

Documentation Leibinger Script language

V1.6.0.20

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Language layout

The Script language LJScript is a language to describe complete print layouts for the Leibinger-Jet.

LJScript uses only ASCII-characters and as control characters only Carriage Return (CR) and Line Feed (LF).

Used are commands which have fixed keywords. A parameter list follows. Furthermore the following comments can be inserted.

Syntax:

```
% comment
KEYWORD [Parameter list]
KEYWORD [Parameter list]      % comment
KEYWORD [Parameter list]
```

Keywords are always written in capital letters.

The parameter list is specified in square brackets: [Parameter list]

Only one keyword is permitted per line.

The several parameters in the parameter list are separated by one or more blanks, tabulators (Tab, Hex 09) or Carriage Return (0x0D) and Line Feed (0x0A).

Lists and texts which occur in the parameter list are specified in parentheses () .

A backslash \ is prepended to the following characters if they should be part of the text:

```
) < \ % [ ] results in: \) \< \\ \% \[ \]
```

Every element which is declared refers to the last defined object.

Comments can be used. They always start with the percentage symbol % and end always at the end of line (CR and LF). They cannot be in a command.

If the parameters have a limit value MAXINT, the values margin of 32 Bit Integer is valid. It goes from -2.147.483.648 up to +2.147.483.647

Floating point numbers are indicated with the decimal point. Power specifications do not exist. Time is indicated in hours (hh) and minutes (mm) and/or seconds (ss). Separators are indicated in colons. Example: hh:mm:ss

Coordinate system

X is the transport direction. Units are always strokes

The 1. stroke has the X-coordinate X.0

Y is the direction in which the drops are deflected. Units are ink dots.

The 1st ink dot is placed at the gutter tube and has the Y-coordinate Y.0

Keywords

Keywords	Meaning
BEGINLJSCRIPT	Indicates the beginning of a Script (job list)
JLPAR	Declares the job list parameter
BEGINJOB	Indicates the beginning of a job
JOBPAR	Declares the job parameter
OBJ	Declares object parameter
CNT	Declares counter objects
COD	Declares barcode objects
TIME	Declares date-/time objects
SHIFTS	Declares shift time objects
RPLDAY	Declares replacements for weekdays of date objects
RPLMON	Declares replacements for months of date objects
RPLYEAR	Declares replacements for years of date objects
ENDJOB	Indicates the end of a job
PGJOB	Declares Batch Job List
JOBORG	Declares job organizer list
EXTSEL	Declares external job select list
ENDLJSCRIPT	Indicates the end of a Script
VISION	Declares parameters for the V-check system.

Table 1: Keywords

Beginning of Script

Syntax: BEGINLJSCRIPT [Parameter list]

Every Script has to start with this keyword.

The parameter list contains only one text which has to have the version of the following format:
(Va.b.c.d)

Meaning:

a=Generation

b=Upgradings /Changes

c=Bugfix-counter

d=Index for special functions

Always use the version of this document!

Further parameters can follow but they can only be used as comments.

End of Script

Syntax: ENDLJSCRIPT [Parameter list]

Every Script has to end with this keyword.

The parameter list is not analysed, can be empty.

Layout of parameter lists

JLPAR parameter list (Job list parameter)

Syntax: JLPAR [Parameter list]

The system parameters occur only once in the Script.

The parameter list contains the following parameters in this order:

	Values margin	Unit	
1	Print Height Y	0 ... 100	
2	PrintGo-signal	0 - 2	
3	PrintGo-Gate	0 - 2	
4	Encoder-signal	0 - 4	
5	Speed	1 – 1000	dm/min, (for int. Encoder-Signal)
6	Rotation	0 90 180 270	Degree, anticlockwise
7	Mirrored	0 1	
8	Encoder resolution	1 - 2000000000	pulse / m
9	Shifting Change of date	00–23:0-59	hours:minutes
10	Backward Lock	0 1	
11	Speed dependant output	0 ... 1000	dm/min
12	Encoder for mirrored	0 1	
13	Extern reset for batch job	0 1	
14	PGG-PG Distance	1000-250000	µm

Table 2: Declaration of the job list parameter

Print Height

This parameter adjusts the high-voltage at the deflection plates.

A value of 100 corresponds to the maximum possible print height of the selected printing mode.

PrintGo Signal

PrintGo-Signal	
Internal	= 0
External Lo-Hi-edge	= 1
External Hi-Lo-edge	= 2

Table 3: PrintGo-Signal

PrintGo-Gate Signal

PrintGo-Gate	
Function deactivated	= 0
Hi-Active	= 1
Lo-Active	= 2

Table 4: PrintGo-Gate

PrintGo-Gate is an external input. With that you can block the external and internal PrintGo-signals.

Hi-Active:

The PrintGo-signals can only pass if the input is on **Hi**.

Lo-Active:

The PrintGo-signals can only pass if the input is on **Lo**.

Encoder signals

Encoder-Signal	
Internal	= 0
External, direction 1 (clockwise)	= 1
External, direction 2 (counter clockwise)	= 2
External, both directions	= 3
Speed measuring ⁽¹⁾	= 4

Table 5: Encoder-Signal

(1) = Only after Jet3up

Determination of the speed with measuring
of the time between PGG (PrintGo gate)
and PG (PrintGo) Sensor

Mirrored

The fitting position of the print head is adjusted here.

Mirrored is a mirror by the Y-axis.

This parameter is ignored in the Jet3up (should be 0). To get a mirrored print use the mirror parameter in the JOBPAR command.

Encoder resolution

Is the resolution of the connected encoder in pulses/m.

Shifting Change of date

Usually the date is changed at midnight. With this parameter the time can be shifted by up to 23 h and 59 min. The hour and minute specifications are separated by a colon.

Backward Lock

Is only reasonable if the Encoder signal is on external, direction 1 or direction 2.

Guarantees that the print will be continued at the correct position after a short operation against the print direction.

Speed dependant output

When the speed (from the encoder) is increasing this value, the output "Speed dependant output" will be switched to high signal.

It will be switched off when the speed is falling under 10% below this value.

From job version V01.06.00.10 the value is specified in decimeter/min so that the resolution will be slightly larger. In the display the value appears in m/min, but with a fractional point.

Encoder for mirrored

If this set to 1 the backward signal of a connected external encoder is used as horizontal mirror information on the next print go.

Extern reset for batch job

If this set to 1 an external input (e.g. X3.7 on Jet3up) is used for resetting the batch job list to the first job.

PGG-PG Distance

Distance between PGG (PrintGo Gate) Sensor and PG (PrintGo) Sensor in µm. Is used for calculating of the speed when „Encoder Signal“ is switched to Speed measuring.
Only available in Jet3up!

VISION Parameter list:

Syntax : **VISION [Parameter list]**

Vision parameter is used for the settings of the new V-check Sensor. It's used only once in one job or joblist.

This parameter is only used in the Jet3up.

The parameter list contains following parameter in these order.

	Wertebereich	Einheit	
1	V-check enabled for job	0 = Disabled 1 = Enabled	Default: 0
2	Operation Monitoring	0 - MAXINT	1
3	Trigger offset	0 - MAXINT	0
4	Trigger delay	0 - MAXINT	55000 in µm
5	„Bad“ signal until warning	0 - MAXINT	3
6	„Bad“ signal until error	0 - MAXINT	5
7	„Too fast“ signal until warning	0 - MAXINT	3
8	„Too fast“ signal until error	0 - MAXINT	5

Table 5: Declaration of Vision parameter

V-check enabled for job

With this flag set (=1) the results of the V-check will be processed and error/warning messages may be displayed. When the flag is not set (=0) the V-check signals will not be processed.

BEGINJOB parameter list:

Syntax: **BEGINJOB [Parameter list]**

Several jobs can be found in a Script.

Basically a job consists of a bunch of objects.

The parameter list of BEGINJOB has the following parameters in the following order:

Values margin	Unit
ID-number	Dependent on printer model
Name	(alphanumeric text)

Table 6: Parameter list of BEGINJOB

ID-number:

The identification-number can be freely chosen inside the following range.

For double numbers only the last number is considered.

Range for

- Jet2neo: 0..255
- Jet3, Jet3up: 0..1023

ENDJOB parameter list

The parameter list of ENDJOB is empty.

JOBPAR parameter list (Job parameter)

Syntax: **JOBPAR [Parameter list]**

Values margin	Unit
1 PrintGo-delay	0 - MAXINT
2 PG-repetition	0 - 65535
3 PG-distance	0 - MAXINT
	µm, only for PG-repetition. > 0:
4 Stroke distance	0 – MAXINT
5 Print Mode	0-11
optional:	
6 Flight time compensation	0-MAXINT
7 Sensor control	0 1
	Leave that 0 !
8 Stroke control	0 1
9 PrintGo control	0 1
10 PGHoldOff	0-MAXINT
11 IdentNr CameraJob	(-1) – 2^31
12 CameraJob Name	(alphanumeric text)
13 Max. products between printer and Camera	1 - 1000
14 Product offset between printer and Camera	1 – 1000
15 Cameratrigger-delay	0-MAXINT
16 Print stop interrupts print-out immediately	0 1
17 Indexcounter of previous camera job data	0 - 65535
18 Plotmode	0 1
19 Mirrored	0 1
20 PG Length	0-50000000
21 PG Tolerance	1000-10000000

Table 7: Declaration of the job-parameters

PrintGo-delay

The print (job) starts only after this delay.

The unit is µm.

PG-repetition

- | | |
|------------------|---|
| n = 0: | No repetition, that means there is only one print per PrintGo-signal. |
| 1 <= n <= 65534: | Number of prints= n+1 |
| n = 65535: | Number of prints= endless |

PG-distance

If PG repetition>1 has been selected, the distance between two prints is indicated in µm with this parameter.

Stroke distance

Distance between two strokes in µm. This value determines basically the font width.

Print Mode

- 0 = 32 Dot High Quality
- 1 = 32 Dot Fast
- 2 = 32 Dot High Speed
- 3 = 24 Dot High Quality
- 4 = 24 Dot Fast
- 5 = 24 Dot High Speed
- 6 = 24 Dot High Speed Barcode
- 7 = 16 Dot Fast
- 8 = 16 Dot Speed
- 9 = 12 Dot High Speed
- 10 = 5 Dot High Speed
- 11 = 2 Lines High Speed

Note: the 32 dot modes are not available in the Jet2neo!

Flight time compensation

Turned off	= 0
Turned on	> 0

If this value is higher than zero, the PrintGo-delay is reduced depending on the speed. Due to this you can obtain that the print is always at the same place even at different speeds. If the value is 0, then the function is turned off.

Sensor Control

Turned off	= 0
Turned on	= 1

With this switch the following checks will be activated:

- PrintGo Sensor
For this monitoring a 2nd PrintGo Sensor will be used. This must be connected to the PrintGo Gate input. Both sensors must be PNP sensors.
The sensors must be adjusted in this way, that the signals of both sensors overlap for a short time.
An error will be generated, when one of the 2 sensors has not switched, when the other has switched on and off.
- An error will be generated, when there is a PrintGo signal and the production speed is 0 (no encoder pulses)
- An error will be generated if the print is not started.

Sensor control is not available in the Jet2neo!

Stroke Control

Turned off	= 0
Turned on	= 1

If the stroke frequency is higher than the printers maximum stroke frequency, an error is shown.
The print will not be stopped.

PrintGo Control

Turned off	= 0
Turned on	= 1

If a further PrintGo-signal appears during the delay or during the print, an error is caused.
The print will not be stopped.

PGHoldOff

Value to get a minimum distance of print to print (e.g. for additional print marks). That means if additional PrintGo-signals appear within the holdoff distance, they will be ignored.

IdentNr CameraJob

-1 = means, that no camera will be used.

0 = means, that the job has no allocation to a configured job on the camera.

The Ids (1 – 2^31) will be generated on the camera host and are downloaded from the printer.
This parameter is only used on a Jet3 with the JETvisio option.

CameraJob Name

The name will be generated on the camera host and downloaded from the printer.

This parameter is only used on a Jet3 with the JETvisio option.

Maximum products between printer and camera

Control value (Trigger control): Maximum number of products, which are allowed between print head and the camera.

This parameter is only used on a Jet3 with the JETvisio option.

Product offset between printer and camera

Number of products as a fixed value, which are between the current printed product and the camera.

This parameter is only used on a Jet3 with the JETvisio option.

Cameratrigger-delay

The trigger signal for the connected camera will be delayed with this value.

The unit is µm.

This parameter is only used on a Jet3 with the JETvisio option.

Print stop interrupts print-out immediately

Can have the value 0 or 1:

- 0: The print stop will be done after the end of the text. The result is that the text will not be truncated.
- 1: The print stop will be done immediately

Indexcounter of previous camera job data

If no camera is used, the value has to be 0.

The index is always counted by updating a camera job. This is information for the JETvisio program on the PC. The Index will be compared with the currently loaded job on the JETvisio program. If it is higher, the job will be also updated on the PC.

This parameter is only used on a Jet3 with the JETvisio option.

Plotmode

In the Plotmode the printer always prints only the first stroke (Stroke 1).

The Plotmode will be stopped with a print stop or a change of the job.

Attention: In the Plotmode the printer is not able to make a phasing.

Mirrored

If set to 1 the strokes of this job are output in backward order.

PG Length

Length of the PrintGo Signal (= product) in µm. This is used for checking of the length of the product.

When this is 0, the checking is switched off.

When the length of the product is bigger or smaller as this parameter (look at PG tolerance), an error will be caused.

Only available on the Jet3up

PG Tolerance

Tolerable difference of the product length.

Only available on the Jet3up

CNT parameter list (Counter parameter)

Syntax: **CNT [Parameter list]**

Every counter which is declared refers to the last defined object. The counter is placed at the position where you can find the object {c} in the text.

The parameter list contains the following parameters in this order:

		Values margin
1	Number of digits	1 - 10
2	Start value	0 – 9.999.999.999
3	Initial value	0 – 9.999.999.999
4	End value	0 – 9.999.999.999
5	Increment	-100 ... +100
6	Repetitions	0 – 1000000
7	Leading zeros	0 1
8	Counting event	0 – 2
9	Counter basis	10 (currently only 10 permitted)
10	Reset	0 – 2
11	LoopMode	0 1 2
12	Repetitor	0 – 100
13	Don't print	0 1
14	Global counter	0 1
15	CounterID	0 – 128

Table 8: Declaration of counter

Maximum number of counters:

- Jet3, Jet3up: 32
- Jet2neo: 3

Start value:

This counter uses this value after he reached the end value.

Initialization value:

This value is used after a job is loaded or a counter reset.

End value:

When the counter reached this value, he begins with the start value.

Increment:

This value will be added to the counter value when the count event happened.

Repetitions:

Repetition of the current counter value.

With a repetition of 3 the result can be like this: 1 1 1 1 2 2 2 2 3 3 3 3 ...

Counting event:

After PrintGo	= 0
After PrintActive	= 1
With ext. counting input	= 2

After PrintGo:

It is counted after every PrintGo signal irrespectively of if a print has been generated or not (similar to MeterGo - funktion at LJ2).

This value is not allowed if the MeterGo function is active!

After PrintActive:

It is counted after every started print (standard).

With ext. Counting input

It is counted with every rising edge at the X4.2 input.

Reset

Manual	= 0
PC	= 1
External signal	= 2

Manually:

Counter is reset by the operator or by command from external interface.

PC

Counter is reset synchronously to the product counter, which means if it is reset to 0 by the operator, the object counter is reset, too.

External signal

Counter is reset to 0 after rising edge of X4.1.

LoopMode

Print Stop at the end	= 0
Loop	= 1
Up-/Down	= 2 (Not supported by GUI)

Repetitor

Current value of the repetitions already done.

Don't print

When the counter is used for a control function, it can be, that it should not be printed. Then this value is set to 1.

Global counter

- Jet3/Jet2neo:
The printer has one global counter. If this flag is set, this counter uses the global counter (and changes it). Otherwise the counter always starts with the initial value.

- Jet3up:
The counter given in “Counter ID” is not overwritten with the initial value.

Counter ID

Assignment of the counter to one of the 128 common used memory places.
If set to 0 the counter is managed separately (compatibility to old jet Versions).
Only available on the Jet3up.

COD Parameter list (Barcode parameter)

Syntax: COD [Parameter list]

The parameter list contains the following parameters in this order:

	Values margin	Unit	
1	Barcode type	1 - 10	
2	Bar width 1	1 – 10	Stroke
3	Bar width 2	1 – 10	Stroke
4	Bar width 3	1 – 10	Stroke
5	Bar width 4	1 – 10	Stroke
6	Gap width 1	1 – 10	Stroke
7	Gap width 2	1 – 10	Stroke
8	Gap width 3	1 – 10	Stroke
9	Gap width 4	1 – 10	Stroke
10	Character gap (ICG)	1 – 10	Stroke
11	Barcode height	1 – max dots	Ink dots
12	Font for clear figure	(Font name)	
13	Position of clear figure	0 – 4	
14	Calc Check digit	0 - 1	Not used
15	Invers	0 - 1	

Table 9: Declaration of barcode

Barcode type:

Code39	= 1
Code2/5	= 2
EAN8	= 3
EAN13	= 4
UPC A12	= 5
UPC E 8	= 6
128b	= 7
128c	= 8
Postnet	= 9
Datamatrix ECC200 square	= 10
EAN128	= 11
EAN/ECC200 Datamatrix square	= 12
Datamatrix ECC200 rectangular	= 13
EAN/ECC200 Datamatrix rectangular	= 14
USPS 4CB	= 15
QR Code	= 16
PPN Code square	= 17
PPN Code rectangular	= 18

Notes:

- At the ECC200 the dot- and gap size can be set to 1, 2 or 3. To do this, use the parameter Bar width 1.

- The types 11, 12 and 14 can contain the control character {f} = FNC1. This will be replaced in the code by the byte HexE8(Dez232).
- The types 17 and 18 can contain the control character {g} = Field Separator Gs. *It will be replaced in the code by the byte Dez2.* The header and the trailer will be added automatically by the printer.
- Not all printer models support all barcode types. Please have a look at the printer manual for a list of supported barcode types.

Barcode height

- Jet3, Jet3up: up to 32 dots
- Jet2neo: up to 24 dots

Position of clear figure

No	= 0
below	= 1
behind	= 2
in front	= 3
above	= 4

Invers:

The barcode will be printed invers and the clear figure not.

Invers OBJ	Invers COD	Meaning
0	0	Normal print
0	1	Clear figure normal, BC invers
1	0	Clear figure invers, BC invers
1	1	Clear figure invers, BC normal

RPLFIG Parameter list

Syntax: RPLFIG [Parameter list]

The figures of the object are replaced by another character. These replacements refer to the counter fields and the time fields hour, minute, date and calendar week.

The parameter list contains the following substitute characters in this order:

Values margin	Unit
Text field with the following character string	
Substitute character for 0	All available characters
Substitute character for 1.	ditto
Substitute character for 2	ditto
Substitute character for 3	ditto
Substitute character for 4	ditto
Substitute character for 5	ditto
Substitute character for 6	ditto
Substitute character for 7	ditto
Substitute character for 8	ditto
Substitute character for 9	ditto
Substitute character for A	ditto
Substitute character for B	ditto
Substitute character for C	ditto
Substitute character for D	ditto
Substitute character for E	ditto
Substitute character for F	ditto

Table 10: Declaration of replacements

RPLDAY Parameter list

Syntax: **RPLDAY [Parameter list]**

The weekdays of the date object are replaced by any printing text.

The parameter list contains the substitute texts in this order:

Values margin	Unit
Substitute text for Monday	All available characters
Substitute text for Tuesday	All available characters
Substitute text for Wednesday	All available characters
Substitute text for Thursday	All available characters
Substitute text for Friday	All available characters
Substitute text for Saturday	All available characters
Substitute text for Sunday	All available characters

Table 11: Substitute texts for weekdays

RPLMON Parameter list

Syntax: **RPLMON [Parameter list]**

The months of a date object are replaced by any printing text.

The parameter list contains the substitute texts in this order:

Values margin	Unit
Substitute text for January	All available characters
Substitute text for February	All available characters
Substitute text for March	All available characters
Substitute text for April	All available characters
Substitute text for May	All available characters
Substitute text for June	All available characters
Substitute text for July	All available characters
Substitute text for August	All available characters
Substitute text for September	All available characters
Substitute text for October	All available characters
Substitute text for November	All available characters
Substitute text for December	All available characters

Table 12: Substitute texts for months

RPLMDAY Parameter list

Syntax: **RPLMDAY [Parameter list]** (as of scriptversion V01.06.00.12)

The days (1...31) of a date object are replaced by any printing text.

The parameter list contains the substitute texts in this order:

Wertebereich	Einheit	
Substitute text for 01	All available characters	Text
Substitute text for 02	All available characters	Text
Substitute text for 03	All available characters	Text
Substitute text for 04	All available characters	Text
Substitute text for 05	All available characters	Text
.....
Substitute text for 31	All available characters	Text

Table 12.1: Substitute texts for days

Example script with replacements from months and days:

```
BEGINLJSCRIPT [(V01.06.00.12)]
JLPAR [90 0 0 3 60 0 0 10000 00:00 0 7000]
BEGINJOB []
JOBJPAR [ 0 0 0 250 0 0 0 1 1 0 -1 () 1 0 55000 1 0 ]
OBJ [1 2 24 0 (ISO1_7X5) ({t}) 1 0 0 0 0 1 0 0 0 0 0 0 () 0 0 0 ]
TIME [ (dd.mm.yyyy) 0 1 0 ]
RPLDAY [ (MON) (TUE) (WED) (THU) (FRI) (SAT) (SUN) ]
RPLMON [ (01) (02) (03) (04) (05) (06) (07) (08) (09) (10) (11) (12) ]
RPLYEAR [ 2013 (2013) (2014) (2015) (2016) (2017) (2018) (2019) (2020) (2021) (2022) (2023) (2024) (2025) (2026)
(2027) (2028) (2029) (2030) (2031) ]
OBJ [2 2 13 0 (ISO1_7X5) ({t}) 1 0 0 0 0 1 0 0 0 0 0 0 () 0 0 0 ]
TIME [ (dd.mm.yyyy) 0 1 0 ]
RPLDAY [ (MON) (TUE) (WED) (THU) (FRI) (SAT) (SUN) ]
RPLMON [ (01) (02) (03) (replace_month) (05) (06) (07) (08) (09) (10) (11) (12) ]
RPLYEAR [ 2013 (2013) (2014) (2015) (2016) (2017) (2018) (2019) (2020) (2021) (2022) (2023) (2024) (2025) (2026)
(2027) (2028) (2029) (2030) (2031) ]
RPLMDAY [ (01) (02) (03) (04) (05) (06) (07) (08) (09) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21)
(22) (23) (24) (25) (26) (27) (28) (29) (30) (31) ]
OBJ [3 2 2 0 (ISO1_7X5) ({t}) 1 0 0 0 0 1 0 0 0 0 0 0 () 0 0 0 ]
TIME [ (dd.mm.yyyy) 0 1 0 ]
RPLDAY [ (MON) (TUE) (WED) (THU) (FRI) (SAT) (SUN) ]
RPLMON [ (01) (02) (03) (04) (05) (06) (07) (08) (09) (10) (11) (12) ]
RPLYEAR [ 2013 (2013) (2014) (2015) (2016) (2017) (2018) (2019) (2020) (2021) (2022) (2023) (2024) (2025) (2026)
(2027) (2028) (2029) (2030) (2031) ]
RPLMDAY [ (01) (02) (03) (04) (05) (06) (07) (08) (09) (replace_day) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21)
(22) (23) (24) (25) (26) (27) (28) (29) (30) (31) ]
ENDJOB []
ENDLJSCRIPT []
```

Result of print:

```
10.04.2014
10.replace_month.2014
replace_day.04.2014
```

RPL YEAR Parameter list

Syntax: **RPLYEAR [Parameter list]**

The years of a date object are replaced by any printing text.

The parameter list contains the substitute texts in this order:

Values margin	Unit	
Basis year	(e.g.) 2000	Year
Substitute text for basis year	All available characters	Text
Substitute text for basis year+1	All available characters	Text
Substitute text for basis year+2	All available characters	Text
Substitute text for basis year+3	All available characters	Text
...
Substitue text for basis year+18	All available characters	Text

Table 13: Substitute texts for years

SHIFTS Parameterliste

Syntax: **SHIFTS [Parameterliste]**

In the previously defined object every {s} in the text string is replaced by a shift code.

The starting time and the printing text are defined here for every shift. The parameter list contains the following parameters in this order:

Name of the Parameter	Content	Unit
Number of shifts	1 ... maximum shift times	
Starting time shift 1	00:00 - 23:59	hh:mm
Starting time shift 2	00:00 - 23:59	hh:mm
Starting time shift 3	00:00 - 23:59	hh:mm
...	00:00 - 23:59	hh:mm
Starting time shift n	00:00 - 23:59	hh:mm
Printing text for shift 1	(Text)	
Printing text for shift 2	(Text)	
Printing text for shift 3	(Text)	
...	(Text)	
Printing text for shift n	(Text)	

Table 14: Declaration of shifts

MAXIMUM NUMBER OF SHIFT TIMES:

- **JET3, JET3UP: 24**
- **JET2NEO: 4, OPTIONALY 24**

EXTTEXT Parameter list

Syntax: EXTTXT[Parameter list]

The previously defined object is defined as ExternText. The external text is then inserted at the place where {e} is part of the text string.

The parameter list contains the following parameters in this order:

Values margin	Unit
1 Length	1-200
2 Placeholder	(Text characters)
3 Field number 0=ExtText, 1...x Field number Mailmode	
4 In ExtText: Character offset In Mail-Mode: Not used	0-maximum offset
5 Check double prints In Mail-Mode: Not used	0, 1
6 Start symbol for variable extern text 0 = function disabled 1 – 255 decimal value for ASCII font	0 - 255
7 End symbol for variable extern text 0 = function disabled 1 – 255 decimal value for ASCII font	0 - 255
8 Extern text (variable): Text mask out between <start> and <end> symbol	0, 1

Table 15: Declaration of extern text parameter list

Field number

By the field number you can decide between an Extern-Text-Variable and a „Mail“-Variable.
0=ExtText-Variable, 1...x=Mail-Variable, the value corresponds to the field number.

Character offset

The number of placeholders defines the number of external characters for this object.
The character offset defines from which character of the external text this object will be filled with characters.

The printer calculates independently the required characters for the currently loaded job. After he received completely the last character all will be inserted automatically into to print text.

To calculate this there will be built the sum for each object from the character offset and the placeholders. The largest sum is the value for required characters of the loaded job.

The maximum character offset is

- For Jet3, Jet3Up: 255
- For Jet2neo: 100

Check double prints

In the Extern Text Mode the function “Check double prints” can be used. When after a print go signal there is not one or more received external text, the print will be stopped and an error message is generated.

Start/stop character

From Scriptversion V01.06.00.15

Parameter 6 → Start symbol for extern text and Parameter 7 → End symbol for extern text.

Value = "0" for both parameters means function is disabled. The same like "fixed extern text" (Standard).

Are the values between 1 – 255 and important, parameter 6 have to be different as parameter 7, the function "Extern text (variable) is active. This means that only received characters between start and end symbol have printed. The values are conform with the decimal code from ASCII Font.

Mask out extern text between <start> and <end> symbol

From Scriptversion V01.06.00.19

Parameter 8 = 0 → Show at explanation „Start/stop character“

Parameter 8 = 1 → If a defined <start> character recognized all following characters are ignored until the defined <stop> character has been detected.

TIME Parameter list

Syntax: TIME [Parameter list]

The time and date functions which are referenced in the text string of the object are formatted by this declaration. The date is then fitted at the place where {t} is inserted in the text string.

The parameter list contains the following parameters in this order:

Values margin	Unit
1 Format	(Text)
2 Expiry offset days	Days (0 – 30000)
3 Leading zeros	0 1
4 Expiry offset months (exact days)	Months (0 – 1000)
5 Special replacements for hours and minutes	0 1
6 Expiry offset months (exact months)	

Table 16: Declaration of time-variables

Layout Format

d	Day	X
m	Month	
y	Year	4 digits
Y	Year	X
H	Hour	X
M	Minute	X
S	Second	X
w	Weekday	
j	Julian date	X
c	Calender week	X
f	F2897	

If this variable is listed several times the complete passage will be replaced by the substitution of the value.

For the variables which are indicated with „X“ the inserted value is always displayed double-digit (if applicable with leading „0“), if the variable is set twice.

Maxmimum allowed number of time objects:

- Jet3, Jet3up: 32
- Jet2neo: 4, optionally 12

Starting from Scriptversion V1.6.0.2 the leading zeros will be set by parameter 3.

0 = without leading zeros

1 = with leading zeros

For the other variables the length is defined by the replacements.

F2897:

The julian date and the 2 digits year are concatenated and from this up to 5 digits decimal value will be calculated a 3 digits value in the base 62 (with left-hand zeros0).

Starting from Scriptversion V1.6.0.9

it is possible to choose the expiry offset between days or months.

0 = disabled (no offset)

1 – maximum value = enabled

If parameter 2 (expiry offset days) > 0, it is important to set parameter 4 (expiry offset month) to zero.

Otherwise, if parameter 4 (expiry offset months) > 0, it is important to set parameter 2 (expiry offset days) to zero.

Starting from Scriptversion V01.06.00.13

With parameter 5 it is possible to choose special replacements for hours and minutes.

0 = disabled (no special replacements)

1 = hours and minutes will be replaced like following table:

hours	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z

Minutes	0 - 9	10 - 19	20 – 29	30 - 39	40 - 49	50 - 59
	a	b	c	d	e	f

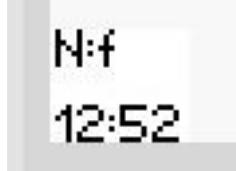
Example script with special replacements:

```
BEGINLJSCRIPT [(V01.06.00.14)]
JLPAR [90 1 0 3 30 0 0 50000 00:00 0 7000]
BEGINJOB [ 0 () ]
JOBPAR [ 0 0 0 300 0 0 0 1 1 0 -1 () 1 0 55000 1 0 ]
OBJ [1 1 0 0 (ISO1_7X5) ({t}) 1 0 0 0 0 1 0 0 0 0 0 0 () () 0 0 () ]
TIME [ (HH:MM) 0 1 0 0 ]  

RPLDAY [ (MON) (TUE) (WED) (THU) (FRI) (SAT) (SUN) ]
RPLMON [ (01) (02) (03) (04) (05) (06) (07) (08) (09) (10) (11) (12) ]
RPLYEAR [ 2014 (2014) (2015) (2016) (2017) (2018) (2019) (2020) (2021) (2022) (2023) (2024) (2025) (2026) (2027)
(2028) (2029) (2030) (2031) (2032) ]
OBJ [2 1 14 0 (ISO1_7X5) ({t}) 1 0 0 0 0 1 0 0 0 0 0 0 () () 0 0 () ]
TIME [ (HH:MM) 0 1 0 1 ]  

RPLDAY [ (MON) (TUE) (WED) (THU) (FRI) (SAT) (SUN) ]
RPLMON [ (01) (02) (03) (04) (05) (06) (07) (08) (09) (10) (11) (12) ]
RPLYEAR [ 2014 (2014) (2015) (2016) (2017) (2018) (2019) (2020) (2021) (2022) (2023) (2024) (2025) (2026) (2027)
(2028) (2029) (2030) (2031) (2032) ]
ENDJOB []
ENDLJSCRIPT []
```

Result of print:



Ab Version V01.06.00.18

Parameter 6 (Expiry offset months (exact months)) was added.

The existing parameter 4 (Expiry offset months (exact days)) hasn't changed and has is still the same calculation.

Examples:

Assume the current date is 08/31/2015.

1. Set expiry offset (exact months) to three months:

TIME [(mm/dd/yyyy) 0 1 0 0 3] Result: **11/30/2015**

2. Set expiry offset (exact days) to three months:

TIME [(mm/dd/yyyy) 0 1 3 0 0] Result: **12/01/2015**

3. Set expiry offset to 90 days:

TIME [(mm/dd/yyyy) 90 1 0 0 0] Result: **11/29/2015**

There may only be one offset set. All others have to be zero!

If you only want to print the current date, leave all values at zero.

OBJ Parameter list (Object parameter)

Syntax: **OBJ [Parameter list]**

An object is the smallest unit in the description of a print.

The parameter list contains the following parameters in this order:

Values margin		Unit	
1	ID-number	1 – max objects	
2	Position x	0 - 19999	Strokes
3	Position y	0 – max dots-1	Ink dots
4	LType	0..X	Language type
5	Font	(Font name)	
6	Printing text	(Text)	ASCII / Unicode, determination by Font
optionally:			
7	Character gap	0 – 7	Strokes
8	Reserve	0	Leave it 0
9	Reserve	0	Leave it 0
10	Rotation	0 90 180 270	Degree, anticlockwise
11	Mirror-inverted	0 1	
12	Proportional	0 1	
13	Bold text	0 - 7	
14	Contrast print	0 - 7	
15	Inverse	0 1	
16	Alternating	0 1	
17	Camera field	0 –2	Only two camerafields per job, otherwise zero
18	Camera teach mode	0 –255	Only in text- and extern text objects, otherwise zero
19	Camera teach text	(Text)	Only in text- and extern text objects, otherwise empty string
20	Keyboardname	(Text)	Language of your Keyboard
21	Counter-dependent	0 – max counters	Counter ID-No.
22	Prompt-Field max. sign	max. Length of each object	Prompt-Field Max character from the edited field
23	Prompt-Field name	(Text) max 40 characters	Users text for each Prompt-Field

Table 17: Declaration of objects

ID-number:

The identification-numbers can be assigned in any order.

For double numbers only the last one is considered.

The maximum number of objects is:

- Jet3, Jet3up: 32
- Jet2neo: 24

Position:

The position of an object refers to the position of the job which calls this object. If the object is linked, the position x refers to the end of the previous object.

The maximum number of dots (the height of the print) is:

- Jet3, Jet3up: 32
- Jet2neo: 24

Ltype:

For language specific handling of texts

0 = Standard

1 = Farsi

2 = Arabic

3 = Thai

The actually supported modes depend on the installed fonts and input method editors.

Fonts:

Every font is only identified by its name. Unicode fonts have the sign ~ before the font name.

The printer has a number of fixed available fonts.

Fonts can be downloaded or also deleted.

All fonts are Bitmap Fonts.

If the character string (\$CODE) is entered for the font, the object is created as barcode object which has to be defined by a further element COD [...].

If the character string (\$GRAFIC) is entered, the object is created as graphic object and the graphic in the print text has to be defined as described below.

Printing text for the function graphic

The printing text has 3 parameters.

(Graphic height Graphic width Graphic) Separation character is a blank

Values margin	Unit	
Graphic height	1 – max dots	Ink dots
Graphic width	1...20000	Ink dots (Strokes)
Graphic	0...9 A...F	Bit coded as hex number in ASCII

Table 18: Printing text for the function graphic

Layout of the bit coded graphic:

One bit is used per pixel so that 8 dots can be saved in one byte.

Up to 4 Hex-Bytes or 8 ASCII-Bytes are needed for one stroke. The actual amount of bytes per stroke depends on the graphic height. If the graphic is e.g. 17 dots high, 3 Hex-Bytes are used per stroke.

Graphic:

Byte 1 Stroke 1

Byte 2

...

Byte n

Byte n+1 Stroke 2

Byte n+2

...

Byte 2*n

Byte 2*n+1 Stroke 3

Byte 2*n+2

...

n = Amount of bytes per stroke

Pixel Y.1 reserves Bit 0 of the first Hexbyte.

Pixel Y.2 reserves Bit 1 of the first Hexbyte.

...

Pixel Y.8 reserves Bit 7 of the first Hexbyte.

Pixel Y.9 reserves Bit 0 of the second Hexbyte.

...

As the graphic is transferred in ASCII-characters, two ASCII-Bytes are used for one Hex-Byte.

Example for graphic:

(12 4 FF0F01080108FF0F)

This graphic is 12 dots high, that means n = 2

X.1 (Stroke 1): All points Y.1..12 are set

X.2 (Stroke 2): Point Y.1 and point Y.12 are set

X.3 (Stroke 3): Point Y.1 and point Y.12 are set

X.4 (Stroke 4): All points Y.1..12 are set

This graphic shows a rectangle.

Print text

The text which is shown in the parentheses is printed. The parentheses will be not printed.

Character gap

Shows the distance between the several characters. Default value is 1.

Rotation, Mirrored

Every object can be rotated/mirrored.

Mirrored is mirror at the Y-axis.

Proportional:

Every font can be printed proportional or not proportional. In principle the fonts are applied proportional.

For non-proportional print the RIP (printer) inserts empty strokes up to the maximum character width. They will be inserted that the character is placed centred.

User-specific graphics are stored in one or more special fonts.

Bold text:

Every stroke is printed as often as given by the indicated number, but every stroke is printed separately. The character width increases accordingly. The bold text has no influence on the maximum printing speed.

Contrast print:

Every stroke is printed as often as given by the indicated number, but the additional strokes are printed on top of the previous stroke. The character width does not increase, but the maximum printing speed reduces.

This parameter will be taken over automatically to all objects, which are located in this X-area. The highest contrast print is carried out.

Inverse:

All pixels are inverted.

An ink dot will become an ink gap.

An ink gap will become an ink dot.

If required an additional frame is drawn around the object (e.g. for texts, special barcode types)

Alternate:

After every PrintGo the print it is turned by 180°.

Camera field:

- 0: this objects is not checked by JETvisio.
- 1, 2: this object is checked by JETvisio. The number is the window number inside the JETvisio system.

This parameter is only checked on the Jet3 with the JETvisio option and should be 0 otherwise.

Camera teach mode:

This parameter is only used internally of the Jet3 and should be always 0.

Camera teach text:

This parameter is only used internally in the Jet3 and should always be empty.

Counter dependent print:

If this value is 0, the object is always printed.

Otherwise this number is interpreted as a counters ID and the object is only print if the counter reaches its end value.

Prompt-Field:

The prompt-field function can only use in following objects (with limitations):

- Text-Object (text content is editable)
- Barcode-Object (text content is editable)
- Counter-Object (counter end value is editable)
- Date-Object (only editable, if declared as expiration date)

Construct:

Parameter 22 describes the maximum length of the editable content

Parameter 23 describes the name in plain writing of the prompt field.

PGJOB Parameter list (Batchjob)

Syntax: PGJOB [Parameter list]

Every PrintGo is assigned to a job.

The parameter list contains the following parameters in this order:

Values margin	Unit	
ID-No.	1 - 99	
Number Repeats	0 – 99.999.999	0 = print only once
Job-ID-No.	Available jobs	

Table 19: PGJOB parameter list

If you are working with PGJOB, the call of EXTSEL and JOBORG (see below) is not permitted. Batch jobs are not available in the Jet2neo.

ID-number:

These numbers are allocated in ascending order to process them consecutively. The number has to start with 1 and has to be continuously without any gap.

Number of repeats:

Number of repetitions of the jobs which are indicated with the job-ID-number. For 0 it is printed only once (no repetitions).

Job-ID-No:

ID No of the assigned and available jobs (see ID-number for BEGINJOB).

EXTSEL Parameter list (Extern Job Select)

Syntax: EXTSEL [Parameter list]

Via digital inputs you can select a job which is printed with the next Print Go.

If you work with EXTSEL the call with PGJBO and JOBORG is not permitted.

The parameter list contains the following parameters in this order:

Values margin	
External applied number	0 – max jobs
Job-ID-No	Available Job-No.

Table 20: Declaration of the external inputs for job selection

External applied number:

With the digital input signals you can apply the numbers 0 up to X. For the maximum number of jobs refer to the command BEGINJOB.

Every number which can occur should be assigned to a job with this command. The job which is assigned to the external number X is printed. If numbers are applied for which no job is declared the previous Job will be printed again.

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Job-ID-No:

ID No of the assigned and available jobs (see ID-number for BEGINJOB)

JOBORG Parameter list (Job organizer)

Syntax: **JOBORG [Parameter list]**

After a PrintGo the listed jobs are printed in the given distances.
The parameter list contains the following parameters in this order:

Values margin	Unit	
ID-No	1 - 99	
Distance	0 - 999999	µm, 0=directly after previous job
Job-ID-No.	Available jobs	

Table 21: Allocation of job-organizer

- If you work with JOBORG the call with EXTSEL and PGJOB (see above) is not permitted.
- This type of job list is not available in the Jet2neo!

ID-number:

These numbers are allocated in ascending order to process them consecutively. The number has to start with 1 and has to be continuously without any gap.

Distance:

The job is printed in the given distance after the PrintGo. If 0 is given, the job is printed immediately after the previous job.

Job-ID-No:

ID No of the assigned and available jobs (see DI-number for BEGINJOB)

If the job list has to be repeated without extern PG-Signal, so the distance between jobstart1 and jobstart2 and so on must be set in the PG-Delay of the first job. Even the count of repeats has to be set in the PG-repetition of the first job.

EXAMPLE for a Script:

```
BEGINLJSCRIPT [(V1.1.0.0)]
JLPAR [85 0 0 0 2 0 0 25000 00:00 0]
BEGINJOB [ 0 () ]
JOBPAR [ 20000 0 0 350 0 0 0 1 1 0 ]
OBJ [0 1 0 0 (ISO7_24x18) (Text) 1 0 0 0 0 1 0 0 0 0]
OBJ [0 62 0 0 (ISO7_12X8) ({c}) 1 0 0 0 0 0 0 0 0 0]
CNT [ 4 1000 0 8000 1 1 1 1 10 0 1]
OBJ [0 99 0 0 (ISO7_7X5) ({t}) 1 0 0 0 0 0 0 0 0 0]
TIME [ (dd.mm.yyyy) 0]
RPLDAY [ (MON) (TUE) (WED) (THU) (FRI) (SAT) (SUN) ]
RPLMON [ (JAN) (FEB) (MAR) (APR) (MAY) (JUN) (JUL) (AUG) (SEP) (OCT)
(NOV) (DEC) ]
ENDJOB []
ENDLJSCRIPT []
```

Resulting imprint:

Text000020.MAY.2008

Object 1: Fix text

Object 2:
Counter

Object 3: Date
(Day:Month:Year)

History

V1.01, Page 20

Ltype bei Obj Parameterliste hinzugefügt

V1.02, Page 17

Replacements for years (RPLYEAR) increased to 19

V1.03, Page 18

Extern Text: Parameter character offset added

V1.04, Page 9+13+19, Oct.19.2009

JOBPAR. 11: Cameratrigger-delay added

OBJ. 17: Camera field added

V1.05, Page 10 11.03.2010 from V60.0.01.1

Some PrintModes added

V1.06, Page 9+20 22.03.2010 from V60.0.01.2

Printparameter 16 added

Printparameter 17 added

Obj. parameter ID18 added

Obj. parameter ID19 added

V1.6.0.1, Page 18 April, 22.2010 from V60.0.1.2

Shifttimes increased to 24 and variabel designed.

V1.6.0.2, Page 9 + 11 + 19 03.05.2010 from V60.0.1.3

Obj. parameter ID3 added

Printparamter 16 was wrong

Jobparameter 11 improved

V1.6.0.3, Page 18

Extern Text: Parameter „Check double prints“ added.

V1.6.0.4, Page 10: June, 20.2011 from V60.0.01.08

New printmode: 16 Dot Speed

V1.6.0.5, Page 7: 19.10.2011 from V60.0.1.10

New: Speed dependant output

V1.6.0.6, Page 20: Feb., 15.2012 from V60.0.1.12

F2897 added

V1.6.0.7, Page 15: May 07.2012 from V60.0.1.13

USPS barcode added

QR code added

V1.6.0.8, Page 15: June 27.2012 from V60.0.1.14

PPN Code ECC200 square and rectangular added

V1.6.0.9 Oct. 17.2012 from V60.0.1.15

Page 20: Expiry offset in months added

Page 19: Value range from character offset at ExternText increased from 100 to 255

V1.6.0.10 Jan.01.2013 from V60.0.1.17 was shifted to the V60.0.1.18

JLPAR 5 and 11: unit speed changed from m/min to dm/min.

V1.6.0.11 13.02.2013 ab V60.0.1.17 was shifted to the V60.0.1.18

Extension for PromptField

V1.06.0.12 10.04.2013

Bugfix of Description on page 3 and repeats of CNT.

Date/Time object: Replacements for days 1,2,3,4,...,31

V1.06.0.13 18.04.2013 from V60.0.1.19

Description Extension of up-/down mode in LOOP MODUS on counter objects

JOBPART: Text "Print stop reacts after TextEnd" replaced with: "Print stop interrupts print-out immediately"

Date/time object: It is possible to choose special replacements for hours and minutes.

V01.06.00.14 13.03.2014 from V60.0.24.00

CNT Page 12: new Parameter Global counter

V01.06.00.15 22.04.2014 from V60.0.25.00

JOBPART: Par. 7 will be used. 17.04.2014 Ab V60.0.25.00

JOBPART Par. 18 is new

Extern Text Par 6 means start symbol. As decimal value for the symbol

Extern Text Par 7 means end symbol. As decimal value for the symbol

V01.06.00.16

JLPART Par. 12 is new (for Jet3up)

JLPART Par. 13 is new (for Jet3up)

JOBPART Par. 19 is new (for Jet3up)

CNT Par. 15 is new (for Jet3up)

Meaning of „Global counter“ changed for Jet3up.

V01.06.00.17

JLPART Par. 14 is new (for Jet3up)

JOBPART Par. 20+21 is new (for Jet3up)

Meaning JLPART Par.4 Expanded (for Jet3up)

V01.06.00.18

Time: added parameter 6 (for Jet3up)

V01.06.00.19

Repetitions in CNT changed from 100 to 1000000

Extern text (variable) Par 8 is new (for JET3up)

V01.06.00.20

EXTXT: Wrong Length 100. The Jobeditor allows 200.