

DYNACODE II

Interface Description



Copyright by Carl Valentin GmbH / 7957215.0220

Information on the scope of delivery, appearance, performance, dimensions and weight reflect our knowledge at the time of printing.

We reserve the rights to make modifications.

All rights, including those regarding the translation, are reserved.

No part of this document may be reproduced in any form (print, photocopy or any other method) or edited, copied or distributed electronically without written permission from Carl Valentin GmbH.

Due to the constant further development of our devices discrepancies between manual and device can occur.

Please check www.carl-valentin.de for the latest update.

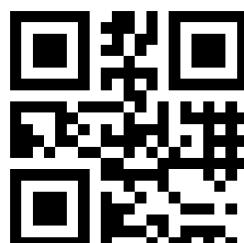
Trademarks

All named brands or trademarks are registered brands or registered trademarks of their respective owners and may not be separately labelled. It must not be concluded from the missing labelling that it is not a registered brand or a registered trademark.

Carl Valentin direct print modules comply with the following EU directives:

CE EU Low-Voltage Directive (2014/35/EU)

EU Electromagnetic Compatibility Directive (2014/30/EU)



REDEMAC
3540 Griffith St, Saint-Laurent, Quebec H4T 1A7
Phone: (888) 335-9570

www.redemac.com
request@redemac.com

Table of Contents

1	Serial Data Transmission	5
1.1	Connector Assignment (9-pin DSUB Socket)	5
1.2	Connection Plan RS232	6
2	Parallel Data Transmission	7
2.1	Connection Plan	7
3	Text, Bar Code, Graphic	9
3.1	Definition of Rotation	9
3.2	Definition of Datum Point.....	9
4	Data Format.....	11
4.1	Explication	12
4.2	Definition of Field Attributes/Field Properties (optional)	13
4.3	Field Name	14
4.4	Field Selection by Free Definable Field Number.....	18
5	Mask Set	19
5.1	Text.....	19
5.2	One-Dimensional Bar Code	21
5.3	ITF Bar Code	22
5.4	PDF417	23
5.5	MAXICODE	24
5.6	DataMatrix	25
5.7	GS1 DataMatrix	26
5.8	CODABLOCK F	27
5.9	GS1 DataBar (RSS Code).....	28
5.10	QR Code.....	29
5.11	Aztec Code	30
5.12	Rectangle	31
5.13	Line	31
5.14	Internal Graphic	32
6	Text Set.....	33
6.1	Examples.....	34
7	Graphic Set	35
7.1	General Graphic Format.....	35
7.2	Graphic in PCX Format	35
7.3	Example PCX File	36
8	Variables.....	37
8.1	Set Structure.....	37
8.2	Link Field	37
8.3	Counter	38
8.4	Extended Counter.....	39
8.5	Date and Time	40
8.6	Format Identifier (Date & Time)....	41
8.7	Currency Variable.....	44
8.8	Shift Variable	45
8.9	User Guiding.....	46
8.10	User Guiding with Mask	47
8.11	Memory Card Data	48
8.12	GS1-128 Parser.....	48
8.13	EPC Calculation (Electronic Product Code).....	49
8.14	Check Digit	50
8.15	Substring	51

9	Parameter Sets	53
9.1	Layout Parameters	53
9.2	Device Settings.....	57
9.3	Interface.....	61
9.4	Network	63
9.5	Sensors	67
9.6	Offset Values	67
9.7	Service Functions	68
9.8	Date & Time.....	71
9.9	Password.....	74
9.10	Compact Flash Card.....	77
9.11	Printing	81
9.12	Emulation.....	85
10	Parameter Sets for C Mode	87
10.1	Machine Parameters	87
10.2	Ribbon Save	89
10.3	I/O Parameters	91
11	Parameter Sets for I Mode	93
11.1	Machine Parameters	93
11.2	I/O Parameters	95
12	Configuration & Status	99
12.1	Autostatus.....	100
13	Monitored Printing.....	103
13.1	Short Introduction	103
13.2	Parameter Sets (Host – Printer).....	103
13.3	Direct Enquiry	104
13.4	Answer Sets (Printer – Host).....	104
13.5	Sample Label.....	106
14	Font Examples	107
14.1	Bitmap Fonts (Not Proportional).....	107
14.2	Bitmap Fonts (Proportional)	107
14.3	Vector Fonts	107
15	Index	109

1 Serial Data Transmission

1.1 Connector Assignment (9-pin DSUB Socket)



Pin	Signal	Description
2	T x D	Transmitting data line
3	R x D	Receiving data line
5	GND	GND signal
7	CTS	HW handshake
8	RTS	HW handshake

1.2 Connection Plan RS232

Software Handshake	Printing system (DSUB 9 plug)	PC (DSUB 25 socket)
	TXD PIN 2	PIN 3 RXD
	RXD PIN 3	PIN 2 TXD
	GND PIN 5	PIN 7 GND
		PIN 4 RTS
		PIN 5 CTS
		PIN 6 DSR
Hardware Handshake	Printing system (DSUB 9 plug)	PC (DSUB 9 socket)
	TXD PIN 2	PIN 2 RXD
	RXD PIN 3	PIN 3 TXD
	GND PIN 5	PIN 5 GND
		PIN 7 RTS
		PIN 8 CTS
		PIN 6 DSR
Hardware Handshake	Printing system (DSUB 9 plug)	PC (DSUB 25 socket)
	TXD PIN 2	PIN 3 RXD
	RXD PIN 3	PIN 2 TXD
	GND PIN 5	PIN 7 GND
	CTS PIN 7	PIN 4 RTS
	RTS PIN 8	PIN 5 CTS
Hardware Handshake	Printing system (DSUB 9 plug)	PC (DSUB 9 socket)
	TXD PIN 2	PIN 2 RXD
	RXD PIN 3	PIN 3 TXD
	GND PIN 5	PIN 5 GND
	CTS PIN 7	PIN 7 RTS
	RTS PIN 8	PIN 8 CTS

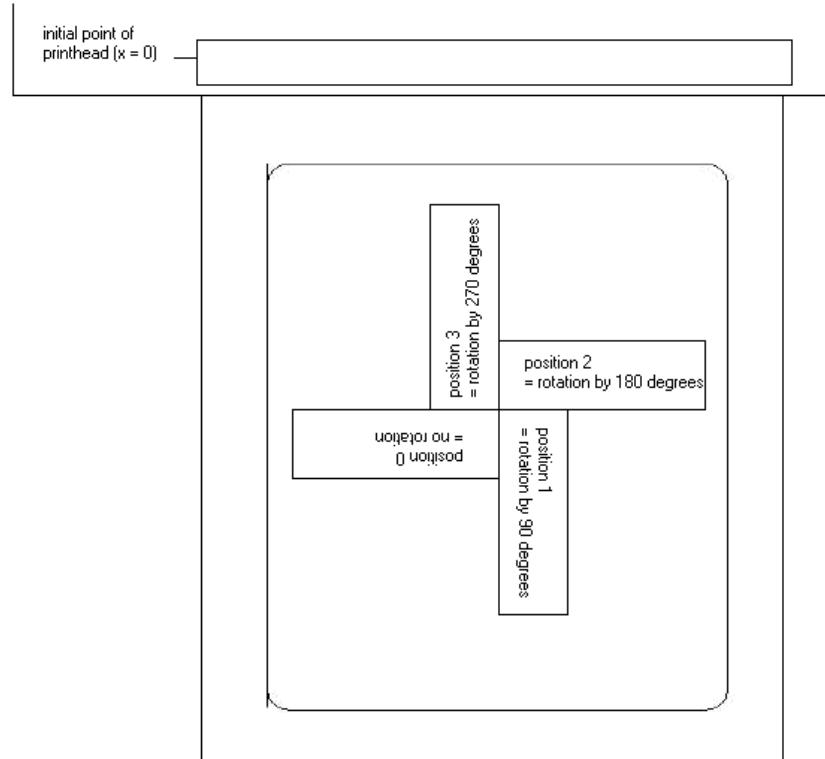
2 Parallel Data Transmission

2.1 Connection Plan

Signal Pin no.	Signal name	Direction	Function
1	STROBE	(Input)	The STROBE signal indicates that data can be received. The impulse width to the receiving line has to be 0,5 µs at least.
2	DATA 0	(Input)	The signals are data bits sent to the direct print module. A HIGH level corresponds to logical 1 and a LOW level to logical 0.
3	DATA 1	(Input)	
4	DATA 2	(Input)	
5	DATA 3	(Input)	
6	DATA 4	(Input)	
7	DATA 5	(Input)	
8	DATA 6	(Input)	
9	DATA 7	(Input)	
10	ACK/	(Output)	An impulse of approx. 12 µs confirms data input for a LOW level and signalizes the further listening watch of the direct print module.
11	BUSY	(Output)	A HIGH level indicates that the direct print module cannot receive any data. On the following conditions the signal HIGH is possible: 1) for data input (impulse for each sign) 2) during a printing process 3) in Offline status 4) for printing systems failures
12	PE	(Output)	A HIGH level indicates that paper is used up.
13	SELECT	(Output)	High Online
14	AUTOFEED		
15	FAULT/	(Output)	Signal goes to LOW, in case 1) the paper is used up 2) the direct print module is Offline or 3) an error occurs.
16	INIT/	(Input)	A LOW level initializes the direct print module
17	SELECTIN/	(Input)	A LOW level informs the direct print module to be addressed
18-25	GND		

3 Text, Bar Code, Graphic

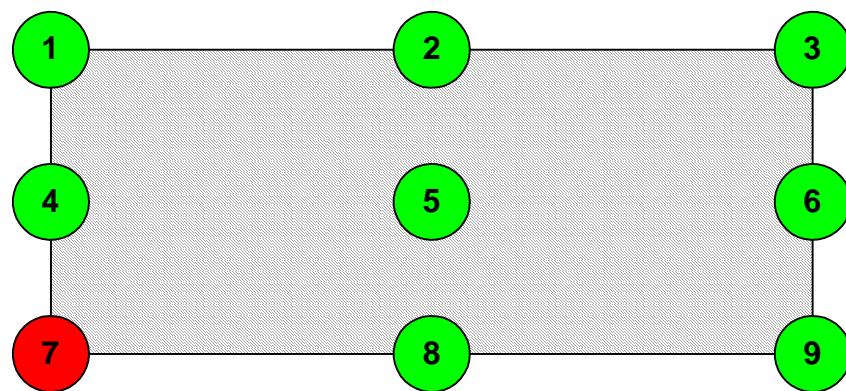
3.1 Definition of Rotation



3.2 Definition of Datum Point

The so-called datum point is the relation point for indication of position. In the meantime the datum point is also the point at which the selected object is rotated.

To determine the datum point in the mask sets, the possible datum points are numbered from left top (1) to right bottom (9). The default datum point is left bottom (7). This datum point is also used even if no indication is found in the mask set.



4 Data Format

The data format consists of four parties:

- Mask set
- Text
- Graphic
- Command

For a n-line layout the following has to be transmitted:

- n - mask sets
- n - text sets
- n - graphic sets (if necessary)
- 1 - command set



NOTICE!

The command set always has to be transmitted at the end!

To each text on a layout belong one MASK SET and one TEXT SET with the same field number.

To each code on a layout belong one MASK SET, one TEXT SET and one CODE SET with the same field number.

To each box or line on a layout belongs only one MASK SET.

To each graphic on a layout belong several GRAPHIC SETS according to its size res. height, e.g. a graphic with a height of 10 mm needs 80 graphic sets.

Examples

Layout with 3 lines of text:	3 mask sets 3 text sets 1 command set
Layout with 2 lines of text, 1 box and 3 lines	6 mask sets 2 text sets 1 command set

For ALL data sets the following is valid:

Each set starts with
SOH = start of header → HEX format 01

Each set ends with
ETB = end of data transmission block → HEX-Format 17

Alternatively, the start character SOH can be set to 5E_{Hex}, the end character ETB to 5F_{Hex}. This is necessary if the connected system (e.g. UNIX) cannot transfer control signs.

All other data sets → ASCII format, but they will be transmitted as hexadecimal characters.

Example

A = identification of mask set - transmission: 41_{HEX}
n = field number '01' - transmission: 30_{HEX}, 31_{HEX}

4.1 Explication

- x coordinate:** Distance from right layout rim in mm
Measured from the right layout rim up to the lower left point of the corresponding line
- y coordinate:** Distance from upper layout rim in mm
Measured from the beginning of the layout down to the lower left point of the corresponding line

Bitmap fonts (not proportional)	01 = Font 01	0,8 x 1,1 mm	127 characters
	02 = Font 02	1,2 x 1,7 mm	255 characters
	03 = Font 03	1,8 x 2,6 mm	255 characters
	04 = Font 04	4,0 x 5,6 mm	127 characters
	05 = Font 05	1,8 x 3,2 mm (descender)	255 characters
	06 = Font 06	1,5 x 2,9 mm	127 characters
	07 = Font 07	1,2 x 2,2 mm (descender)	255 characters

Bitmap fonts (proportional)	21 = Font 21	(1,0; 13)	255 characters
	22 = Font 22	(1,8; 21)	255 characters
	23 = Font 23	(2,6; 31)	255 characters
	24 = Font 24	(5,6; 67)	255 characters
	28 = Font 28	(4,0; 48)	255 characters
	29 = Font 29	(0,8; 9)	255 characters



NOTICE!

In order to reach best print results it is recommended always to choose the biggest possible font.

- Vector fonts
(proportional)** When in mode 'proportional text', the height and width of text have to be entered in mm.
These values refer to the capital 'M', i.e. the values of other characters are changing in proportion.

- Vector fonts
(autoscale)** When in autoscale mode, height and width of text has to be entered in mm.
The height of the text refers to all capital letters. When using small characters and descenders the height is changing in proportion. When entering the width, the complete file has to be considered. The text will be adjusted automatically, which means that the width of the characters is changing.

4.2 Definition of Field Attributes/Field Properties (optional)

Explanation

Additionally to mask set 'AM[] ...' the possibility was created to define further field properties. In order to achieve a high flexibility, the field properties received own names/identifications. Therefore the sequence as well as the number of field properties is free. If necessary, the mask set 'AC[]' is transferred additionally to mask set 'AM[]' to the direct print module.

Structure mask set

(SOH)AC[]at1=*value*;at2= *value*;... (ETB)

Attribute (at):	Description
BT BW QZ	ITF 14 (see page 22) bearer bar type bearer bar width quiet zone in 1/100 mm
NAME	Field name (see page 14) definition of field name
FN	Field number (see page 18) Free definable field number

This table is constantly extended. The current version is available on demand.

4.3 Field Name

Application (customized)

When direct print modules are connected to a computer system or machine controls, there is often the requirement that variable data is to be inserted into an existing layout. This data contents come from the superordinate computer system (database) or a machine control (e.g. PLC, scale, ERP system, etc.). Basically, it was always possible to integrate variable data into a 'loaded' layout (mask). The access to certain fields has been effected via the field index, i.e. a consecutive number. This field index is generated by Labelstar Office and can also change with layout changes, whereby the data allocation to the computer system/control is no longer correct.

Example



Print data

```
...
// TEXT (1/100 mm)
(SOH)AM[1]2405;803;0;1;2;4;1;1;0(ETB)
(SOH)BM[1]Feld 1(ETB)
// TEXT (1/100 mm)
(SOH)AM[2]421;856;0;1;2;4;1;1;0(ETB)
(SOH)BM[2]Feld 2(ETB)
// LINES: 2
...
```

The print data contains the definitions for the two text fields. The field index is always in '[]' of the mask or text setting.

If the text field 'Feld 1' is deleted on the layout and then recreated, it gets a new index. In this case '2'. The text field 'Feld 2' gets the index '1'. As a result, an assignment via the field index is used only to a limited extend, without manual post-processing of the layout data.

Explanation

As an alternative to the field index, the assignment can also be made via the field name. A change in the field index has no longer any influence, and a changed layout is still filled in the right places with variable data of the computer system/control system.

Labelstar Office: The print data is supplemented by the following line:

(SOH)AC[1]NAME="**Field name**"(ETB)

The field content defined via the text block can be changed by the computer system/control with the following command:

(SOH)BV[**Field name**]Feld 2(ETB)

This results in the following standard procedure for the connection to a high-level control and/or computer system.

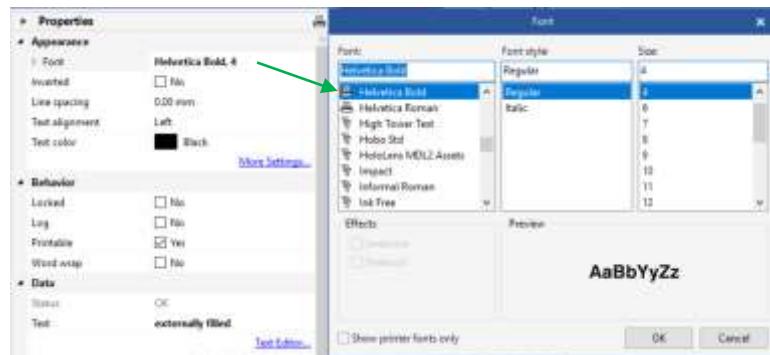
Layout design with Labelstar Office

The field names are automatically transferred by Labelstar Office.



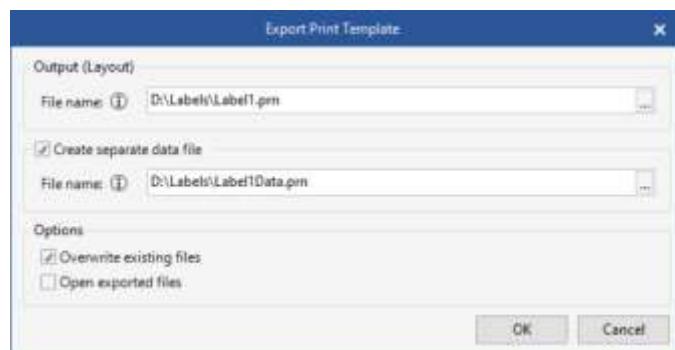
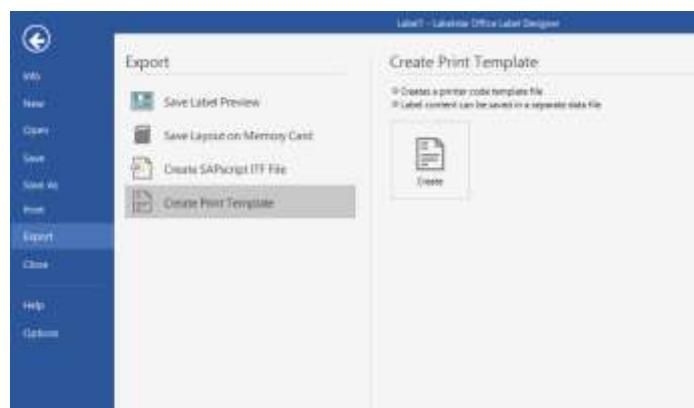
The desired field name (Field1) is entered in the properties of the text field.

For text fields, a printer-internal font must be used. The device-internal fonts are marked by a printer symbol in the list.



Export to a print file and save the layout in the external controller

When the layout design is finished, the layout is exported to a print file. For this, Labelstar Office uses the function **File – Export – Create Print Template**.

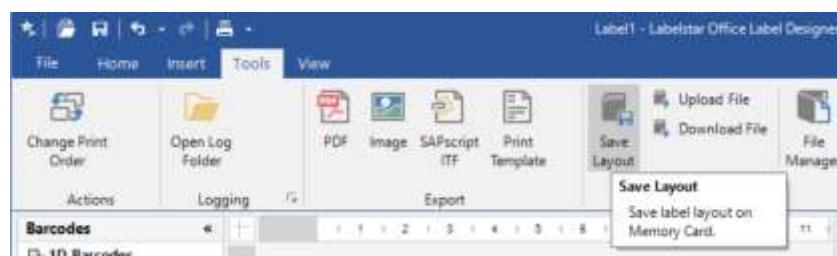


The option **Create separate data file** must be selected, otherwise the line (SOH)**FBC---r-----**(ETB) is included in the print file, which would immediately release a print procedure.

By starting a print procedure, this print file (layout definition / mask definition) is transferred from the controller/computer system to the direct print module first.

Save the layout on the memory card of the direct print module

As an alternative to 'Export to a print file' the layout is saved on the memory card of the direct print module. For this, the memory card tool from Labelstar Office can be used.



The layout must be called by the controller/computer system **before** filling the variable fields.

The following parameter set is used:

(SOH)**FMA---rfilename**(ETB)

The path name is determined when saving and possibly contains a path.

Example: "A:\Standard\eti1".

Filling the variable fields by the controller/computer system

The higher-level control can select the variable fields by the field names and set the contents. Subsequently, the print job is restarted.

Example	(SOH) FMB---rfilename (ETB)	Loading the layout from mc
	(SOH) BV[ArtBez]screws (ETB)	Filling the field "ArtBez" with "screws"
	(SOH) BV[ArtNr]123456789 (ETB)	Filling the field "ArtNr" with "123456789"
	(SOH) FBC---r----- (ETB)	Start printing

4.4 Field Selection by Free Definable Field Number

With the following described attribute, it is possible to assign a free definable field number to a field. This field number does not have to be clear, i.e. several fields can have the same field number. In this way the same field contents can be assigned to different fields.

The following attribute identification is defined:

Attribute: **FN**

Description: free definable field number

After the field number was assigned with AC mask statement,

(SOH) **AC [n] FN=nr** (ETB)

n = field index

nr = free definable field number

it is possible to access to the field and/or the fields with the new BF text statement:

(SOH) **BF [nr] text** (ETB)

nr = field number

text = field contents

Example

```
// Assignment of field number field 1 and field 2
(SOH)AM[1]1000;2500;0;4;2;7;400;400;0(ETB)
(SOH)AC[1]FN=100(ETB)
(SOH)AM[2]2000;2500;0;30;2;4000;9;3;0;1(ETB)
(SOH)AC[2]FN=100(ETB)

// Access to field 1 and field 2 by field number
(SOH)BF[100]1234567890(ETB)
```

5 Mask Set

5.1 Text

AM[n]y;x;p;a;d;z;dy;dx;lp;dp						
A	identification for mask set					
M	identification for protocol version					
n	field number					
y	Y coordinate in 1/100 mm					
x	X coordinate in 1/100 mm					
p	identification for phantom field 0 = print 1 = no print					
a	identification for field type 1 = bitmap font 2 = bitmap font inverse 4 = vector font 5 = vector font autoscale 6 = vector font inverse 7 = vector font autoscale inverse					
d	rotation 0 = 0° 2 = 180° 1 = 90° 3 = 270°					
character set not proportional bitmap fonts (1+2)						
01 = FONT 01 0,8 x 1,1 mm 127 characters						
02 = FONT 02 1,2 x 1,7 mm 255 characters						
03 = FONT 03 1,8 x 2,6 mm 255 characters						
04 = FONT 04 4,0 x 5,6 mm 127 characters						
05 = FONT 05 1,8 x 3,2 mm - descender 255 characters						
07 = FONT 07 1,2 x 2,2 mm - descender 255 characters						
character set proportional bitmap fonts (1+2)						
21 = FONT 21 (1,0; 13) 255 characters						
22 = FONT 22 (1,8; 21) 255 characters						
23 = FONT 23 (2,6; 31) 255 characters						
24 = FONT 24 (5,6; 67) 255 characters						
28 = FONT 28 (4,0; 48) 255 characters						
29 = FONT 29 (0,8; 9) 255 characters						
character set vector fonts (4-7)						
01 = Helvetica Bold						
02 = Helvetica Bold italics						
03 = Helvetica Roman						
04 = Helvetica Roman italics						
05 = Swiss Light						
06 = Swiss Light italics						
07 = Baskerville						
08 = Baskerville italics						
09 = Brush Script						
10 = Brush Script italics						
11 = Monospace						
12 = Monospace italics						
17 = OCR-A						
18 = OCR-A italics						
19 = OCR-B						
20 = OCR-B italics						

dy	extension in direction Y bitmap fonts bektor fonts vector fonts autoscale	factor 0...9 character size in 1/100 mm field height
dx	extension in direction X bitmap fonts bektor fonts vector fonts autoscale	factor 0-9 character size in 1/100 mm field width
lp	distance between single characters in 1/100 mm	
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom	

5.2 One-Dimensional Bar Code

AM[n]y;x;p;a;d;h;v1;v2;pz;z;dp	
A	identification for mask set
M	identification for protocol version
n	Field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	Identification for field type 30 = Code 39 31 = Code 2/5 interleaved 32 = EAN 8 33 = EAN 13 34 = UPC A 35 = UPC E 36 = CODABAR 37 = Code 128 38 = EAN ADD ON 39 = GS1-128 40 = Code 93 41 = PZN 7 42 = 2/5 Industrie 43 = Leitcode 44 = Identcode 46 = Code 39 extended 47 = Code 128 A 48 = Code 128 B 49 = Pharmacode 60 = PZN 8 62 = USPS Intelligent Mail 63 = POSTNET
d	Rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
h	symbol height in 1/100 mm
v1	relation 1; module width 'THICK'
v2	relation 2; module width 'THIN' and/or SC factor
pz	check digit calculation 0 = no check digit calculation 1 = check digit calculation 4 = inverse - no check digit calculation 5 = inverse - check digit calculation
z	human readable line 0 = no human readable line 1 = with human readable line
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right centre

5.3 ITF Bar Code

AM[n]y;x;p;a;d;h;v1;v2;pz;z;dp	
A	identification for mask set
M	identification for protocol version
n	Field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 56 = ITF 14
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
h	symbol height in 1/100 mm
v1	relation 1; module width 'THICK'
v2	relation 2; module width 'THIN' and/or SC factor
pz	check digit calculation 0 = no check digit calculation 1 = check digit calculation 4 = inverse - no check digit calculation 5 = inverse - check digit calculation
z	human readable line 0 = no human readable line 1 = with human readable line
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right centre

In order to print the bearer bars of an ITF 14 barcode, the following additional properties for Code 2/5 interleaved must be set:

For this the following field properties are determined:

Property identifier	Description
BT	bearer bar type 0 = no bars 1 = above/below 2 = rectangle
BW	bearer bar width in 1/100 mm
QZ	quiet zone in 1/100 mm

Example

```
// BARCODE (1/100 mm)
(SOH) AM[1]4498;7076;0;31;2;3000;12;4;0;1;3 (ETB)
(SOH) AC[1]BT=2;BW=150;QZ=600 (ETB)
(SOH) BM[1]1234567890123 (ETB)
```



5.4 PDF417

AM[n]y;x;p:a;d;s;rw;rh;ec;z;dp;c;r	
A	identification for mask set
M	identification for protocol version
n	Field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 50 = PDF417
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
s	symbol size
rw	relation width
rh	relation height
ec	error correction level 0 - ECC Level = 0 1 - ECC Level = 2 2 - ECC Level = 6 3 - ECC Level = 14 4 - ECC Level = 30 5 - ECC Level = 62 6 - ECC Level = 126 7 - ECC Level = 254 8 - ECC Level = 510
z	style 0 = standard 1 = truncated 2 = naked 3 = bare
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom
c	number of columns 0 = automatic, 1-30
r	number of rows 0 = automatic, 3-90

5.5 MAXICODE

AM[n]y;x;p;a;d;0;sn;ns;m;0;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 51 = MAXICODE
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
0	dummy
sn	symbol number
ns	quantity of symbols
m	mode 2 = Structured Message (US Carrier) 3 = Structured Message (International Carrier) 4 = Default message
0	dummy
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

5.6 DataMatrix

AM[n]y;x;p;a;d;s;aw;ah;ec;f;dp			
A	identification for mask set		
M	identification for protocol version		
n	field number		
y	Y position in 1/100 mm		
x	X position in 1/100 mm		
p	identification for phantom field 0 = print 1 = no print		
a	identification for field type 52 = DataMatrix		
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°		
s	symbol size in 1/100 mm		
aw	relation width		
ah	relation height		
ec	Error Correction 0 - ECC Type = 0 ECC Level = 0 Overhead = 0 % 1 - ECC Type = 2* ECC Level = 40 Overhead = 33 % 2 - ECC Type = 3 ECC Level = 50 Overhead = 25 % 3 - ECC Type = 6 ECC Level = 80 Overhead = 33 % 4 - ECC Type = 8 ECC Level = 100 Overhead = 50 % 5 - ECC Type = 9* ECC Level = 110 Overhead = 75 % 6 - ECC Type = 10* ECC Level = 120 Overhead = 50 % 7 - ECC Type = 11* ECC Level = 130 Overhead = 67 % 8 - ECC Type = 12 ECC Level = 140 Overhead = 75 % 9 - ECC Type = 26 ECC Level = 200 Overhead = 0 %		
f	format ID of data 0 - Format ID = 11 (numeric, 2000 characters)* 1 - Format ID = 1 (numeric, 500 characters) 2 - Format ID = 2 (alphabetical, 500 characters) 3 - Format ID = 3 (alphabetical + pointers, 500 characters) 4 - Format ID = 4 (alphanumeric, 500 characters) 5 - Format ID = 5 (7 Bit, 500 characters) 6 - Format ID = 6 (8 Bit, 500 characters) 7 - Format ID = 7 (pre-programmed, 500 characters)* 8 - Format ID = 12 (alphabetical, 2000 characters) 9 - Format ID = 14 (alphanumeric, 2000 characters)		
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom		

* not supported

5.7 GS1 DataMatrix

AM[n]y;x;p;a;d;s;aw;ah;ec;f;dp			
A	identification for mask set		
M	identification for protocol version		
n	field number		
y	Y position in 1/100 mm		
x	X position in 1/100 mm		
p	identification for phantom field 0 = print 1 = no print		
a	identification for field type 59 = GS1 DataMatrix		
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°		
s	symbol size in 1/100 mm		
aw	relation width		
ah	relation height		
ec	Error Correction 0 - ECC Type = 0 ECC Level = 0 Overhead = 0 % 1 - ECC Type = 2* ECC Level = 40 Overhead = 33 % 2 - ECC Type = 3 ECC Level = 50 Overhead = 25 % 3 - ECC Type = 6 ECC Level = 80 Overhead = 33 % 4 - ECC Type = 8 ECC Level = 100 Overhead = 50 % 5 - ECC Type = 9* ECC Level = 110 Overhead = 75 % 6 - ECC Type = 10* ECC Level = 120 Overhead = 50 % 7 - ECC Type = 11* ECC Level = 130 Overhead = 67 % 8 - ECC Type = 12 ECC Level = 140 Overhead = 75 % 9 - ECC Type = 26 ECC Level = 200 Overhead = 0 %		
f	format ID of data 0 - Format ID = 11 (numeric, 2000 characters)* 1 - Format ID = 1 (numeric, 500 characters) 2 - Format ID = 2 (alphabetical, 500 characters) 3 - Format ID = 3 (alphabetical + pointers, 500 characters) 4 - Format ID = 4 (alphanumeric, 500 characters) 5 - Format ID = 5 (7 Bit, 500 characters) 6 - Format ID = 6 (8 Bit, 500 characters) 7 - Format ID = 7 (pre-programmed, 500 characters)* 8 - Format ID = 12 (alphabetical, 2000 characters) 9 - Format ID = 14 (alphanumeric, 2000 characters)		
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom		

* not supported

5.8 CODABLOCK F

AM[n]y;x;p;a;d;h;nc;nl;m;s;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout 1 = np printout
a	identification for field type 53 = CODABLOCK F
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
h	line height in symbol
nc	quantity of characters/line
nl	quantity of lines
m	mode
s	module size
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

5.9 GS1 DataBar (RSS Code)

AM[n]y;x;p;a;d;s;m;k;t;0;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 54 = GS1 DataBar (RSS)
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
s	number of segments per line [2...22]
m	module width [1 ...12]
k	separator height [1,2]
t	symbol type 1 = GS1 DataBar Omnidirectional (RSS-14) 2 = GS1 DataBar Truncated (RSS-14 Truncated) 3 = GS1 DataBar Stacked (RSS-14 Stacked) 4 = GS1 DataBar Stacked Omnidirectional (RSS-14 Stacked Omnidirectional) 5 = GS1 DataBar Limited (RSS Limited) 6 = GS1 DataBar Expanded (RSS Expanded)
0	not used
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

5.10 QR Code

AM[n]y;x;p;a;d;mo;cs;ms;cw;ec;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 57 = QR Code
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
mo	code model 1 = Code Model 1 2 = Code Model 2
cs	character set N = numeric A = alphanumeric B = 8-bit byte K = kanji
ms	masking -1 = auto 0-7 = mask x 8 = no masking
cw	line width in 1/100 mm per module possible values: 0-800
ec	error correction (restoring capacity) L = 7 % M = 15 % Q = 25 % H = 30 %
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

5.11 Aztec Code

AM[n]y;x;p;a;d;h;f;ec;m;0;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 61 = Aztec Code
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
h	symbol size in 1/100 mm (max 1 cm)
f	format 0 = Auto 1 = C15xC15 Compact 2 = C19xC19 Compact 3 = C23xC23 Compact 4 = C27xC27 Compact 5 = C19xC19 6 = C23xC23 7 = C27xC27 8 = C31xC31 9 = C37xC37 10 = C41xC41 11 = C45xC45 12 = C49xC49 13 = C53xC53 14 = C57xC57 15 = C61xC61 16 = C67xC67 17 = C71xC71 18 = C75xC75 19 = C79xC79 20 = C83xC83 21 = C87xC87 22 = C91xC91 23 = C95xC95 24 = C101xC101 25 = C105xC105 26 = C109xC109 27 = C113xC113 28 = C117xC117 29 = C121xC121 30 = C125xC125 31 = C131xC131 32 = C135xC135 33 = C139xC139 34 = C143xC143 35 = C147xC147 36 = C151xC151
ec	error correction (only if format = 0) 1 = 10 % 2 = 23 % 3 = 36 % 4 = 50 %
m	mode 0 = data 1 = runes (figures 0-255) 2 = Unicode (8 Bit ASCII) 3 = GS1 (not yet available)
0	dummy
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

5.12 Rectangle

AM[n]y;x;p;a;h;b;s;m;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 10 = rectangle
h	rectangle height in 1/100 mm
b	rectangle height in 1/100 mm
s	line width in 1/100 mm
m	line type; 1 digit
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

5.13 Line

AM[n]y;x;p;a;d;l;s;m;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout 1 = no printout
a	identification for field type 11 = line
d	rotation 0 = horizontal 1 = vertical
l	length in 1/100 mm
s	line width in 1/100 mm
m	line type; 1 digit
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

5.14 Internal Graphic

AM[n]y;x;p;a;d;dy;dx;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 3 = internal graphic
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
dy	rotation in direction Y
dx	rotation in direction X
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

6 Text Set

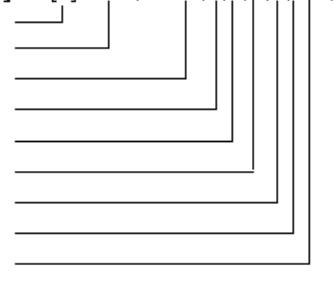
BM[n]text	
B	identification for text set
M	identification for extended protocol
n	field number
text	data contents, text

BV[n]text	
B	identification for text set
V	identification for selection by field name
n	field name
text	data contents, text

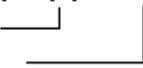
BF[n]text	
B	identification for text set
F	identification for selection by free definable field number
n	field number
text	data contents, text

6.1 Examples

Mask set

Mask statement	[SOH]AM[1]2000;4000;0;1;0;2;1;1;0[ETB]
field number	
y position 20 mm	
x position 40 mm	
no phantom field	
bitmap font	
position 0	
font 2	
extension in y direction 1	
extension in x direction 1	
no blank pixel	

Texts set

Text statement	[SOH]BM[1]this is a test [ETB]
field number 1	

Text set with variable definition: [SOH]BM[125]=CN(0,0,3,1,1)000[ETB]

Example layout

ASCII data	Identification
⊗AM[1]3600;4600;0;33;0;1500;0;4;1;1⊕ C_R L_F	mask set for bar code
⊗BM[1]444444444444⊕ C_R L_F	appropriate text set
⊗AM[2]600;4700;0;4;0;1;300;200;24⊕ C_R L_F	
⊗AM[3]600;3100;0;4;0;1;400;300;24⊕ C_R L_F	
⊗AM[4]1100;4700;0;4;0;1;400;300;24⊕ C_R L_F	five mask sets vector font / proportional font
⊗AM[5]1800;4700;0;4;0;1;300;200;24⊕ C_R L_F	
⊗AM[6]1900;3700;0;4;0;1;600;400;24⊕ C_R L_F	
⊗BM[2]Art.Nr. ⊕ C_R L_F	
⊗BM[3]44444⊕ C_R L_F	
⊗BM[4]Artikelbezeichnung⊕ C_R L_F	five appropriate text sets
⊗BM[5]DM⊕ C_R L_F	
⊗BM[6]99,-- ⊕ C_R L_F	
⊗FBA000r06000000⊕	number of lines
⊗FBBA00r00001000⊕	number of items
⊗FBC000r00000000⊕	start

: graphic data in PCX format

⊗: SOH (1_{hex} bzw 5E_{hex})

⊕: ETB (17_{hex} bzw. 5F_{hex})

C_R: CarriageReturn (0D_{hex})

L_F: LineFeed (0A_{hex})

7 Graphic Set

7.1 General Graphic Format

This format is supported by all our printing systems but note that a 8 bit transmission is absolute necessary.

SOH D p p p p lb lb lb b b b gb..... ETB

			min.	max.
D	=	identification for graphic set		
p	=	pixel line from above	'0000'	'1900'
lb	=	1. byte from left	'000'	'100'
b	=	quantity of bytes	'1'	'100'
gb	=	graphic bytes		

Graphic byte



1 graphic bit = 0,083 x 0,083 mm

7.2 Graphic in PCX Format

It is possible to transfer graphic data as a PCX-file (e.g. PaintBrush) to the printing system. With this type of data transfer the PCX-file is transferred in a compressed form. Hereby the RLE-procedure is used and therefore the graphic data were reduced by approx. 30 %. This means that the effective transferring time for 300 dpi devices is cut in halves.

To set the direct print module ready for receiving PCX-data the protocol has to be switched over and hereby the following command set will be defined:

|SOH|A|X|n|n|n|y|v|v|v|v|v|v|x|x|x|x|x|x|m|dp|ETB|

- It is recommended to observe that directly after the final sign (ETB) no separator res. fill character such as $C_R L_F$ is indicated.
- The direct print module supports the following PCX versions: 5, 3, 2 and 0.
- It is necessary that the corresponding PCX-file is available as monochrome (black/white).
- The graphic has to be available in the original size as the direct print module is not able to change the size by itself.



NOTICE!

Before print start, indicated by parameter set 'FBC', the definition of field number, lines and pieces has to be effected via the parameter sets (FBA res. FBB).

7.3 Example PCX File

-*** PCX_GRAPHIC-INFO ***-

$\otimes AM[1]3600;4600;0;33;0;1500;0;4;1;1 \oplus C_R L_F$	mask set for bar code
$\otimes BM[1]444444444444 \oplus C_R L_F$	appropriate text set
$\otimes AM[2]600;4700;0;4;0;1;300;200;24 \oplus C_R L_F$	
$\otimes AM[3]600;3100;0;4;0;1;400;300;24 \oplus C_R L_F$	
$\otimes AM[4]1100;4700;0;4;0;1;400;300;24 \oplus C_R L_F$	five mask set vector font / proportional font
$\otimes AM[5]1800;4700;0;4;0;1;300;200;24 \oplus C_R L_F$	
$\otimes AM[6]1900;3700;0;4;0;1;600;400;24 \oplus C_R L_F$	
$\otimes BM[2]Art.Nr. \oplus C_R L_F$	
$\otimes BM[3]44444 \oplus C_R L_F$	
$\otimes BM[4]Artikelbezeichnung \oplus C_R L_F$	five appropriate text sets
$\otimes BM[5]DM \oplus C_R L_F$	
$\otimes BM[6]99,-- \oplus C_R L_F$	
$\otimes FBA00r06000000 \oplus$	set number of lines (FBA...)
$\otimes FBBA00r00001000 \oplus$	set quantity (FBBA...)
$\otimes FBC000r00000000 \oplus$	start print order (FBC...)

: Grafikdaten im PCX Format
 ⊗: SOH (1_{hex} bzw 5E_{hex})
 ⊕: ETB (17_{hex} bzw. 5F_{hex})
 C_R : CarriageReturn (0D_{hex})
 L_F : LineFeed (0A_{hex})

8 Variables

8.1 Set Structure

SOH	BM	[n]	=	v	v	(p1	p2	p...	pn)	t1	t2	t...	t70	ETB
-----	----	-----	---	---	---	---	----	----	------	----	---	----	----	------	-----	-----

= start of function
 vv variable type
 SC link field
 CN counter
 CC extended counter
 CL date/time
 CU currency variable
 SH shift variable
 MD memory card data
 (start of variable parameter block
 p1...pn variable parameter
) end of variable parameter block



NOTICE!

In case you want to print a text which corresponds exactly to the variable definition then you have to place '!' before.

SOH	BM	[n]	!	=	v	v	(p1	p2	p...	pn)	t1	t2	t...	t70	ETB
-----	----	-----	---	---	---	---	---	----	----	------	----	---	----	----	------	-----	-----

8.2 Link Field

SOH	BM	[n]	=	S	C	(p1	;	p2	;	p...	;	pn)	t1	t2	t...	t70	ETB
-----	----	-----	---	---	---	---	----	---	----	---	------	---	----	---	----	----	------	-----	-----

= SC identification of link field
 p1...pn identification of link elements (field number or constant text)
 field number is entered without leading '0'
 constant text is included in " but these marks are not printed



NOTICE!

Reference fields can be constant text or variables but no link fields.

Example

=SC(1;2;3) --> Printout: Field1Field2Field3

=SC(1;"constant";2) --> Printout: Field1constantField2

8.3 Counter

SOH	BM	[n]	=	C	N	(t	;	m	;	c	;	+/-	s	;	i	;	h	;	r)	t1	t2	t...	t70	ETB
-----	----	-----	---	---	---	---	---	---	---	---	---	---	-----	---	---	---	---	---	---	---	---	----	----	------	-----	-----

= CN	identification counter
t	type of counter
0	numerical
1	letters only
2...36	radix, base of the counter
m	function mode
0	standard
1	return to start value
2	enter the start value at the beginning of printing (default = existing start value)
3	enter the start value at the beginning of printing (default = last final number)
4	reset start value at cycle end (only for DPM III)
5	reset start value by I/O signal
6	time-controlled resetting
7	time-controlled resetting with input of initial value (default = last final value)
c	digit where the numbering starts counting
+/-	direction
+	adding
-	subtracting
s	step width
i	update interval (number of layouts with identical number)
h	time by which the counter is reset (function mode 6 and 7) in format 'HH:MM' e.g. 00:00 = reset counter at 0:00 (optional, only for function mode 6 and 7)
r	reset value (optional, only for function mode 6 and 7; default = text and/or initial value)
Limitation:	
The time-controlled resetting of counter variable is only effected in case of an active print order. If a print order is cancelled before the specified time and afterwards again restarted then no resetting of counter value is effected.	
t1, t2, ...	text res. start value of counter

Example:

Input: =CN(10;7;4;+1;1;06:00;0001)1234

The enquiry for the initial value is effected at print start and at 6:00 the counter variable is reset to value 0001.

8.4 Extended Counter

SOH	BM	[n]	=	C	C	(+/-	s	;	i	;	m	;	z	;	n	;	x)	t	ETB
-----	----	-----	---	---	---	---	-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

- = CC identification of numeric counter
- +/- direction
 - + counter adding
 - counter subtracting
- s step width
- i update interval
(number of layouts with identical number)
- m function mode
 - 0 standard
 - 1 return to start value
 - 2 enter the start value at the beginning of printing
(default = existing start value)
 - 3 enter the start value at the beginning of printing
(default = last final number)
 - 4 reset start value at cycle end
(only for DPM III)
 - 5 set min. / max. value
 - 6 set start value
 - 7 print end
- z leading zeros
 - 0 no leading zeros
 - 1 printout with leading zeros
- n minimum value (max. -999999999)
- x maximum value (max. 999999999)
- t start value
(the number of digits determines the format for the printout with
leading zeros
(max. 999999999)

Example:

Input: =CC(+1;2;5;0;1,999)0050

Printout: 50, 51,...999, 1, 2, ...

8.5 Date and Time

SOHBM[n]=CL(m;d;i;n;c;mo;pd;pm;md;mm;rw;ws)t1t...t70ETB

= CL identification date/time

m month offset to the actual date

d day offset to the actual date

i update interval

(0 = at the beginning of a print order, 1 = each layout)

Optional parameters

n minute offset of the actual time
(negative entry/value possible)

c correction month overflow
(0 = change to the next month, 1 = remain in current month)

Optional parameters for BBE date

mo input mode

0: standard; display current date of real time clock
1: display calculated date, modification possible
2: display calculated date, no modification possible

pd max. positive correction days

pm max. positive correction months

md max. negative correction days

mm max. negative correction months

Optional parameters for rounded date

rw rounded weekday: 1 = Sunday ... 7 = Saturday; 0 = no rounding

ws start of week, format: "D-HH:MM",
e.g. 1-00:00 = Sunday, 0:00 Uhr

Example

Actual date as per Real Time Clock: 08.12.

Input: =CL(0;0;0)<DD.MO.YY> Printout:08.12.
Input: =CL(2;1;0)<DD.MO.YY> Printout: 09.02.

Example for BBE date

Input: =CL(0;0;0;0;0;1;3;2;3;2)<DD.MO.YY>

At print start the calculated date is displayed at the printing system and can be modified (+/- 3 days and +/- 2 months):

Display: ID_1 DD:MO:YY
08.12.11

Example for rounded date

The beginning of the week is on Sunday (08.12.) at 00:00. The date of Monday should be printed the whole week.

Input: =CL(0;0;0;0;0;0;0;0;0;2;1-00:00)<DD.MO.YY>

Current date	Rounded date
07.12. 23:59:59	02.12.
08.12. 00:00:00	09.12
09.12.	09.12.
14.12. 23:59:59	09.12.
15.12. 00:00:00	16.12.

8.6 Format Identifier (Date & Time)

Standard format	
HH	Hours 2-digit (24 hours)
HE	Hours 2-digit (12 hours)
MI	Minutes 2-digit
SS	Seconds 2-digit
AM	AM/PM output
DD	Day 2-digit
MO	Month 2-digit
YYYY	Year 4-digit
YY	Year 2-digit
Y	Year 1-digit
WW	Calendar week
DW	Day of week (Sunday = 0)
DW1	Day of week (Sunday = 1)
DwX	Day of week An arbitrary ASCII character can be used for x, from which it is counted consecutively
DOWxxxxxxxx	Day of week - variable For x, any ASCII character can be used The first ,x' denotes Sunday, the next denotes Monday and so on until Saturday For each weekday a character must be created
DOY	Day of year 3-digit (First January = 1)
DY	Day of year 3-digit (First January = 0)
Examples	
DD.MO.YY	22.01.10
MO/DD/YYYY	01/22/2010
YY-MO-DD	10-01-22
YYMODD	100122

The format identifier 'HE' and 'AM'/'am'/'Am' are supplemented.
Therefore the output of hours in 12-hours mode is possible. By the additional output of format identifier 'AM' the output of time in american/english format is possible.

Example

```
=CL(0;0;0;0)<HH:MI:SS>      --> 15:30:00
=CL(0;0;0;0)<HE:MI:SS>      --> 03:30:00
=CL(0;0;0;0)<HE:MI:SS AM>    --> 03:30:00 PM
=CL(0;0;0;0)<HE:MI:SS am>    --> 03:30:00 pm
=CL(0;0;0;0)<HE:MI:SS Am>    --> 03:30:00 p.m.
```

By separating the output of time and AM/PM output in 2 text fields, also the following output format is possible:
--> 03:30:00 pm

Extended format	
XMO	Name of month short
XSO	Name of month long
XSD	Weekday short
XLD	Weekday long
For X you can enter the country identification of desired language	
C = Canadian	
D = Danish	
E = English	
F = French	
G = German	
I = Italian	
N = Dutch	
O = Norwegian	
S = Spanish	
U = Finnish	
W = Swedish	
Examples:	
DD.EMO.YY	22.JAN.10
DD.ESO YYYY	22. January 2010
ELD,DD.GMO.YY	Friday, 22. JAN.10
ESD,DD.MO.YY	FR, 22.01.10

Extended format - XMO

C	JA	FE	MR	AL	MA	JN	JL	AU	SE	OC	NO	DE
D	JAN	FEB	MAR	APR	MAJ	JUN	JUL	AUG	SEP	OKT	NOV	DEC
E	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	JAN	FEV	MAR	AVR	MAI	JUIN	JUIL	AOU	SEP	OCT	NOV	DEC
G	JAN	FEB	MRZ	APR	MAI	JUN	JUL	AUG	SEP	OKT	NOV	DEZ
I	GEN	FEB	MAR	APR	MAG	GIU	LUG	AGO	SET	OTT	NOV	DIC
N	JAN	FEB	MRT	APR	MEI	JUN	JUL	AUG	SEP	OKT	NOV	DEC
O	JAN	FEB	MAR	APR	MAI	JUN	JUL	AUG	SEP	OKT	NOV	DES
S	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC
U	TAM	HEL	MAA	HUH	TOU	KES	HEI	ELO	SYY	LOK	MAR	JOU
W	JAN	FEB	MAR	APR	MAJ	JUN	JUL	AUG	SEP	OKT	NOV	DEC

Extended format - XSO

C	January	February	March	April	May	June
D	Januar	Februar	Marts	April	Maj	Juni
E	January	February	March	April	May	June
F	Janvier	Février	Mars	Avril	Mai	Juin
G	Januar	Februar	Maerz	April	Mai	Juni
I	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
N	Januari	Februari	Maart	April	Mei	Juni
O	Januar	Februar	Mars	April	Mai	Juni
S	Enero	Febrero	Marzo	Abril	Mayo	Junio
U	Tammikuu	Helmikuu	Maaliskuu	Huhtikuu	Toukokuu	Kesaekuu
W	Januari	Februari	Mars	April	Maj	Juni

C	July	August	September	October	November	December
D	Juli	August	September	Okttober	November	December
E	July	August	September	October	November	December
F	Juillet	Août	Septembre	Octobre	Novembre	Décembre
G	Juli	August	September	Okttober	November	Dezember
I	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
N	Juli	Augustus	September	Okttober	November	December
O	Juli	August	September	Okttober	November	Desember
S	Julio	Agosto	Septiembre	Octubre	Noviembre	Diciembre
U	Heinaekuu	Elokuu	Syyskuu	Lokakuu	Marraksuu	Joulukuu
W	Juli	Augusti	September	Okttober	November	December

Extended format - XSD

C	SUN	MON	TUE	WED	THU	FRI	SAT
D	SO	MA	TI	ON	TO	FR	LO
E	SUN	MON	TUE	WED	THU	FRI	SAT
F	DIM	LUN	MAR	MER	JEU	VEN	SAM
G	SO	MO	DI	MI	DO	FR	SA
I	DOM	LUN	MAR	MER	GIO	VEN	SAB
N	ZO	MA	DI	WO	DO	VR	ZA
O	SO	MA	TI	ON	TO	FR	LO
S	DOM	LUN	MAR	MIE	JUE	VIE	SAB
U	SU	MA	TI	KE	TO	PE	LA
W	SO	LA	TI	ON	TO	FR	LO

Extended format - XLD

C	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
D	Søndag	Mandag	Tirsdag	Onsdag	Torsdag	Fredag	Lørdag
E	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
F	Dimanche	Lundi	Mardi	Mercredi	Jeudi	Vendredi	Samedi
G	Sonntag	Montag	Dienstag	Mittwoch	Donnerstag	Freitag	Samstag
I	Domenica	Lunedì	Martedì	Mercoledì	Giovedì	Venerdì	Sabato
N	Zondag	Maandag	Dinsdag	Woensdag	Donderdag	Vrijdag	Zaterdag
O	Søndag	Mandag	Tirsdag	Onsdag	Torsdag	Fredag	Lørdag
S	Domingo	Lunes	Martes	Miércoles	Jueves	Viernes	Sábado
U	Sunnuntai	Maanantai	Tiistai	Keski-viikko	Torstai	Perjantai	Lauantai
W	Söndag	Måndag	Tisdag	Onsdag	Torsdag	Fredag	Lördag

8.7 Currency Variable

SOH	BM	[n]	=	C	U	(a	;	b	;	c	;	d	;	e	;	f	;	g)	t1	t2	t...	t70	ETB
-----	----	-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----	----	------	-----	-----

- = CU Signification of variable Euro
- a ANSI-Code of thousand separator as decimal figure
- b ANSI-Code of comma separator as decimal figure
- c Quantity of numbers after the comma as decimal figure
- d Operand A Before the processing the variable Euro
- e Operand B calculates the term
- f Operand C $\frac{A \times B}{C}$
- g Rounding format
- t1, t2, ... Format string, is indicated by "< >"

Example:

In case the contents of field 20 has to be converted from USD into EUR the definition of variable for the user defined format is as follows:

B01 '=CU(46;44;2;20;"1,0"";0,68861"";0,01")Result: <>Euro'
 B20 1.250,44 USD

Printout: 1.250,44 USD
 Result: 1.815,89 Euro*

* 1 USD = 0,68861 Euro (11.01.2010)

8.8 Shift Variable

SOH	BM	[n]	=	S	H	()	t1	t2	t...	t70	ETB
-----	----	-----	---	---	---	-----	----	----	------	-----	-----

= SH identification of shift variable



NOTICE!

The shift variable did not need any parameters. The settings for the output are defined with the corresponding parameter sets.
(see above)

Beispiel

The shift times are defined:
 00:00 - 11:59 "Shift1"
 12:00 - 23:59 "Shift2"
 =SH() Printout at 10:00 Uhr: "Shift1"
 =SH() Printout at 13:00 Uhr: "Shift2"

Set shift times

SOH	F	C	I	D	-	-	r	N	N	H	H	M	M	h	h	m	m	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NN = ID [01 ... 24]

HH = start hour

MM = start minute

hh = end hour

mm = end minute

Enquire shift variable

SOH	F	C	I	D	-	-	w	N	N	p	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	H	H	M	M	h	h	m	m	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set shift text

SOH	F	C	I	E	-	-	r	N	N	T	T	T	T	T	T	T	T	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NN = ID [01 ... 24]

T = max. 10 characters

Enquire shift variable

SOH	F	C	I	E	-	-	w	N	N	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	;	T	T	T	T	T	T	T	T	;	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

8.9 User Guiding

SOH | BM | [n] = U | G | (| c | ; t | ; m | ; ap | ; ae | ; sp |) | t1 | t2 | t... | t70 | ETB

= UG identification user guiding

c start position for the entry

t type of entry

0 numerical

1 alphanumerical

m mode of entry

0 do not jump over special characters

1 jump over special characters

ap alignment at printing

0 aligned to the right side

ae alignment at entry

0 aligned to the right side

sp prompt text for the variable, max. 24 characters

The entry has to be included in ".

Example

Entry: =UG(1;0;0;0;0;“Enter article no.“)<123456>

Display:

Dynacode IP107/12

Enter article no.

123456

8.10 User Guiding with Mask

SOH	BM	[n]	=	U	M	(c	;	t	;	m	;	ap	;	ae	;	sp	;	d	;	ma)	t1	t2	t...	t70	ETB
-----	----	-----	---	---	---	---	---	---	---	---	---	---	----	---	----	---	----	---	---	---	----	---	----	----	------	-----	-----

- = UM identification user guiding with mask
- c start position for the entry
- t type of entry (is ignored with existing mask definition)
 - 0 numerical
 - 1 alphanumerical
- m mode of entry (is ignored with existing mask definition)
 - 0 do not jump over special characters
 - 1 jump over special characters
- ap alignment at printing
 - 0 aligned to the right side
- ae alignment at entry
 - (always left aligned with existing mask definition)
 - 0 right aligned
 - 1 left aligned, cursor at the beginning of the text
 - 2 left aligned, cursor at the start position
 - 3 right aligned, remove fill characters
 - 4 left aligned, cursor at the beginning of the text, remove fill characters
 - 5 left aligned, cursor at the start position, remove fill characters
- sp prompt text for the variable, max. 24 characters
The entry has to be included in ".
- d deleting setpoint value
 - 0 setpoint value remains at key entry (inserting mode)
 - 1 with first key press the setpoint value disappears
 - 2 setpoint value is retained (overwrite mode)
- ma definition of mask
possible mask characters are
 - 9 numbers only
 - # only numbers and leading signs
 - ? letters only
 - a alphanumeric characters (letters and numbers)
 - C any characters

Example

Entry: =UM(1;0;0;0;0;“Enter article no.”;0;“999-aa“<123-xx>
 Display: Enter article no
 123-xx

8.11 Memory Card Data

```
SOH|BM|[n]|=|MD|(FN="filename";SE='x';CH=x;SC="x";SF="x";RC="x")|ETB
```

= MD	identification of memory card data
FN	file name of table onto memory card with CSV data
SE	Separator sign (default = ':')
CH	column name in the first line (0 = no, 1 = yes)
SC	name and/or number of column that should be referenced
SF	field name and/or field index of field onto the layout, which contains the searched data
RC	name and/or number of column, which contains the data to be printed



NOTICE!

If in parameter SF a field name is indicated, this must have been defined for the appropriate field by an AC attribute statement!

Example

```
AC[1]NAME="FCODE"
BM[2]=MD(FN="a:\daten.csv";SE='(';CH=1;SC="Farbcode";SF="FCODE";
RC="IC-Nummer")
```

Field 1	Output Field 2
00001	121478242
23252	784587448

daten.csv - Editor	
Datei	Bearbeiten
Format	
Farbcode; IC-Nummer	
00001;121478242	
00002;658447852	
45875;121475284	
59874;325874158	
24714;002351478	
21514;325654125	
77757;704507440	

8.12 GS1-128 Parser



NOTICE!

By means of this variable type, the content of an application identifier in a GS1-128 bar code can be determined.

```
SOH|BM|[n]|=|A|I|(|p|;|Ai|)|ETB
```

= AI	identification of GS1-128 parser
p	identification of the link element (field number)
Ai	application identifier

Example

Field 1 ="00123456789012345675" GS1-128 with AI00

=AI(1;"00") Printout: 123456789012345675

8.13 EPC Calculation (Electronic Product Code)

SOH | BM | [n] = E | P | C (| M ; L ; F ; P ; N1 ; {N2} |) | ETB

= EPC	identification of EPC calculation
M	coding method
L	length of manufacturer number (company prefix)
F	filter value
P	verification of check digit
N1	identification of link element (field number)
N2	identification of link element (field number) - optional

For more information, visit the following web sites:

www.epcglobalinc.org or www.gs1.org

Param.	Value range		
M	0 = coding method SSCC96	3 = coding method GRAI96	
	1 = coding method SGTIN96	4 = coding method GIAI96	
	2 = coding method SGLN96		
L	6..12		
F	SSCC96	All Others	000
		Undefined	001
		Logistical / Shipping Unit	010
		All Others	000
	SGTIN96	Retail Consumer Trade Item	001
		Standard Trade Item Grouping	010
		Single Shipping/ Consumer Trade Item	011
		All Others	000
	SGLN	Physical Location	001
		All Others	000
P	0 = no verification; 1 = verification		
N1, N2	any		

Example 1

Field 1 ="00123456789012345675“ GS1-128 with AI00
 Field 2 =AI(1;“00“) --> Printout: 123456789012345675
 Field 3 =EPC(0;12;0;1;2) --> Printout: 3100DA7557D32C38E7000000
 The EPC is calculated with the content of Field 2. The coding method SSCC96 is used. In Field 2 a valid NVE must be represented (18-digit, correct check digit).

Example 2

Field 1 ="4141234567890128254123“ GS1-128 with AI00, AI254
 Field 2 =AI(1;“414“) --> Printout: 1234567890128
 Field 3 =AI(1;“254“) --> Printout: 123
 Field 4 =EPC(2;10;0;0;2;3) --> Printout: 3208499602D218000000007B
 The EPC is calculated with the content of Field 2 and Field 3. The coding method SGLN96 is used. In Field 2 a valid ILN must be represented (13-digit). In the example, Field 3 contains an optional serial number. No verification of check digit of ILN (8) is effected.

* only when using option RFID

8.14 Check Digit

SOH	BM	[n]	=	C	D	(d	;	s	;	I	;	t	;	w	;	m	;	r	;	o)	t1	t...	t70	ETB
-----	----	-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----	------	-----	-----

- = CD Identification of check digit
- d Data for check digit calculation (field number of constant text)
Constant text is enclosed in "".
- s Start position within data
1 ...n Start calculation at digit x
- I Number of digits. If the parameter is not indicated, the remaining data (from start position) is used for the check digit calculation.
- t Check digit type
 - 0 Modulo 10 (weighting 3)
 - 1 Modulo 11
 - 2 Modulo 43
 - 3 Modulo 47 (weighting 15)
 - 4 Modulo 47 (weighting 20)
 - 5 Modulo 103
 - 6 Customized

Optional parameters for customized check digit

- w Weighting.
Constant text enclosed in "" - contains the individual weighting values or an interval.
Individual values: "x₁,x₂"
Interval: "x₁...x₂"
- m Modulo
- r Add result to
- o Print only one digit
 - 0 No
 - 1 Yes

Example

Entry:	=CD("123456789012";0;0;0)
Printout:	8
Entry:	=CD("1234567890";0;0;6;"1,3";10;10;1)
Printout:	5

8.15 Substring

SOH	BM	[n]	=	S	S	(d	;	s	;	I)	ETB
-----	----	-----	---	---	---	---	---	---	---	---	---	---	-----

- = SS Identification of substring
- d Data used for substring extraction (field number or field name or constant text).
Constant text is enclosed in "".
- s Start position within data. If this parameter is omitted, the substring extraction starts with the 1st character of the data string.
1 n Start at digit x
- I Number of digits. If this parameter is omitted, all characters from the start position to the end of the data string are returned.
1 ...n At the start position x digits

Example:

Entry:	=SS("1234567890";4;3)
Printout:	456
	Field "ARTIKELNR" has the contents "370012330295"
Entry:	=SS(ARTIKELNR;1;4)
Printout:	3700

9 Parameter Sets

9.1 Layout Parameters

Set layout length in 1/100 mm

SOH	F	C	C	L	-	-	r	N	N	N	N	N	N	N	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: value of layout length in 1/100 mm, 7 digit ASCII number

Enquire layout length in 1/100 mm

SOH	F	C	C	L	-	-	w	N	N	N	N	N	N	N	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	N	N	N	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set layout width in 1/100 mm

SOH	F	C	C	O	-	-	r	N	N	N	N	N	N	N	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: indication of layout width in 1/100 mm, 7 digit ASCII number

Enquire layout width in 1/100 mm

SOH	F	C	C	O	-	-	w	P	P	P	P	P	P	P	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	N	N	N	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set X offset

SOH	F	C	C	E	-	-	r	V	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

V: pre-sign of offset (+ or -)

NNN: offset value, 3 digit ASCII number in 1/10 mm

Enquire X offset

SOH	F	C	C	E	-	-	w	p	p	p	p	p	p	p	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	V	N	N	N	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set layouts per cycle

SOH	F	C	A	D	I	-	r	N	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NN: number of layouts per cycle (01 ... 25)

Enquire layouts per cycle

SOH	F	C	A	D	I	-	w	p	p	p	p	p	p	p	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	-	-	-	-	p	p	p	p	p	p	p	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NN: current layouts per cycle

Set column width

SOH	F	C	C	H	B	-	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: indication of column width in 1/10 mm (0 ... 999)

Enquire column width

SOH	F	C	C	H	B	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set line number of layout (n digits)

SOH	F	B	A	A	-	-	r	N	ETB
-----	---	---	---	---	---	---	---	---	-----

N: Indication of line number in ASCII (1, 10, 100, ...)

Enquire line number of layout

SOH	F	B	A	A	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set flip layout

SOH	F	C	D	O	-	-	r	N	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = flip layout Off

N: 1 = flip layout On

Enquire flip layout

SOH	F	C	D	O	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set layout rotation

SOH	F	C	D	N	-	-	r	X	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

X: 0 = rotate layout Off

X: 1 = rotate layout On

Enquire layout rotation

SOH	F	C	D	N	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	X	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set operating mode flip/rotate layout

SOH	F	C	D	S	-	-	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = flip/rotate layout at the centre point of layout

N: 1 = flip/rotate layout at the centre point of printhead

Enquire operating mode flip/rotate layout

SOH	F	C	D	S	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

9.2 Device Settings

Set print position

```
SOH F C A D K - r N N N N N N N N - - ETB
```

NNNN: print position in 1/10 mm (0120 ... 0900)

Enquire print position

```
SOH F C A D K - w p p p p p p p p p p p ETB
```

Answer

```
SOH A N N N N N N N - - p p p p p p p p p p p ETB
```

NNNN: print position in 1/10 mm

Set operating mode

```
SOH F C A D O - r N - - - - - - - - - ETB
```

N: 0 = intermittent mode

N: 1 = continuous mode

After changing the operating mode, the module is re-started automatically.

Enquire operating mode

```
SOH F C A D O - w p p p p p p p p p p p ETB
```

Answer

```
SOH A N - - - - - - - p p p p p p p p p p ETB
```

Set transfer ribbon control On/Off

```
SOH F C D B - - r N M - - - - - - ETB
```

N: 1 = transfer ribbon control Off

N: 0 = transfer ribbon control On

Enquire transfer ribbon control On/Off

```
SOH F C D B - - w p p p p p p p p p p ETB
```

Answer

```
SOH A N M - - - - - - - p p p p p p p p p p ETB
```

Set field handling

SOH F C D K - - r N - - - - - ETB

N: 0 = field handling Off

N: 1 = graphic received

N: 2 = delete graphic

N: 3 = restore graphic

Enquire field handling

SOH F C D K - - w p p p p p p p p p p p p p p ETB

Answer

SOH A N - - - - - - p p p p p p p p ETB

Set display language

SOH F C D I - - r N - - - - - - - - - - ETB

N: 10 = German	N: 17 = Netherlands	N: 14 = Chinese
N: 11 = English	N: 18 = Italian	N: 15 = not used
N: 12 = French	N: 19 = Danish	N: 16 = Ukrainian
N: 13 = Spanish	N: 10 = Polish	N: 17 = Turkish
N: 14 = Finish	N: 11 = Greek	N: 18 = Swedish
N: 15 = Czech	N: 12 = Hungarian	N: 19 = Norwegian
N: 16 = Portuguese	N: 13 = Russian	

Enquire display language

SOH F C D I - - w p p p p p p p p p p p p p p p ETB

Answer

SOH A N - - - - - - p p p p p p p p p ETB

Set external print parameters

SOH F C C P - - r N - - - - - - - ETB

N: 0 = only parameter settings by interface for label length, gap length and label width are taken into consideration.

N: 1 = parameter settings by interface are processed

N: 1 = parameter settings by interface are processed
N: 2 = parameter settings by interface are not taken into consideration

Enquire external print parameters

SOH F C C P - - W p p p p p p p p p p p p p p ETB

Answer

Set default layout On/Off

SOH	F	C	M	K	E	-	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Off: Print start without layout definition signalises error.

N: 1 = On: Default layout is printed without layout definition.

Default: Off

Enquire default layout On/Off

SOH	F	C	M	K	E	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set layout change confirmation

SOH	F	C	S	D	F	C	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Confirmation Off

N: 1 = Confirmation On

Enquire layout change confirmation

SOH	F	C	S	D	F	C	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set 'print after measuring'

SOH	F	C	S	D	F	D	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Off

N: 1 = On

Enquire 'print after measuring'

SOH	F	C	S	D	F	D	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

9.3 Interface

By means of the following commands the parameters of the serial interface can be set. Note that after sending one of the commands also the host computer changes the corresponding parameter of its interface to allow further communication of host computer-printing system. For all interface commands the interface is fixed with x. The following values are allowed:

x = 1 ⇒ COM 1
x = 2 ⇒ COM 2

In all other cases automatically the first serial interface is addressed.
In the answers the addressed interface is also returned.

Set all interface parameters

SOH	F	C	F	F	x	-	r	m	;	b	;	p	;	d	;	s	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

m = mode (0 = Off, 1 = On, 2 = On, without error message)
b = baud rate (2400, 4800, 9600, 19200, 38400, 115200)
p = parity (n = no parity, e = even parity, o = odd parity)
d = number of data bits (7, 8)
s = number of stop bits (1, 2)

Enquire all interface parameters

SOH	F	C	F	F	x	-	w	p	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	x	;	m	;	b	;	p	;	d	;	s	;	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Example: activate interface COM1 and set 9600 Baud, no parity, 8 data bits, 2 stop bits
[SOH]FCFF1-r1;9600;n;8;2[ETB]

Interface protocol

There are two different interface protocols available. Usually SOH = 01_{Hex} and ETB = 17_{Hex}. However there are host computers (e.g. AS/400), which cannot work with these characters. Therefore you can switch SOH = 5E_{Hex} and ETB = 5F_{Hex}. The host computer has to change the corresponding parameter as well.

Set SOH and ETB

SOH	F	C	G	C	-	-	r	N	-	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = SOH = 01_{Hex}, ETB = 17_{Hex}
N: 1 = SOH = 5E_{Hex}, ETB = 5F_{Hex}

Enquire SOH and ETB

SOH	F	C	G	C	-	-	W	p	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = SOH = 01_{Hex}, ETB = 17_{Hex}
N: 1 = SOH = 5E_{Hex}, ETB = 5F_{Hex}
N: 2 = other character combination

Data memory

Set data memory

M: 0 = Off, after receiving FB_CA0r or FB_DA0r the interface is locked until the end of the print order, i.e. you cannot write more data in the receiving buffer.

M: 1 = Off, after receiving FB_CA0r or FB_DA0r the interface is locked until the end of the print order, i.e. you cannot write more data in the receiving buffer.

M: 2 = Extended, after starting a print order it is possible to write more data in the receiving buffer. These data is processed during the print and the next layout is prepared.

Enquire data memory

SOH F C G D - - W p p p p p p p p p p p p p p ETB

Answer

SOH A M - - - - - - - p p p p p p p p p p p ETB

Set reaction to unknown interrogative set

SOH F C G E A - r N - - - - - - - - ETB

N = value range between 0 and 3

Enquire reaction to unknown questions

SOH F C G E A - w p p p p p P p ETB

Answer

SOH A N - - - - - p p p p p p p p p ETB

9.4 Network

SOH	F	C	L	A	-	-	r	C	0	A	8	0	0	1	5	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

All network parameter sets start in the third column with a 'L'. Column 4 shows the identification for the corresponding network parameter. Column 5 can show another sub-identification.

Because of the fact that the argument size is limited to 8 characters, the IP addresses (IP address, network mask, gateway address) which consist of 32 bit are transmitted in HEX presentation.

For all data which is transmitted in HEX presentation (also the MAC address) it is allowed to use capital as well as small letters.

In contrary to the parameter settings of the other interfaces, the settings of the following sets were saved immediately onto Flash, i.e. it is not necessary to save the currently set configuration before switching off the printing system so the modifications are still available after switching on.

So that the made modifications become active, also without printing system Reset it is necessary to transmit a corresponding Z set which effects a Reset of the network devices.

Set IP address (e.g. 192.168.0.21)

SOH	F	C	L	A	-	-	r	C	0	A	8	0	0	1	5	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Enquire IP address

SOH	F	C	L	A	-	-	w	p	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	C	0	A	8	0	0	1	5	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set net mask (e.g. 255.255.255.0)

SOH	F	C	L	B	-	-	r	F	F	F	F	F	0	0	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Enquire net mask

SOH	F	C	L	B	-	-	w	F	F	F	F	F	0	0	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	F	F	F	F	F	F	0	0	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set Gateway address (e.g. 192.168.0.1)

SOH	F	C	L	C	-	-	r	C	0	A	8	0	0	0	1	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Enquire Gateway address

SOH	F	C	L	C	-	-	w	-	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	C	0	A	8	0	0	0	1	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

With the A record any address can be set in our pool.

With the C record any address in our pool and the identification of the MAC address can be set/changed at the same time.

Enquire MAC address

SOH	F	C	L	M	B	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

SOH	F	C	L	M	A	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

SOH	F	C	L	M	C	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	0	0	0	7	4	A	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

SOH	A	4	3	1	9	0	8	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

SOH	A	0	0	0	7	4	A	4	3	1	9	0	8	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NTP Server

NTP (Network Time Protocol) is a standardized Internet protocol permitting the synchronization of real-time clocks of network participants. The direct print module connects itself with a time server and align every 60 minutes its internal real-time clock with that of the time server in order to correct possible differences.

The address of server (IP address) can be freely configured in the printing system. The communication is effected by UDP and the fixed set port 123. The service in the direct print module is deactivated by transmitting the server address 0.0.0.0.

The time servers work together with the coordinated world time (UTC) and therefore an additional time shift is needed compared to the reference time. For Germany it is e.g. +1 hour.

The current state of the connexion can be queried with a status set.

Set NTP Server IP

SOH	F	C	L	N	I	-	r	N	ETB
-----	---	---	---	---	---	---	---	---	-----

N: X.X.X.X (X = 0 ... 255)

Enquire NTP Server IP

SOH	F	C	L	N	I	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	N	N	N	N	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

0.0.0.0 deactivates the NTP service

Readout NTP status

SOH	F	C	L	N	S	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Off

N: 1 = OK

N: 2 = Error

Set time zone (hour offset)

SOH	F	C	L	N	Z	-	r	N	ETB
-----	---	---	---	---	---	---	---	---	-----

N: -12, 12

Enquire time zone (hour offset)

SOH	F	C	L	N	Z	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	N	N	N	N	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Reset Network Device

SOH	F	C	L	Z	-	-	r	-----	ETB
-----	---	---	---	---	---	---	---	-------	-----

For this set is no enquiry possible. This set causes that modifications made by the transfer of the previous sets become effective.

9.5 Sensors

Enquire condition of compressed air

SOH	F	C	M	B	H	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = no or not enough compressed air

N: 1 = compressed air OK

Enquire condition of cover

SOH	F	C	M	B	I	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = cover open

N: 1 = cover closed

9.6 Offset Values

Set X offset

SOH	F	C	C	E	-	-	r	V	N	N	N	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

V: offset prefix (+ or -)

NNN: offset value, 3 digit ASCII number in 1/10 mm

Enquire X offset

SOH	F	C	C	E	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	V	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set print offset

SOH	F	C	A	D	L	A	r	N	N	N	N	N	-	-	M	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNNN: value of print offset

M: Unit - 0 = print offset in 1/10 mm (00000...09999)

1 = print offset in 1/10 ms (00000...99999)

Enquire print offset

SOH	F	C	A	D	L	A	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	N	-	-	M	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNNN: value of print offset

M: Unit - 0 = print offset in 1/10 mm

1 = print offset in 1/10 ms

Enquire printhead temperature

SOH	F	C	M	C	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: value of temperature, 3 digit ASCII number in degrees

Set transfer ribbon length

SOH	F	C	D	Q	A	-	r	N	N	N	N	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN: value of transfer ribbon length in m

Possible entries: 300, 450, 600, 900 or 1000

Enquire transfer ribbon length

SOH	F	C	D	Q	A	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set transfer ribbon prior warning

SOH	F	C	M	L	A	-	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Off

N: 1 = On

Enquire transfer ribbon prior warning

SOH	F	C	M	L	A	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	P	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set diameter for transfer ribbon prior warning

SOH	F	C	M	L	B	-	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: 030 ... 090 diameter in mm

Enquire transfer ribbon prior warning

SOH	F	C	M	L	B	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Readout current transfer ribbon diameter

SOH F C M L C - w - - - - - - - - - - - - - - - ETB

Answer

SOH A N N N - - - - p p p p p p p p p ETB

Set mode for transfer ribbon prior warning

SOH F C M L D A r N - - - - - - - - ETB

N: 0 = Warning

N: 2 = Error

Enquire mode for transfer ribbon prior warning

SOH F C M L D A w p p p p p p p p p ETB

Answer

SOH A N - - - - - p p p p p p p p p ETB

Set printhead resistance

SOH F C M G - - r N N N N N - - - ETB

NNNN: value of resistance in Ohm.

Enquire printhead resistance

SOH F C M G - - w p p p p p p p p p ETB

Answer

SOH A N N N N N N - - - p p p p p p p p p p p p p ETB

Set custom logo

SOH F C N R A - r N - - - - - - - - ETB

N: 0 = Off

N: T = Oh

Enquire custom logo

Answer

Paper counter

The paper counter (kilometer value) of direct print module as well as of printhead can only be enquired by interface and not reset to 0.

Enquire paper counter of direct print module

SOH	F	C	H	A	-	-	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	N	N	N	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Enquire paper counter of printhead

SOH	F	C	H	B	-	-	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	N	N	N	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNNNNNN: kilometer value of printing system and/or printhead
in meters (e.g. '00000123' = 123 m)

9.8 Date & Time**Set date**

SOH	F	C	I	A	-	-	r	D	D	M	O	Y	Y	D	W	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

DD = day of month

MO = month

YY = year

DW = day of week ('00' = Sunday)

Enquire date

SOH	F	C	I	A	-	-	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	D	D	M	O	Y	Y	D	W	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set time

SOH	F	C	I	B	-	-	r	H	H	M	I	S	S	A	M	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

HH = hours

MI = minutes

SS = seconds

AM = mode ('am' = 12 hours mode AM, 'pm' = 12 hours mode PM,
'__' = 24 hours mode)

Enquire time

SOH	F	C	I	B	-	-	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	H	H	M	I	S	S	A	M	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Automatically adjust clock for daylight saving changes

Because of the fact that there is no world-wide regulation if and when a changing of time between summer and wintertime (normal time) in the individual countries takes place, we distinguish between the following four formats for the definition for beginning and end of summertime.

F 0:	European format start of summertime = last Sunday in March end of summertime = last Sunday in October
W:	week (1 = first, ..., 5 = last)
WD:	day of week (0 = Sunday, ..., 6 = Saturday)
MM:	month (01 = January, ..., 12 = December)
F 1:	Fix date with indication of year
DD:	day
MM:	month (01 = January, ..., 12 = December)
YY:	year
F 2:	Fix date without indication of year
DD:	day
MM:	month (01 = January, ..., 12 = December)
F 3:	Week day after day in month
WD:	day of week (0 = Sunday, ..., 6 = Saturday)
DD:	after day (only the first day is taken into consideration)
MM:	month (01 = January, ..., 12 = December)

Set automatically adjust clock for daylight saving changes

SOH F C I G - - r N - - - - - - - - ETB

Enquire automatically adjust clock for daylight saving changes

SOH F C | G - - W p p p p p p p p p p p p p p ETB

Answer

SOH A N - - - - - - R R R R R R R R R R R R R ETB

N: 0 = Automatically adjust clock for daylight saving changes Off
N: 1 = Automatically adjust clock for daylight saving changes On

Set beginning of summertime

F 0: SOH F C I H - - r F W ; WD ; M M ; H H ; M M ETB

F 1: SOH F C I H - - r F D D ; M M ; Y Y ; H H ; M M ETB

F 2: SOH F C I H - - r F D D ; M M ; H H ; M M ETB

F 3: SOH F C I H - - r F WD ; D D ; M M ; H H ; M M ETB

Enquire beginning of summertime

SOH F C I H - - w p p p p p p p p p ETB

Answer

SOH A F W W D M M p p p p p p p p p ETB

The answer depends on each set format.

Set end of summertime

F 0: SOH F C I I - - r F W ; WD ; M M ; H H ; M M ETB

F 1: SOH F C I I - - r F D D ; M M ; Y Y ; H H ; M M ETB

F 2: SOH F C I I - - r F D D ; M M ; H H ; M M ETB

F 3: SOH F C I I - - r F WD ; D D ; M M ; H H ; M M ETB

Enquire end of summertime

SOH F C I I - - w p p p p p p p p p ETB

Answer

SOH A F W W D M M p p p p p p p p p ETB

The answer depends on each set format.

Set time shifting

SOH F C I J - - r N N N - - - - - ETB

NNN: minutes

Enquire time shifting

SOH F C I J - - w p p p p p p p p p ETB

Answer

SOH A N N N p p p p p p p p p ETB

Set password active

SOH	F	C	K	C	-	-	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = inactive (N in display)

N: 1 = active (J in display)

Enquire password active

SOH	F	C	K	C	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set password function menu

SOH	F	C	K	D	A	-	r	N	N	N	N	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN = input of password

4 digit ASCII number in mm (0000 ... 9999)

Enquire password function menu

SOH	F	C	K	D	A	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set password favorites menu

SOH	F	C	K	D	B	-	r	N	N	N	N	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN = input of password

4 digit ASCII number in mm (0000 ... 9999)

Enquire password favorites menu

SOH	F	C	K	D	B	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set password memory card

SOH	F	C	K	D	C	-	r	N	N	N	N	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN = input of password

4 digit ASCII number in mm (0000 ... 9999)

Enquire password memory card

SOH	F	C	K	D	C	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set password printing manually

SOH	F	C	K	D	D	-	r	N	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN = input of password
4 digit ASCII number in mm (0000 ... 9999)

Enquire printing manually

SOH F C K D D - w p p p p p p p p p p ETB

Answer

SOH A N N N N - - - p p p p p p p p ETB

9.10 Compact Flash Card

Save a layout onto Compact Flash card

SOH	F	M	A	O	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	---	-----

- O: In case a layout with the entered name exists already then the layout is overwritten without an enquiry. If you enter another value as 0, an enquiry appears demanding if you want to overwrite.
 P: File name of the layout which is to save. Drive and path name are optional, i.e. the file name is allowed to have more than 8 characters but is limited to 79.

Load a file from Compact Flash card

SOH	F	M	B	-	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	---	-----

- P: File name of the layout which is to load. Drive and path name are optional, i.e. the file name is allowed to have more than 8 characters but is limited to 79.

Delete a layout from Compact Flash card

SOH	F	M	C	-	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	---	-----

- P: File name of the layout which is to delete. Drive and path name are optional, i.e. the file name is allowed to have more than 8 characters but is limited to 79.

Format Compact Flash card

SOH	F	M	D	-	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	---	-----

- P: Optional drive identification with colon (e.g. A:).
 In case no drive is indicated, then the currently selected is formatted.

Readout contents of CF card

SOH	F	M	G	O	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	---	-----

- O: In case O is indicated, no error messages are displayed at the printing display e.g. if no card is inserted.
 P: Optional drive identification with colon (e.g. A:).
 In case no drive is indicated, then the currently selected is read out.

Answer

SOH	File name/directory name				ETB
-----	--------------------------	--	--	--	-----

A list of all file entries is indicated, each entry is included in (SOH) and (ETB).

Readout free memory space

SOH	F	M	H	O	-	-	w	X	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

O: In case O is indicated, no error messages are displayed at the printing display e.g. if no card is inserted.

X = Drive [A,B] (optional)

Answer

SOH	A	X	n	n	n	n	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

X = Drive [A,B]

n = Memory space in KB

Create directory

SOH	F	M	I	O	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	---	-----

O: In case a layout with the entered name already exists, then it is overwritten without an enquiry.

If you enter another value as O, an enquiry appears demanding if you want to overwrite.

P = Drive and path indication

Delete directory

SOH	F	M	J	-	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	---	-----

P = Drive and path indication

**NOTICE!**

The current directory cannot be deleted.

Delete directory path

SOH	F	M	J	A	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	---	-----

Deletes the indicated directory including all containing sub-directories and files.

Change standard directory

SOH	F	M	K	-	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	---	-----

P = Drive and path indication

Readout current directory

SOH	F	M	K	-	-	-	w	ETB
-----	---	---	---	---	---	---	---	-----

Answer

SOH	A	P	ETB
-----	---	---	-----

P = Current directory

Set standard directory for file selection via I/O

SOH	F	M	K	B	-	-	r	N	ETB
-----	---	---	---	---	---	---	---	---	-----

N = directory path

Enquire standard directory for file selection via I/O

SOH	F	M	K	B	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Antwort

SOH	A	N	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Transfer file

SOH	F	M	L	-	-	-	w	P	ETB
-----	---	---	---	---	---	---	---	---	-----

P: File name of file which is to transfer. Drive name and path name are optional, i.e. the file name is allowed to have more than 8 characters but is limited to 79.

Answer

SOH	A	F	*	S	ETB	Data
-----	---	---	---	---	-----	------

F = File name

S = File size in Byte

Data = Binary data

Enquiry if the file exists

SOH	F	M	M	-	-	-	w	P	ETB
-----	---	---	---	---	---	---	---	---	-----

P: File name of file which is to transfer. Drive name and path name are optional, i.e. the file name is allowed to have more than 8 characters but is limited to 79.

Answer

SOH	A	X	P	ETB	Daten
-----	---	---	---	-----	-------

X: 0 = File does not exist

1 = File exists

P = File name

Readout size of Compact Flash card

SOH	F	M	P	O	-	-	w	X	ETB
-----	---	---	---	---	---	---	---	---	-----

O: In case O is indicated, no error messages are displayed at the printing display e.g. if no card is inserted.

X: Drive [A,B] (optional)

Answer

SOH	A	D	n	n	n	n	-	-	-	X	ETB
-----	---	---	---	---	---	---	---	---	---	---	-----

X = Drive [A,B]

n = Memory in KB

D = enquired drive

Drive status

SOH	F	M	S	-	-	-	w	X	ETB
-----	---	---	---	---	---	---	---	---	-----

X - Drive [A,B]

Answer

SOH	A	X	S	ETB
-----	---	---	---	-----

X = Drive [A,B]

S = Status

0: no storage medium

1: not formatted

2: ready

3: not determinable

9.11 Printing

Set number of lines (n digits)

```
SOH F B A A - - r N ETB
```

N = number of lines in ASCII (1, 10, 100, ...)

Enquire number of lines

```
SOH F B A A - - w p p p p p p p p p ETB
```

Answer

```
SOH A N - - - - - - - - p p p p p p p p p ETB
```

Start/Stop Command

In addition to the actual start/stop command, the print order can also be interrupted via the parameter/remote record.

```
SOH F D - - - - r N - - - - - - - - - ETB
```

N: 0 = stop printing

N: 1 = continue printing

N: 2 = cancel print order if it is already stopped

Reset error

Reset error

```
SOH F C M H - - r N N N N - - - - ETB
```

NNNN: current error ID or '9999'

Enquire error

```
SOH F C M H - - w p p p p p p p p ETB
```

Answer

```
SOH A N N N N 0 0 0 0 p p p p p p p p p ETB
```

Readout error ID and error text

```
SOH F C M H A - w p p p p p p p p p ETB
```

Answer

```
SOH A N N N N ; error text ; p p p p p p p p p ETB
```

Item number of print order

By means of this command the Host computer can enquire following item numbers:

Total number of current print order

SOH	F	B	B	A	-	-	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Number of layouts which are still to print

SOH	F	B	B	B	-	-	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Number of already printed layouts

SOH	F	B	B	C	-	-	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

At the end of one of these commands the printing system returns the corresponding number as ASCII value (4 res. 5 digits) in the answer set.

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

With this set it is also possible to transmit the item number of print order to the printing system.

Item number of print order

SOH	F	B	B	A	-	-	r	N	N	N	N	N	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN = 5 digits item number of order

Interval in cutter mode

SOH	F	B	B	D	-	-	r	N	N	N	N	N	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN: interval

Start printing

SOH	F	B	C	-	-	r	S	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

This command starts the print order which is actually set in the printing system. The current parameters such as print mode, speed, initialization etc. are used.

S = x: sorted (e.g. pages 1-5, then again 1-5 etc. are printed)
 S = 1: unsorted (page 1 is printed x times, then page 2 x times, etc.)

SOH	F	B	E	-	-	r	n	n	n	n	n	n	n	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

With this command the printjob identifier which appears in "printing" res. "stopped" window is assigned to a print order. If only blanks are transmitted, then the printjob identifier is deleted and the display shows "noname".

Initialization of page handling

SOH	F	B	F	-	-	r	ETB
-----	---	---	---	---	---	---	-----

Selection of current page

SOH	F	B	G	-	-	r	P	ETB
-----	---	---	---	---	---	---	---	-----

P = current page number [1 ... 9]

Select order of pages to be printed

SOH	F	B	H	-	-	-	r	P ₁	P ₂	P ₃	ETB
-----	---	---	---	---	---	---	---	----------------	----------------	----------------	-----

P₁; P₂;...= pages to be printed

Generation of page without print start

SOH	F	B	I	-	-	-	r	S	ETB
-----	---	---	---	---	---	---	---	---	-----

With this command the corresponding page is only generated, i.e. no print start signal is sent.

S = x: sorted (e.g. pages 1-5, then again 1-5 etc. are printed)
 S = 1: unsorted (page 1 is printed x times, then page 2 x times, etc.)

Feed

Parameter set to release a feed

SOH F E - - - - r - - - - - - - - - ETB

Ribon feed

Parameter set to release a ribbon feed

SOH F E B - - - r d ; v - - - - ETB

Direct Coder: Ribbon feed with indication of distance and speed

d: Distance in mm

v: Speed in mm/s

Test print

Parameter set to release a test print

SOH F F - - - - r - - - - - - - - - - ETB

Status print

Parameter set to print a status print

SOH F C M Q - - r N - - - - - - - ETB

N: 0 = settings

N: 1 = bar codes

N: 2 = fonts

Cancel print orders

Parameter set to cancel all active print orders

SOH F G A - - - r N - - - - - - - - - ETB

N: - = Cancel active print orders and delete all layout data

N: 1 = Cancel active print orders and receive layout data

With the execution of this command:

- possible upcoming errors are confirmed
 - possible upcoming customized entries are cancelled

9.12 Emulation

Set emulation

SOH F Z - - - - r N - - - - - - - - ETB

N: 0 = CVPL (Carl Valentin Programming Language)
N: 1 = ZPL II® (Zebra Programming Language)

Enquire emulation

SOH F Z - - - - w p p p p p p p p p p ETB

Answer

SOH A N - - - - - - p p p p p p p p ETB

10 Parameter Sets for C Mode

10.1 Machine Parameters

Set operating mode

SOH	F	C	D	C	-	-	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 1 = external I/O static

N: 3 = external I/O static continuous

N: 5 = external I/O dynamic

N: 6 = external I/O dynamic continuous

Enquire operating mode

SOH	F	C	D	C	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set print offset

SOH	F	C	A	D	L	A	r	N	N	N	N	N	-	-	M	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNNN: print offset value

M: unit - 0 = print offset in 1/10 mm (00000 ... 09999)

1 = print offset in 1/10 ms (00000 ... 99999)

Enquire print offset

SOH	F	C	A	D	L	A	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	N	-	-	M	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNNN: print offset value

M: unit - 0 = print offset in 1/10 mm

1 = print offset in 1/10 ms

Set material speed at print start signal

SOH	F	C	A	D	U	D	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Off

N: 1 = On

Enquire material speed at print start signal

SOH	F	C	A	D	U	D	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Off

N: 1 = On

Set encoder resolution

SOH	F	C	A	D	U	A	r	N	N	N	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: value of encoder resolution (0100...9999)

Enquire encoder resolution

SOH	F	C	A	D	U	A	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set material feed per encoder turn

SOH	F	C	A	D	U	B	r	N	N	N	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: value of material feed in mm (0010 ... 9999)

Enquire material feed per encoder turn

SOH	F	C	A	D	U	B	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Enquire material speed

SOH	F	C	A	D	U	C	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

By means of this command set it is possible to enquire material speed in mm/s. Please note that it is only possible to enquire the value and not to set.

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

10.2 Ribbon Save

Set ribbon save mode

SOH	F	C	D	R	A	-	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N = 0: Aus

N = 1: Standard

N = 2: Stage 2

N = 3: Manually

Enquire ribbon save mode

SOH	F	C	D	R	A	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set synchronisation of transfer ribbon and printhead

SOH	F	C	D	R	B	-	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: Value of synchronization in % (000-100)

Enquire synchronization of transfer ribbon and printhead

SOH	F	C	D	R	B	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set time for printhead move down

SOH	F	C	D	R	C	A	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN: value of time for printhead move down in ms (0000 ... 9999)

Enquire time for printhead move down

SOH	F	C	D	R	C	A	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set feedback distance

SOH	F	C	D	R	F	A	r	N	N	N	N	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN: distance in mm

Enquire feedback distance

SOH	F	C	D	R	F	A	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set feedback speed

SOH	F	C	D	R	F	B	r	N	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN: feedback speed in mm/s

Enquire feedback speed

SOH	F	C	D	R	F	B	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set power of transfer ribbon motor

SOH	F	C	D	R	D	A	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: value of transfer ribbon motor power in % (010 ... 200)

Enquire power of transfer ribbon motor

SOH	F	C	D	R	D	A	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set brake power for acceleration and braking

SOH	F	C	D	R	E	A	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: value of brake power for acceleration and braking
in % (000 ... 200)**Enquire brake power for acceleration and braking**

SOH	F	C	D	R	E	A	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set brake power during printing

SOH	F	C	D	R	E	B	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: value of brake power during printing in % (000 ... 200)

Enquire brake power during printing

SOH	F	C	D	R	E	B	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

10.3 I/O Parameters

Set IN signal level

SOH	F	C	M	D	C	-	r	1	2	3	4	5	6	7	8	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

1-8 (inputs 1-8): 2 = increased and decreased

1 = increased

0 = decreased

s = I/O signal by interface

x = I/O signal blocked

Enquire signal level

SOH	F	C	M	D	C	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	0	1	2	3	4	5	6	7	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set OUT signal level

SOH	F	C	M	D	D	-	r	1	2	3	4	5	6	7	8	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

1-8 (outputs 1-8): 1 = signal level 1

0 = signal level 0

s = I/O signal by interface

x = I/O signal blocked

Enquire OUT signal level

SOH	F	C	M	D	D	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	0	1	2	3	4	5	6	7	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set software input

SOH	F	C	M	D	F	-	r	1	2	3	4	5	6	7	8	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

1-8 (inputs 1-8): 1 = set software input

0 = delete software input

- = not considering software input

P = pulse, execute software input once

Example: Auslösen eines Startimpulses = FCMDF-rP-----

Enquire current status of software inputs

SOH	F	C	M	D	F	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	0	1	2	3	4	5	6	7	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set software output

SOH	F	C	M	D	G	-	r	1	2	3	4	5	6	7	8	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

1-8 (outputs 1-8): 1 = set software output
0 = delete software output

Set start signal delay

SOH	F	C	S	D	D	-	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: start signal delay in 1/100 s (0 ... 999)

Enquire start signal delay

SOH	F	C	S	D	D	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	-	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set cancel continuous print (operating mode)

SOH	F	C	S	D	F	A	r	N	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Offs

N: 1 = On

Enquire cancel continuous print (operating mode)

SOH	F	C	S	D	F	A	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set output signal 'print ready' active

SOH	F	C	S	D	J	-	r	N	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Off; at print start the 'print ready' signal is inactive.

N: 1 = On; at print start the 'print ready' signal remains active.

Enquire output signal 'print ready' active

SOH	F	C	S	D	J	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: current setting (see above)

11 Parameter Sets for I Mode

11.1 Machine Parameters

Set operating mode

SOH	F	C	A	D	H	-	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 1 = process single items

N: 2 = continuous

Enquire operating mode

SOH	F	C	A	D	H	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: current operating mode

Set print speed

SOH	F	C	A	A	-	-	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: Indication of print speed in mm/s

It is necessary to transmit a 3 digit ASCII number.

Enquire print speed

SOH	F	C	A	A	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	-	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set back speed

SOH	F	C	A	D	G	-	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: indication of back speed in mm/s (050 ... 400)

Enquire back speed

SOH	F	C	A	D	G	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	-	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: current back speed

Set print offset

SOH	F	C	A	D	L	-	r	N	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN: print offset in 1/10 mm (0000 ... 9999)

Enquire print offset

SOH	F	C	A	D	L	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	N	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNNN: current print offset

Set ribbon save On/Off

SOH	F	C	D	J	-	-	r	N	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Off

N: 1 = On

Enquire ribbon save On/Off

SOH	F	C	D	J	-	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

11.2 I/O Parameters

Set IN signal level

SOH	F	C	M	D	C	-	r	1	2	3	4	5	6	7	8	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

1-8 (inputs 1-8): 2 = increased and decreased

1 = increased

0 = decreased

s = I/O signal by interface

x = I/O signal blocked

Enquire signal level

SOH	F	C	M	D	C	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	0	1	2	3	4	5	6	7	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set OUT signal level

SOH	F	C	M	D	D	-	r	1	2	3	4	5	6	7	8	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

1-8 (outputs 1-8): 1 = signal level 1

0 = signal level 0

s = I/O signal by interface

x = I/O signal blocked

Enquire OUT signal level

SOH	F	C	M	D	D	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	0	1	2	3	4	5	6	7	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set I/O protocol port

SOH	F	C	M	D	E	-	r	T	C	P	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Port: Off

COM1

COM2

TCP

Enquire I/O protocol port

SOH	F	C	M	D	E	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	0	1	2	3	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set software input

SOH	F	C	M	D	F	-	r	1	2	3	4	5	6	7	8	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

1-8 (inputs 1-8): 1 = set software input

0 = delete software input

- = not considering software input

P = pulse, execute software input once

Example: Enter a start impulse = FCMDF-rP-----**Enquire current status of software inputs**

SOH	F	C	M	D	F	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Antwort

SOH	A	0	1	2	3	4	5	6	7	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set software output

SOH	F	C	M	D	G	-	r	1	2	3	4	5	6	7	8	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

1-8 (outputs 1-8): 1 = set software output

0 = delete software output

Set debounce start signal

SOH	F	C	S	D	C	-	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: debounce time start signal in ms (0 ... 100)

Enquire debounce start signal

SOH	F	C	S	D	C	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set start signal delay

SOH	F	C	S	D	D	-	r	N	N	N	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

NNN: start signal delay in 1/100 s (0 ... 999)

Enquire start signal delay

SOH	F	C	S	D	D	-	w	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	N	N	-	-	-	p	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Enquire cancel continuous print (operating mode)

SOH	F	C	S	D	F	A	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Set output signal 'print ready' active

SOH	F	C	S	D	J	-	r	N	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = Off; at print start the 'print ready' signal is inactive.

N: 1 = On; at print start the 'print ready' signal remains active.

Enquire output signal 'print ready' active

SOH	F	C	S	D	J	-	w	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Answer

SOH	A	N	-	-	-	-	-	p	p	p	p	p	p	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: current setting (see above)

12 Configuration & Status

Save configuration permanent

In case you want to save the described settings permanent into the printing system, then you have to transmit the following command to the printing system.

SOH	F	X	-	-	-	r	N	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	-----

N: 0 = save current parameter

N: 1 = set all parameters to default values

Then the printer performs a restart

Read configuration

SOH	F	X	-	-	-	w	-	-	-	-	-	-	ETB
-----	---	---	---	---	---	---	---	---	---	---	---	---	-----

The printing system sends as answer all current settings as parameter sets.

Status enquiry

Host computer can receive information about the printing system by the serial interface.

The status enquiry has the following data format:

SOH	S	ETB
-----	---	-----

Status return information

After receiving the status enquiry the printing system sends the corresponding status return information.

Data format of status enquiry

SOH	1. Byte	2. Byte	5.-1. digit	ETB
	8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1		

1. Byte	=	1. Status byte
		8. Bit = free
		7. Bit = always set
		6. Bit = free
		5. Bit = 1 = running print order 0 = no. of items (0 = no print order)
		4. Bit = 1 = press stop key 0 = not pressed stop key
		3. Bit = cutter error (0 = no error; 1 = error)
		2. Bit = layout material (0 = no error; 1 = error)
		1. Bit transfer ribbon (0 = no error; 1 = error)
		2. Status byte
2. Byte	=	8. - 4. Bit = free
		3. Bit = Compact Flash card
		2. Bit = Mask set
5.-1. digit	=	1. Bit = Printhead temperature
		number of pieces with 5 digits as ASCII characters min. '00000' / max. '65535'

12.1 Autostatus

The direct printing systems are equipped with an auto status function, i.e. in certain operating modes the printing system actively sends the corresponding status. This can be enquired by the serial interface.

To activate the auto status, the host computer has to send the following command to the printing system:

SOH	G	1. Byte	2. Byte	ETB
-----	---	---------	---------	-----

Each of the below indicated message which is observed and send by the printing system has to be transmitted with a set Bit (see table below 1. Byte and 2. Byte) to the printing system by means of auto state function. The printing system sends after each performed condition the corresponding message (answer) to the host computer.

The following messages are provided:

1 Start of generation
2 End of generation

The printing system sends this state in case data for a complete layout was generated. The test print was not taken into consideration.

For counters/date variables the printing system sends for each layout a status cycle (start, end).

3 Start of printing

4 End of printing

The start of the print is send in case the generated data is send. The end of the print is send in case the print of the layout is finished and the motor has stopped.

5 Start of cutting

6 End of cutting

This status describes the cutting. It can be checked for timeout and the end of the cut movement → error.

7 Start of feeding

8 End of feeding

This status is send in case an additional feeding (dispenser, cutter, tear off) is released.

9 Start of a print order

10 End of print order

This status signalizes the start and end of a complete print order (1...99999 layouts). This status is active in all operating modes.

11 Error

This status message is send in case an error occurs.

12 Printing stopped

This message is send if the printing is stopped.

13 Printing resumed

This message is send if the printing is resumed.

The printing system sends the auto status in the following format to the host computer:

SOH	G	1. Byte	2. Byte	ETB
-----	---	---------	---------	-----

1. Byte

- | | |
|------------------------------|------------------------|
| 8. Bit = start of generation | 4. Bit = start cutting |
| 7. Bit = end of generation | 3. Bit = end of cut |
| 6. Bit = start printing | 2. Bit = start feeding |
| 5. Bit = end of print | 1. Bit = always 0 |

2. Byte

- | | |
|-------------------------------|---------------------------|
| 8. Bit = end of layout feed | 4. Bit = free |
| 7. Bit = start of print order | 3. Bit = Printing stopped |
| 6. Bit = end of print order | 2. Bit = Printing resumed |
| 5. Bit = error | 1. Bit = always 0 |



NOTICE!

Bit 1 has to be in 1. Byte and 2. Byte always 0, otherwise the printing system possibly could recognize SOH or ETB.

At the status message of the printing system to the host computer always at least 1 Bit is set. However, it could occur that several Bits are set at the same time.

At the status demand of the host computer to the printing system it is also possible that several Bits are set at the same time.

The auto status demand is saved in the printing system, i.e. it is set to 0 after switching off/on. Therefore it is necessary to demand it anew after each time the printing system is switched on.

Example

The printing system should observe the start of a print order. For this the host computer sends the following demand to the printing system:

SOH	G	00000000	01000000	ETB
-----	---	----------	----------	-----

After the condition is fulfilled (= start of the print order) the printing system sends the following message to the host computer:

SOH	G	00000000	01000000	ETB
-----	---	----------	----------	-----

With regard to the contents the answer corresponds always to the format set.

13 Monitored Printing

This protocol replaces the outdated Autostatus. In contrary to the Autostatus, this is not a binary protocol but a text-based protocol sending the commands as English clear text. The advantage is a very fast and simple error tracing and development. The disadvantage of a larger data volume plays nowadays a smaller role.

13.1 Short Introduction

In order to activate monitored printing:

(SOH)FHM---rSE(ETB)
(SOH)FHA---r2(ETB)

13.2 Parameter Sets (Host – Printer)

Formatting: # - SOH * - ETB

Command: Set monitoring mode.

Syntax: #FHM---rSE $PnnnCnFn^*$

Example: #FHM---rSP10E*

Description: Activates the forwarding of certain events to the server.

The results are:

S - (start/stop): print start, print end, stop printing, continue printing, cancel printing.

E – (error): Error occurred, error confirmed.

C – (photocell): Activates the photocell test (n=1)/disable (n=0)

F – Activates the encoder profile (n=1)/disable (n=0)

P – (progress): Print progress, indicates the number of already printed labels. In standard case, the interval between two events is a label. If a number behind the flag is indicated, an event every nnn labels is released (see example). With column printing the event is released, as soon as the entered interval was reached or exceeded for the first time (example: 3 columns, interval 4, 20 labels in total. Event at label 6,9,12 and 18).

Command: Activate, disable the monitoring.

Syntax: #FHA---rn*

Example: #FHA---r2*

Description: activated, deactivates the monitoring (n=[0,2]);

,0' – enables the monitoring after completion of print order,

,1' – reserved

,2' – activates the monitoring for the current port.

13.3 Direct Enquiry

Command: Requests print status.

Syntax: #FHS---r*

Example: #FHS---r*

Description: Invites the client to send the current status.

Command: User command to the sender of print order.

Syntax: #FHU---r*Daten**

Example: #FHU---rSE*

Description: Sends #*Data** to the sender of print order.
Max 100 characters.

13.4 Answer Sets (Printer – Host)

Event: Print start

Set: #HSStart-*Pagename-Labelsrequested**

Example: #HSStart-NoName1-100*

Description: Indicates the start of a print order, including page name and number of labels to be printed.

Event: Printing completed

Set: #HSDone-*Pagename-Labelsprinted**

Example: #HSDone-NoName1-100*

Description: Indicates the completion of a print order including page name and number of printed labels.

Event: Printing stopped

Set: #HSHold-*Pagename-Labelsprinted**

Example: #HSHold-NoName1-10*

Description: Indicates the stopping of print order including page name and number of printed labels. Occurs when the user stopped the print order and/or after occurrence of an error.

Event: Continue printing

Set: #HSContinue-*Pagename-Labelsprinted**

Example: #HSContinue-NoName1-55*

Description: Indicates the continuation of print order including page name and number of printed labels. Occurs when the user restarts the print order.

Event: Cancel printing

Set: #HSAborted-*Pagename-Labelsprinted**

Example: #HSAborted-NoName1-57*

Description: Indicates the cancelation of printing including page name and number of printed labels.

Event: Error
Set: #HSError-Pagename-Labelsprinted-ErrorID-Errormessage*
Example: #HSError-NoName1-57-28-Messerfehler*
Description: Indicates the occurrence of an error including page name, number of printed labels, error ID and error text.

Event: Error confirmation at printer
Set: #HSAck-Pagename-Labelsprinted *
Example: #HSAck-NoName1-57*
Description: Indicates the confirmation of an error including page name and number of printed labels.

Event: Print progress
Set: #HSProgress-Pagename-Labelsprinted *
Example: #HSProgress-NoName1-60*
Description: Indicates the progress of print order including page name and number of printed labels. This event is also returned as answer to status enquiry, if the printer is printing.

Event: Photocell value
Set: #HSPhotocell-DLS:xxx-RLS:xxx*
Example: #HSPhotocell-DLS:3.8-RLS:1.9*
Description: Returns the values of transmission and reflexion photocell. The verification takes place every 5 ms; only changes are sent.

Event: Encoder profile
Set: # HSEnc-Dist:xxx-Speed:xxx*
Example: # HSEnc-Dist:120-Speed:202*
Description: Generates the profile of speed development of the packaging machine during a print order.

Event: Answer to status enquiry (#FHS---r*)
Description: The respective current print event is returned.

13.5 Sample Label

A simple label with monitoring of all parameters with output of the progress – all 10 labels could look as following:

```
FHM---rSP10E
//Ueberwachung einschalten
FHA---r2
// JOBNAME: "ETIKETT1"
FBE---rETIKETT1
// TYPE: Endlosetiketten
// HEIGHT: 20.00 mm
// GAPLENGTH: 2.00 mm
// COLUMNS: 1
// COLUMN DISTANCE: 100.00 mm
FCDA--r1-----
FCCL--r0002000-
FCCM--r00000---
FCCA--r1-----
FCCB--r999-----
// SPEED: 50 mm/s
FCAA--r050-----
// CONTRAST: 200%
FCAB--r200-----
// LABELCONTROL: 0
FCDE--r0-----
// RIBBONCONTROL: 1
// RIBBONSENS: 0
FCDB--r10-----
// MATERIAL: Typ 1
FCDNA-r0-----
FCDNB-r1-----
FCDNC-r00000---
// SCAN MODE: 0
// SCAN PORT: 0
// NO READ: 0
// FEED LABEL: 0
FCDM--r00000---
// MIRROR LABEL: Nein
FCDO--r0-----
// TEXT (1/100 mm)
AM[1]1407;6907;0;4;0;3;398;398;8
BM[1]Test
// SETLINENO: 1 lines
FBAA--r1
// SETCOPIES: 1
FBBA--r00050---
// PRINT
FBC---r-----
```

The server output, for example, looks as follows:

```
C:\temp>cvnserver -p9010
Testserv: waiting for connect
0x8Start-ETIKETT1-50$
0x8Progress-ETIKETT1-10$
0x8Progress-ETIKETT1-20$
0x8Hold-ETIKETT1-27$
0x8Continue-ETIKETT1-27$
0x8Progress-ETIKETT1-30$
0x8Error-ETIKETT1-31-35-Druckkopf offen$
0x8Ack-ETIKETT1-31$
0x8Hold-ETIKETT1-31$
0x8Continue-ETIKETT1-31$
0x8Progress-ETIKETT1-40$
0x8Progress-ETIKETT1-50$
0x8Done-ETIKETT1-50$
Testserv: waiting for connect
```

14 Font Examples

14.1 Bitmap Fonts (Not Proportional)

Font 01 (8 x 11) Verhältnis 3:3
Font 02 (12 x 17) Verhältnis 3:3
Font 03 (18 x 26) Verhältnis 2:2
Font 04 (40 x 56) Verhältnis 1:1
Font 05 (18 x 32 mit Unterlängen) Verhältnis 2:2
Font 07 (12 x 22 mit Unterlängen) Verhältnis 2:2

14.2 Bitmap Fonts (Proportional)

- Font 21 (10 proportional) Verhältnis 3:3
- Font 22 (18 proportional) Verhältnis 2:2
- Font 23 (26 proportional) Verhältnis 2:2
- Font 24 (56 proportional) Verhältnis 1:1**
- Font 28 (40 proportional) Verhältnis 1:1
- Font 29 (8 proportional) Verhältnis 5:5

14.3 Vector Fonts

Absender (Baskerville)	Das ist ein Musteretikett für die Darstellung der Schriftarten (Monospace)
<u>Gold, Petra (Swiss Light)</u>	
Name, Vorname (Helvetica Bold)	
<u>Goldstraße 456 (Swiss Light)</u>	
Straße, Hausnummer (Helvetica Bold)	
<u>23456 Golddorf (Swiss Light)</u>	
PLZ, Ort (Helvetica Bold)	
<i>Musterlieferung Bitte bestätigen Sie den Empfang. (Brush Script)</i>	Empfänger (Baskerville)
	<u>Mustermann, Max (Helvetica Roman)</u>
	Name, Vorname (Helvetica Bold)
	<u>Musterstraße 123 (Helvetica Roman)</u>
	Straße, Hausnummer (Helvetica Bold)
	<u>45678 Musterstadt (Helvetica Roman)</u>
	PLZ, Ort (Helvetica Bold)

15 Index

#

*FBAA, line number	53
*FBAA, number of lines.....	79
*FBBA, total items of print order	80
*FBBB, layouts still to print.....	80
*FBBC, already printed layouts.....	80
*FBC, start printing.....	81
*FBE, start printing (assign printjob identifier)	81
*FBF, initialisation of page handling	81
*FBG, selection of current page.....	81
*FBH, order of pages	81
*FBI, generation of page w/o print start	81
*FCAA, print speed	91
*FCAB, contrast	52
*FCADG, back speed (intermittent mode)	91
*FCADH, operating mode (intermittent mode).....	91
*FCADI, layouts/cycle	51
*FCADK, print position	55
*FCADL, print offset (intermittent mode).....	92
*FCADLA, print offset.....	65
*FCADLA, print offset (continuous mode).....	85
*FCADO, operating mode	55
*FCADUA, encoder resolution (continuous mode)	86
*FCADUB, material feed (continuous mode)	86
*FCADUC, material speed (continuous mode)	86
*FCADUD, material speed (continuous mode)	85
*FCCE, x offset	65
*FCCE, X offset.....	51
*FCCHA, number of columns	52
*FCCHB, column width	53
*FCCJ, alignment.....	52
*FCCL, layout length 1/100 mm.....	51
*FCCN, codepage.....	57
*FCCO, layout width 1/100 mm	51
*FCCP, external print parameters.....	56
*FCDB, transfer ribbon control.....	55
*FCDC, operating mode (continuous mode).....	85
*FCDI, display language	56
*FCDJ, ribbon save (intermittent mode)	92
*FCDK, field handling.....	56
*FCDN, rotate layout.....	53
*FCDNC, material	52
*FCDO, flip layout	53
*FCDQA, transfer ribbon length	67
*FCDRA, ribbon save mode (continuous mode)	87
*FCDRB, synchronization (continuous mode)	87
*FCDRCA, printhead move down time (continuous mode)	87
*FCDRDA, ribbon motor power (continuous mode)	88
*FCDREA, brake power for acceleration/braking (continuous mode)	88
*FCDREB, brake power during printing (continuous mode)	88
*FCDRFA, feedback distance (continuous mode).....	87
*FCDRFB, feedback speed (continuous mode).....	88

*FCDS, flip/rotate layout	54
*FCDU, user guiding	57
*FCDW, hotstart.....	57
*FCFF, interface parameters	59
*FCGC, SOH/ETB.....	59
*FCGD, data memory	60
*FCGEA, reaction unknown questions	60
*FCHA, paper counter printing system	69
*FCHB, paper counter printhead	69
*FCIA, date	69
*FCIB, time.....	69
*FCIG, automatic clock adjustment	70
*FCIH, beginning of summertime.....	71
*FCII, end of summertime	71
*FCIJ, time shifting.....	71
*FCKA, password.....	72
*FCKB, function group (password)	72
*FCKC, password active/inactive.....	73
*FCKDA, password function menu	73
*FCKDB, password favorites menu	73
*FCKDC, password memory card.....	73
*FCKDD, password printing manually	74
*FCLA, IP address (network)	61
*FCLB, netmask (network).....	61
*FCLC, gateway address (network).....	61
*FCLD, transmission mode (network)	62
*FCLE, DHCP support (network)	62
*FCLF, print module name (network).....	62
*FCLMB, MAC address (network)	62
*FCLNI, NTP server IP (network)	63
*FCLNS, NTP status (network).....	64
*FCLNZ, time zone (network)	64
*FCLZ, reset network device (network)	64
*FCMBC, printhead closed	66
*FCMBD, printhead open.....	66
*FCMBH, compressed air sensor	65
*FCMBI, cover sensor.....	65
*FCMC, printhead temperature.....	67
*FCMDC, IN signal level (continuous mode)	89
*FCMDC, IN signal level (intermittent mode).....	93
*FCMDD, OUT signal level (continuous mode)	89
*FCMDD, OUT signal level (intermittent mode).....	93
*FCMDE, I/O protocol port (intermittent mode).....	93
*FCMDF, software input (continuous mode).....	89
*FCMDF, software input (intermittent mode)	94
*FCMDG, software output (continuous mode).....	90
*FCMDG, software output (intermittent mode)	94
*FCMG, printhead resistance	68
*FCMH, reset error.....	79
*FCMHA, error ID/error text	79
*FCMKC, online/offline.....	66
*FCMKD, reprint action	66
*FCMKE, standard layout	58
*FCMLA, ribbon prior warning	67
*FCMLB, ribbon prior warning diameter	67
*FCMLC, ribbon diameter	68
*FCMLDA, mode (ribbon prior warning)	68

*FCMQ, status print	82
*FCNRA, custom logo	68
*FCSDC, debounce start signal (intermittent mode)	94
*FCSDD, start signal delay (continuous mode)	90
*FCSDD, start signal delay (intermittent mode)	94
*FCSDFA, continuous print (continuous mode)	90
*FCSDFA, continuous print (intermittent mode)	95
*FCSDFC, layout change confirmation	58
*FCSDFD, print after measuring	58
*FCSDJ, output signal (continuous mode)	90
*FCSDJ, output signal (intermittent mode)	95
*FD, start/stop command	79
*FE, feed	82
*FEB, ribbon feed	82
*FF, test print	82
*FGA, cancel print order	82
*FMA, save layout (cf card)	75
*FMB, load file (cf card)	75
*FMC, delete layout (cf card)	75
*FMD, format (cf card)	75
*FMG, table of contents (cf card)	75
*FMH, memory space (cf card)	76
*FMI, create directory (cf card)	76
*FMJ, delete directory (cf card)	76
*FMJA, delete directory path (cf card)	76
*FMK, change directory (cf card)	76
*FMKB, standard directory via I/O (cf card)	77
*FML, transfer file (cf card)	77
*FMM, enquiry if the file exists (cf card)	77
*FMP, size of cf card	77
*FMS, drive status (cf card)	78
*FZ, emulation	83

A

alignment, layout	52
-------------------------	----

B

back speed (intermittent mode)	91
brake power (continuous mode)	
during printing	88
for acceleration/braking	88

C

clock adjustment, automatical	
beginning of summertime	71
end of summertime	71
time shifting	71
codepage	57
column	
number, column printing	52
width, column printing	53
compact flash card	
change directory	76
create directory	76
delete directory	76
delete directory path	76
delete layout	75

drive status	78
enquiry if the file exists	77
format card.....	75
load file.....	75
readout free memory space.....	76
save label.....	75
size of cf card.....	77
standard directory via I/O.....	77
transfer file	77
compressed air sensor	65
configuration and status	
autostatus	98, 99
saving.....	97
status enquiry	97
status return information	97
continuous mode (parameter sets)	
I/O parameters	89, 90
machine parameters	85, 86
ribbon save	87
continuous print (continuous mode)	90
continuous print (intermittent mode).....	95
contrast.....	52
cover sensor.....	65
custom logo	68

D

data format	
explanation	10
field attributes	11
field name	12, 13, 14, 15, 16
field properties	11
general information	9
Data format	
Field selection	16
data memory	60
date/time	
automatic clock adjustment	71
automatical clock adjustment	70
date	69
time	69
datum point (text, bar code, graphic)	8
debounce start signal (intermittent mode)	94
device settings	
codepage	57
display language.....	56
external print parameters.....	56
field handling.....	56
hotstart	57
layout change confirmation	58
operating mode	55
print after measuring	58
print position	55
standard layout	58
transfer ribbon control	55
user guiding	57
DHCP support, network.....	62
display language	56

E

emulation	83
encoder resolution (continuous mode)	86
external print parameters	56

F

feed.....	82
feedback distance (continuous mode)	87
feedback speed (continuous mode)	88
field handling	56
font examples	
bitmap fonts (not proportional).....	105
bitmap fonts (proportional).....	105
vector fonts	105
format identifier, date/time.....	39, 40, 41

G

gateway address, network.....	61
generation, selected page	81
graphic set	
general graphic format.....	33
PCX format	33, 34

H

hotstart.....	57
---------------	----

I

I/O parameters (continuous mode)	
continuous print	90
IN signal level	89
OUT signal level	89
output signal	90
software input	89
software output	90
start signal delay.....	90
I/O parameters (intermittent mode)	
continuous print	95
debounce start signal.....	94
I/O protocol port	93
IN signal level	93
OUT signal level	93
output signal	95
software input	94
software output	94
start signal delay.....	94
I/O protocol port (intermittent mode)	93
IN signal level (continuous mode)	89
IN signal level (intermittent mode).....	93
initialisation of page handling	81
interface	
parameters.....	59
SOH/ETB	59
intermittent mode (parameter sets)	
I/O parameters	93, 94, 95
machine parameters	91, 92
IP address network.....	61

L

layout	
flip layout.....	53
flip/rotate	54
rotate layout	53
layout change confirmation	58
layout length in 1/100 mm	51
layout parameters	
alignment	52
column width.....	53
contrast	52
flip layout.....	53
flip/rotate layout	54
layout length in 1/100 mm.....	51
layout width in 1/100 mm.....	51
layouts/cycle	51
material	52
number of columns	52
number of lines	53
rotate layout	53
x offset	51
layout width in 1/100 mm.....	51
line number.....	79
lines (number), column printing	53

M

MAC address.....	63
machine parameters (continuous mode)	
encoder resolution	86
material feed	86
material speed	85, 86
operating mode.....	85
print offset	85
machine parameters (intermittent mode)	
back speed	91
operating mode.....	91
print offset.....	92
print speed	91
ribbon save	92
mask set	
bar code Aztec Code	28
Bar code CODABLOCK F.....	25
bar code DataMatrix	23
bar code GS1 DataMatrix	24
bar code MAXICODE.....	22
bar code PDF417.....	21
bar code QR Code.....	27
bar code, GS1 DataBar (RSS)	26
bar code, ITF	20
bar code, one-dimensional	19
internal graphic	30
line	29
rectangle	29
text	17, 18
material feed/encoder turn (continuous mode)	86
material selection	52
material speed (continuous mode).....	85, 86
monitored printing.....	101, 102, 103, 104

N

netmask, network	61
network	
DHCP support.....	62
gateway address.....	61
IP address.....	61
MAC address	63
netmask	61
NTP server IP	63
NTP status	64
print module name	62
reset network device	64
time zone (hour offset).....	64
transmission mode.....	62
NTP server IP	63
NTP status.....	64

O

offset values	
print offset	65
x offset	65
online/offline	66
operating mode	55
operating mode (continuous mode)	85
operating mode (intermittent mode)	91
order (pages to print).....	81
OUT signal level (continuous mode)	89
OUT signal level (intermittent mode).....	93
output signal (continuous mode)	90
output signal (intermittent mode).....	95

P

paper counter	
printhead.....	69
printing system.....	69
parallel data transmission, connection plan	7
parameter sets	
compact flash card.....	75, 76, 77, 78
data memory	60
date/time	69, 70, 71
device settings	55, 56, 57, 58
emulation	83
I/O parameters (continuous mode)	89, 90
I/O parameters (intermittent mode)	93, 94, 95
interface	59
interface protocol	59
layout parameters	51, 52, 53, 54
machine parameters (continuous mode)	85, 86
machine parameters (intermittent mode).....	91, 92
network	61, 62, 63
offset values.....	65
password	72, 73, 74
password favorites menu.....	73
password function menu.....	73
password memory card	73
password printing manually	74
printing	79, 80, 81, 82
ribbon save (continuous mode)	87, 88
service functions	66, 67, 68

password	72, 73, 74
print after measuring	58
print module name.....	62
print offset.....	65
print offset (continuous mode).....	85
print offset (intermittent mode)	92
print order, cancel.....	82
print position	55
print speed (intermittent mode)	91
printhead	
resistance	68
temperature	67
printhead closed	66
printhead move down time (continuous mode)	87
printhead open	66
printing	
cancel print orders	82
feed	82
generation of selected page	81
initialisation of page handling	81
item number of print order	80
number of lines	79
print order	81
reset error	79
ribbon feed	82
selection of current page	81
start printing	81
start/stop command	79
status printing	82
test print	82
printing, start.....	81

R

reaction, unknown questions.....	60
reprint action.....	66
reset error.....	79
reset network device	64
ribbon feed	82
ribbon save (continuous mode)	
brake power during printing	88
brake power for acceleration/braking	88
feedback distance	87
feedback speed	88
printhead move down time.....	87
ribbon motor power.....	88
ribbon save mode	87
synchronization.....	87
ribbon save (intermittent mode)	92
ribbon save mode (continuous mode).....	87
rotation (text, bar code, graphic)	8

S

sensors	
compressed air	65
cover	65
serial data transmission	
connection plan RS232.....	6
connector assignment.....	5

service functions	
custom logo	68
online/offline.....	66
printhead resistance	68
printhead temperature	67
reprint action	66
transfer ribbon length.....	67
transfer ribbon prior warning.....	67
transfer ribbon prior warning, diameter.....	67
transfer ribbon prior warning, mode.....	68
software input (continuous mode)	89
software input (intermittent mode).....	94
Software output (continuous mode)	90
software output (intermittent mode)	94
SOH/ETB.....	59
standard layout.....	58
start signal delay (continuous mode)	90
start signal delay (intermittent mode)	94
start/stop command.....	79
status print.....	82
synchronization (continuous mode)	87

T

test print.....	82
text set	
example	32
general information.....	31
time zone (hour offset)	64
transfer ribbon control	55
transfer ribbon length	67
transfer ribbon motor power (continuous mode)	88
transfer ribbon prior warning	67
diameter.....	67
mode	68
transmission mode	62

U

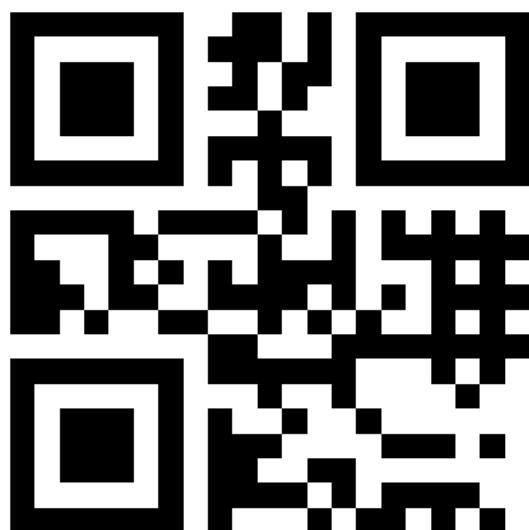
user guiding.....	57
-------------------	----

V

variables	
check digit.....	48
counter	36
counter, extended.....	37
currency variable	42
date/time	38, 39, 40, 41
EPC (electronic product code).....	47
GS1-128 Parser.....	46
link field	35
memory card data.....	46
set structure	35
shift variable.....	43
substring	49
user guiding	44
user guiding with mask	45

X

x offset	51, 65
----------------	--------



REDEMAC
3540 Griffith St, Saint-Laurent, Quebec H4T 1A7
Phone: (888) 335-9570

www.redemac.com
request@redemac.com

