processor module for inputs of a FPC name ($.....). The correspondingly connected 'Connector Output 'is displayed for connector inputs and all connected inputs are displayed for outputs.

Initialization connectors are handled as inputs. A message is displayed for allocation connectors. An indication is given when function packet connections exist for connections within a function packet.

Input	Output
DCn $ANNA	DCn_$ANNA_(FP-X.BST1.Y1_[PNC]_<, FP-X.BST1.X1_[PNC]_>)
DCn FP-X.BST1.Z1	DCn_FP-X.BST1__.Z1_<_BST1.A3
DCn FP-X.BST2.A4	DCn_FP-X.BST2__.A4_>_(BST4.A7,BST11.Z2)
DCn FP-X.BST1.Y1	DCn_FP-X.BST1__.Y1_>_(BST9.A1)
DCn FP-Y.BST1.Y1	DCn_FP-Y.BST1__.Y1_>_$BERLIN_(BST1.Z1,BST2.A2)

< Input
> Output
- Initialization

2.4.4 DISPLAY FAILURE (DF)

The configured message texts are output with the aid of the DF command. The message 'NO MESSAGES PRESENT "is output when no current messages exist. The oldest message is invoked when messages exist and no messages have been output.

The read pointer of the message system is incremented to the next message at each function invocation. If the read pointer is already located on the most current message and this has already been output, then the text 'NO OTHER MESSAGES "is output and the pointer switched to the oldest message. The DF command is a non cyclic command. If the DF is invoked with parameters, then the read pointer is always located to the oldest message and this is then output.

Input	Output
DFn	DFn_***_(0007)_NO MESSAGES PRESENT
DFn	DFn_14.07.14:23:27.63_TEXT:_VALUE_[DIM] | | | | | | Day| | Minute | | Hour | | Month | 1/100 Seconds Second
DFnm	DFn_14.07.14:23:27.63_TEXT:_VALUE_[DIM] | Oldest Message

m : Number > 0

2.4.5 DISPLAY INFORMATION (DI)

The DI command is an information command with the aid of which, dependent upon the parameter settings, information regarding path names can be invoked.

Invoking without parameters causes the previously processed path name to be output down to the block level. A dialog error will cause the previously correctly processed path name to be output.

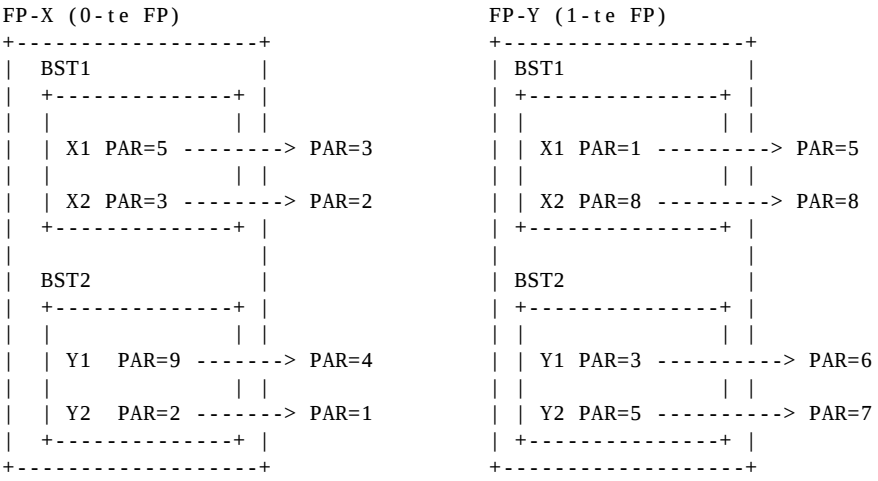
Input	Output
DIn	DIn_FP-X.BST1.

Invoking with parameters causes information regarding the entered path names to be output. The information corresponds to the connector attributes configured in STRUC L and additionally the sampling time in which the block is configured.

Input	Output
DIn FP-X.BST1.X7	DIn_FP-X.BST1.TN_T2=_64[MS]_ADD8_ N2_<___3.20[M/S]_PAR_=_11_FORM=2_ @TYPE=T2

2.4.6 DISPLAY PARAMETER (DP)

The DP command displays the path names of the connectors defined by PAR attributes during the configuring (within a processor). The PAR numbers are sorted within individual FP's, during the initialization and additionally contiguously numbered over all FP's. The criterion for the contiguous numbering is the sequence of the FP's in the master program. The DP command is a non cyclic command.



There are two access possibilities:

a) Access to the contiguously sorted PAR numbers.

Input	Output
DPn 5	DPn_FP-Y.BST1.X1

The entered PAR number does not conform to the configured number.

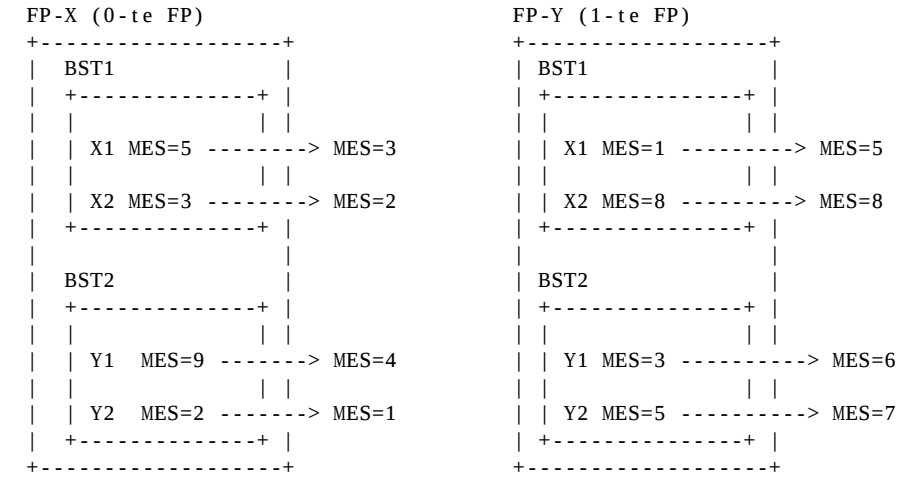
b) Direct access via the configured PAR number.

Input	Output
DPn 1.5	DPn_FP-Y.BST2.Y2

The first parameter defines the required FP, the second parameter defines the configured PAR number. The FP sequence is defined in the master program. The first FP corresponds to the parameter 0.

2.4.7 DISPLAY TERMINAL (DT) MES

The DT command displays the path names of the connectors defined by the MES attributes during the configuring (within a processor). The MES numbers are sorted within individual FP's, during the initialization and additionally contiguously numbered over all FP's. The criterion for the contiguous numbering is the sequence of the FP's in the master program. The DT command is a non cyclic command.



There are two access possibilities:

a) Access to the contiguously sorted MES number.

Input	Output
DTn 5	DTn_FP-Y.BST1.X1

The entered MES number does not conform to the configured number.

b) Direct access via the configured MES number.

Input	Output
DTn 1.5	DTn_FP-Y.BST2.Y2

The first parameter determines the desired FP, the second parameter, the configured MES number. The FP sequence is defined in the master program. The first FP corresponds to the parameter 0.

2.4.8 DISPLAY VALUE (DV)

The DV command outputs the values of all the configured block connectors. The DV is a cyclic command, i.e. the values are continuously output. A maximum of 10 connector values can be simultaneously processed.

The output format is defined by corresponding control characters. The entry of a DV command without parameters terminates the DV command. The DV command can be operated in two modes.

a) Normal Mode:
One or several block connector(s) are directly accessed with its (their) configured name(s) in this mode.

The complete name(s) is (are) repeated in the first reply telegram and the connector value(s) output with dimension (when available). The following reply telegrams only contain the command header and the value(s) (see examples).

b) Test Mode:
The DV command supplies various input and output formats for test and diagnostic purposes. All memory areas can be reviewed with differing formats with the aid of control parameters. In addition, it is possible to display connector values in various number formats.

The monitor does not check whether the accessing is permitted. This mode should only be utilized by users with accurate system knowledge (danger of crashing – i.e. by accessing non existent memory).

Examples to a):

Input	Output
DVn FP-X.BST1.X1	<1st. Reply Telegram> DVn_FP-X.BST1.X1=_179.999_% <Telegram End> <i. Reply Telegram> DVn_179.999_% <Telegram End>
DVn	DVn_179.999_% <Telegram End> DVn <Telegram End, Command End>

Simultaneous output of several connector values:

Input	Output
DVn FP-X.BST1.X1, BST3.Y1, FP-Y.BST2.Z1, X4	<1st. Reply Telegram> DVn_FP-X.BST1.X1=_179.999_% _FP-X.BST3.Y1=_10.9999_[MS], _FP-Y.BST2.Z1=_100.000_%, _FP-Y.BST2.X4=_0B01010101_01010101 <Telegram End> <i. Reply Telegram> DVn_179.999_%,_10.9999_[MS],_100.000_%, _0B01010101_01010101 <Telegram End> DVn_179.999_%,_10.9999_[MS],_100.000_%, _0B01010101_01010101 <Telegram End>
DVn	DVn <Telegram End, Command End>

Terminate command.

Input	Output
DVn	DVn

Continuous value output can only be detected when the values change.

Examples to b):

Input	Output
DVn 0X 20:400 2H1---Output Length | | | | | | | | | | | | Address ID | | | | Segment| | | Offset | Output Format	<1st. Telegram> DVn_20:400=0020 <Telegram End> <i. Telegram> DVn_20:400=0020 <Telegram End>
DVn	DVn <Telegram End, Command End>

Output Format :

H –> Output in Words H1 –> 1 word from set address

1H –> Output in Bytes 1H4 –> 4 bytes from set address

2H –> Output in Words 2H8 –> 8 words from set address

Input	Output
	<1st. Reply Telegram = i. Reply Telegram>
DVn 0X20:400 H	DVn_20:400=0020
DVn 0X20:400 1H	DVn_20:400=20
DVn 0X20:400 2H	DVn_20:400=0020
DVn 0X20:400 H8	DVn_20:400=_0020_0020_0040_0000_ 0020_0020_0040_0000
DVn 0X20:400 1H8	DVn_20:400=_20_00_20_00_40_00_00_00
DVn 0X20:400 2H8	DVn_20:400=_0020_0020_0040_0000 0020_0020_0040_0000

Combined input:

Input	Output
DVn 0X20:400 2H,X1,0X20:600 1H	<1st. Reply Telegram> DVn_20:400=0020,_FP-X.BST1.X1=_179.999_% 20:600=20 <i. Reply Telegram> DVn20:400=0020,_179.999_%, 20:600=20

Output of connector values in hex, binary and ASCII format.

Input	Output
DVn X1 2H	<1st. Reply Telegram> DVn_FP-X.BST1.X1=2H0000 <i. Reply Telegram> DVn2H0000
DVn X2,X2 1H,X2 1B	<1st. Reply Telegram> DVn_FP-X.BST1.X2=FREI, _FP-X.BST1.X2=1HFF, _FP-X.BST1.X2=1B11111111 <i. Reply Telegram> DVFREI,1HFF,1B11111111
DVn X3 2H,X3 2A	<1st. Reply Telegram> DVn_FP-X.BST1.X3=2H4141, _FP-X.BST1.X3=2AAA <i. Reply Telegram> DVn2H4141,2AAA

If the memory value cannot be displayed in ASCII characters, then only the command header is output with the correct format specifications. Any characters that cannot be correctly displayed are not suppressed.

2.4.9 QUERY VALUE (QV)

The QV command permits the output of the values of all configured block connectors.

The QV is a cyclic command, i.e. the values are continuously output. A maximum of 10 connector values can be processed simultaneously. The output format is determined by corresponding control characters. The QV command is terminated by entering a QV command without parameters. The QV command can be operated in two modes.

a) Normal Mode:

One or several block connector(s) can be directly accessed with its (their) configured name(s) in this mode. The complete name(s) is (are) repeated in the first reply telegram and the connector value(s) output with dimension (when available). The following reply telegrams only contain the command header and the value(s) (see examples).

b) Test Mode:

The QV command supplies various input and output formats for test and diagnostic purposes.

All memory areas can be reviewed in various formats with the aid of control parameters. The possibility also exists of displaying the connector values in various number formats. The monitor does not check whether the accessing is permitted. This mode should only be utilized by users with accurate system knowledge (danger of crashing – i.e. when accessing non existent memory).

Examples to a):

Input	Output
QVn FP-X.BST1.X1	<1st.-i. Reply Telegram> QVn_FP-X.BST1.X1=_179.999_% <Telegram End> QVnFP-X.BST1.X1=_179.999_% <Telegram End, Command End>

Simultaneous output of several connector values.

Input	Output
QVn FP-X.BST1.X1, BST3.Y1, FP-Y.BST2.Z1	<1st.-i. Reply Telegram> QVn_FP-X.BST1.X1=_179.999_%, _FP-X.BST3.Y1=_10.9999_[MS], _FP-Y.BST2.Z1=_100.000_% <Telegram End> QVnFP-X.BST1.X1=_179.999_%, _FP-X.BST3.Y1=_10.9999_[MS], _FP-Y.BST2.Z1=_100.000_% <Telegram End, Command End>

Terminate command.

Input	Output
QVn	QVn

Continuous value output can only be detected when the values change.

Examples to b):

Input	Output
QVn 0X 20:400 2H1---Output Length | | | | | | | | | | | | Address ID | | | | Segment| | | Offset | Output Format	<1st. Telegram> QVn_20:400=0020 <Telegram End> <i. Telegram> QVn20:400=0020 <Telegram End> QVn <Telegram End, Command End>

Output Format :

H -> Output in Words H1 -> 1st. word from set address

1H -> Output in Bytes 1H4 -> 4 bytes from set address

2H -> Output in Words 2H8 -> 8 words from set address

Input	Output
QVn 0X20:400 H QVn 0X20:400 1H QVn 0X20:400 2H	<1st. Reply Telegram = i. Reply Telegram> QVn_20:400=0020 QVn_20:400=20 QVn_20:400=0020
QVn 0X20:400 H8	QVn_20:400=_0020_0020_0040_0000_ 0020_0020_0040_0000_
QVn 0X20:400 1H8	QVn_20:400=_20_00_20_00_40_00_00_00
QVn 0X20:400 2H8	QVn_20:400=_0020_0020_0040_0000_ 0020_0020_0040_0000

Combined Input:

Input	Output
QVn 0X20:400 2H,X1,0X20:600 1H	<1st.-i. Reply Telegram> QVn_20:400=0020,_FP-X.BST1.X1=_179.999_%, 20:600=_20_00_20_00_40_00

Output of connector values in decimal, hex, binary and ASCII format.

Input	Output
QVn X1 2H	<1st.-i. Reply Telegram> QVn_FP-X.BST1.X1=2H0000
QVn X2,X2 1H,X2 1B	<1st.-i. Reply Telegram> QVn_FP-X.BST1.X2=FREI _FP-X.BST1.X2=1HFF, _FP-X.BST1.X2=1B11111111
QVn X3 2H,X3 2A	<1st.-i. Reply Telegram QVn_FP-X.BST1.X3=2H4141, FP-X.BST1.X3=2AAA

When the memory value cannot be displayed in ASCII characters, then only the command header is correctly output with the format specification. Any possible ‘‘Smudge Characters’’ are not suppressed.

2.4.10 DISPLAY ADDRESS (DX)

The DX command permits the connector address, the pointer to the address and the address value to be output. When this command is entered, without extension, then only the connector address is output. All values are output and the command runs cyclically when the command entry occurs with the extension E.

Input	Output
DXn FP-X.BST1.X1	DXn_ADR(FP-X.BST1.X1)=0687:01A4 | Segment: Offset

Input	Output
DXn FP-X.BST1.X1 E	DXn_ADR(FP-X.BST1.X1)=0687:01A4 /_PTR(ADR)=0687:00D8_/_VAL (ADR)=0000

ADR(FP-X.BST1.X1) = Address of the connector,
PTR(ADR) = Pointer to the address,
VAL(ADR) = Connector value.

2.4.11 RESET FAILURE (RF)

The command RF deletes all the messages made available from the message sequencing system. The command resets the read pointer to the most current (last) message and deletes up to the oldest message. Deleting only sections of the messages is not possible.

Input	Output
RFn	RFn_***_(0004)_NO_MESSAGES_PRESENT
RFn	RFn_***_(0006)_MESSAGES_CANCELLED

2.4.12 MONITOR RESET (RM)

The command RM deletes the total command and operand memory of the monitor. No commands remain active after implementation of this command. The preset to the last path name remains intact.

Input Normal Mode:

Input	Output
RMn	RMn____SIMADYN_D.MONITOR.YYMMDDVxxx

Explanation:

YYMMDDVxxx
| | | | |
| | | | +--Version Number
Year| Version
| Day
Month

Input Test Mode:

Input	Output
RMn1	RMn____SIMADYN_D.MONITOR.YYMMDDVxxx ---LNG_MO_C(KB):32*USR1/1***CRLF _TX_IN_MS_***TM:T1/T1:32/T2:64/T3:128/ T4:256/T5:512<CRLF> OPR:S:O<CRLF> M_D:S:O<CRLF> A_D:S:O<CRLF> H_D:S:O<CRLF> X_C:S:O<CRLF> M_C:S:O<CRLF> E_C:S:O<CRLF>

LNG_MO_C(KB)	=	LENGTH OF MONITOR CODE IN KILO BYTES (MO)
USR1/1	=	CURRENT USER FROM NUMBER OF TOTAL USERS
TX_IN_MS	=	SAMPLING TIME IN MS
TM:T1:32	=	SAMPLING TIME MONITOR
Tn:32	=	SAMPLING TIME OF THE SUB–TASKS

OPR:S:O	=	OPERAND MEMORY	SEGMENT: OFFSET
M_D:S:O	=	MONITOR DATA MEMORY	SEGMENT: OFFSET
A_D:S:O	=	ASSEMBLER DATA MEMORY	SEGMENT: OFFSET
H_D:S:O	=	HEX MONITOR	SEGMENT: OFFSET
X_C:S:O	=	TEXT MEMORY	SEGMENT: OFFSET
M_C:S:O	=	MONITOR CODE START (MO1)	SEGMENT: OFFSET
E_C:S:O	=	MONITOR CODE END (MO1)	SEGMENT: OFFSET

2.4.13 SAVE EEPROM (SE)

The SE command saves the values that have been changed with the CV command. The SE command only acts upon the previous CV changes.

After a restart, the originally configured data, loaded from EPROM into RAM, is overwritten with the current data contained in the EEPROM.

The monitor checks whether sufficient EEPROM memory is available. A message is generated when insufficient memory is available. The monitor also checks whether the data to be saved has been correctly transferred to EEPROM.

The SE command is activated after initialization, i.e. values can be saved into EEPROM at any time.

SE entry after a CV command:

Input	Output
SEn	SEn_FP-X.BST1.X1=_179.999_%

SE entry without previous CV command:

Input	Output
SEn	SEn_###_(0070)_NO VALUE SAVED, 04 | | Error Number (see 3.1) Error Column Input Telegram

SE Command Deactivation:
If an SE command is invoked after deactivation of the SE command, then the previously changed value is not saved into EEPROM.

Input	Output
SEn0	SEn_***_(0008)_SE COMMAND DEACTIVATED

SE Command Activation:
A deactivated SE command can be reactivated, i.e. saving a previously changed value into EEPROM is possible.

Input	Output
SEn1	SEn_***_(0009)_SE COMMAND ACTIVATED

2.4.14 CHANGE CONNECTION (CC)

The change connection command permits connections to be opened and new connections to be created.

'CC' incorporates several functions:

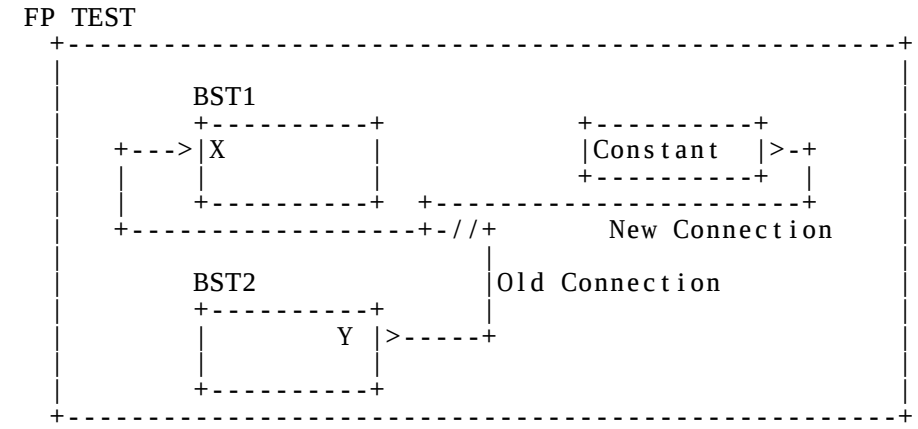
a) Open an existing connection.
b) Create a connection for / within a certain sampling time.
c) Create a connection over sampling times.

Marginal conditions:

- Connection changes only permitted within a function packet.
- Only inputs can be rearranged.
- Connection changes via sampling times must have export and input blocks with corresponding sampling times and
  free transport capability must exist.

a) Open connection and set to a constant.

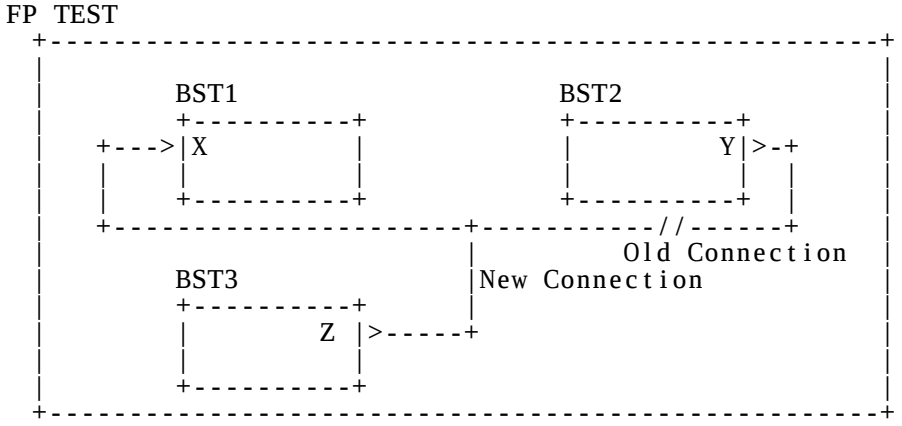
Overview (Simplified)



Input	Output
CC1 FP-TEST1.BST1.X,0	CC1_FP-TEST1.BST1.X_=_0.00000_[M/S]

b) Create a connection for / within a sampling time.

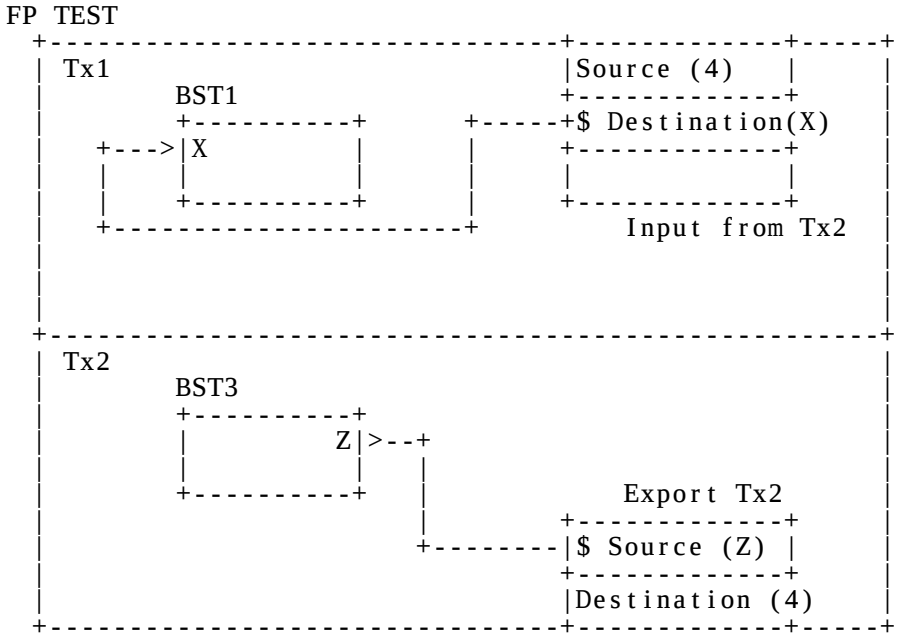
Overview (Simplified)



Input	Output
CC1 FP-TEST1.BST1.X,BST3.Z6. .	CC1_FP-TEST1.BST1.X_<_BST3.Z

c) Create a connection over sampling times.

Overview (Simplified)



Input	Output
CCn FP-TEST1.BST1.X,BST3.Z	CCn_FP-TEST1.BST1.X_<_BST3.Z

2.4.15 SAVE CONNECTION (SC)

The 'SC' command saves connection changes into EEPROM. Only the most current connection changes will be saved. The memory requirement varies, dependent upon the change type, between 7 and 48 bytes. A read check is implemented after saving each byte. The 'SC' command returns an indicator when all the data has been transferred to the EEPROM.

Input	Output
SCn	SCn_FP-TEST1.BST1.X_<_BST3.Z

When the SC command implementation fails, then a message is generated and the data is not transferred into the EEPROM.

2.4.16 MEMORY OUTPUT (M0)

A total of 128 bytes, starting from the entered address, is output in non transparent mode to the specified address (in the form 'Seg: Off = '). This command is non cyclic.

Input:

M0n 0X SEG: OFF.

Output:

M0n SEG: OFF = 'Output of 128 Bytes to Specified Address'.

3. Error Messages

Error Texts

Syntax – ERROR

Error Number	Error Text
1	'NO FP NAME EXISTS'
3	'ONLY FP OR FG VALID'
4	'NAME EXPECTED'
5	' "," EXPECTED'
6	'OFFSET EXPECTED'
7	'CONNECTOR NAME EXPECTED'
8	'HEX VALUE EXPECTED'
9	'DEC VALUE EXPECTED'
10	'BIN VALUE EXPECTED'
11	'DIMENSION EXPECTED'
12	' "]" EXPECTED'
13	'OUTPUT CONTROL SYMBOL EXPECTED'
14	'SYNTAX ERROR'

ASW – Error (Software Arithmetic Errors)

Error Number	Error Text
18	'INVALID CONNECTOR TYPE'
19	'SIGNAL VALUE OUTSIDE OF VALUE RANGE'
20	'INVALID CONTROL CHARACTER'
21	'INVALID CHARACTER'
22	'EXCEEDS NUMBER OF CHARACTERS'
23	'INVALID NORMALIZED FACTOR'
24	'NO FORMAT VALID'
25	'INVALID DIMENSION NUMBER'
26	'INVALID TIME VALID'
27	'MIN. VALUE LARGER THAN MAX. VALUE'

General Errors

Error Number	Error Text
30	'FG OR FB NAME INVALID HERE'
31	' "37," INVALID'
32	'INPUT CONNECTOR IS NOT INPUT OR INIT'
33	'OPERANDS INVALID'
34	'NUMBER OF OPERANDS INCORRECT'
35	'CONNECTOR IS NO OUTPUT'
36	'FPC TYPE NO CHANGE ALLOWED'
37	'NO FB CONNECTION EXISTS'
38	'NO ACCESS TO MESSAGE SYSTEM'
39	'CONVERSION NOT POSSIBLE'

AMC – Access Errors

Error Number	Error Text
40	'DIMENSION DOES NOT EXIST'
41	'FP NAMES NOT FOUND'
42	'FG NAMES NOT FOUND'
43	'FB NAMES NOT FOUND'
44	'CONNECTOR NOT FOUND'
45	'FP NAME NOT IDENTICAL'
46	'FB CONNECTION EXISTS'

Arithmetic Errors

Error Number	Error Text
50	'VALUE TOO HIGH'
51	'VALUE INVALID'
52	'BOOLEAN: ONLY 0 OR 1 VALID'
53	'DIMENSION HAS TO BE TIME PARAMETER'
54	'TIME VALUE HAS TO BE POSITIVE'
55	'VALUE HAS TO BE POSITIVE'
56	'VALUE OUTSIDE MIN/MAX RANGE'
57	'STRING TOO LONG'
58	'INCORRECT CONNECTOR FORMAT'
59	'CONNECTOR FORMAT DOES NOT MATCH'

Monitor Errors

Error Number	Error Text
60	'COMMAND MEMORY ERROR'
61	'COMMAND NOT IMPLEMENTED'
62	'NOT IMPLEMENTED'
63	'OPERAND MEMORY ERROR'
64	'SAVE EEPROM CURRENTLY NOT AVAILABLE'
65	'LOCK_CHANGE'
69	'BLOCK COMMAND NOT YET IMPLEMENTED'

Command Errors

Error Number	Error Text
70	'NO VALUE STORED'
71	'INCORRECT EEPROM IDENTIFICATION'
72	'NO MEMORY EXISTS'
73	'EEPROM NOT LEGIBLE'
74	'NO EEPROM EXISTS'
75	'DATA SAVED'
76	'EEPROM NOT LEGIBLE – DATA INCORRECT'
77	'SAVING NOT POSSIBLE'
78	'TEST BYTE INCORRECT'
79	'NO MESSAGE SYSTEM GENERATED'

Message Texts:

Message Number	Message Text
1	'NO ENTRY UNDER THIS NUMBER'
2	'NUMBER OUTSIDE VALID RANGE'
3	'NUMBER EXPECTED'
4	'NO MESSAGES'
5	'NO OTHER MESSAGES'
6	'MESSAGES CANCELLED'
7	'NO MESSAGES PRESENT'
8	'SE COMMAND DEACTIVATED'
9	'SE COMMAND ACTIVATED'
10	'ALLOCATION CONNECTOR – NO CONNECTION'
11	'NO FP CONNECTION EXISTS'
12	'NO FB CONNECTION EXISTS'
13	'NO FB DIRECT CONNECTION EXISTS'
14	'NO BACKUP MEMORY EXISTS'
15	'CONNECTION TYPE NOT DEFINED'
16	'NO FREE IMPORT TRANSPORT'
17	'NO FREE EXPORT TRANSPORT'
18	'NO IMPORT BLOCK'
19	'NO EXPORT BLOCK'
20	'NO BLOCK LIST OF TASK SEGMENT'
21	'EEPROM DELETED'
22	'NO EEPROM EXISTS'
23	'EEPROM FAULT AT ADDRESS'
24	'EEPROM CHECK OK'
25	'EEPROM FAULT: NUMBER OF LOOPS'

4. Explanations

Pn	Processor Number (1..8).
<.....>	Explanation.
_____	Relevant 'Spaces' or 'Tabs'.
CRLF	Carriage Return Line Feed.