Application Note

FESTO

YJKP - Object directory

Object directory used to control the system or get the status of the system

YJKP

100262

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1 Components/Software used

Type/Name	Version Software/Firmware	Date of manufacture
Servo press kit YJKP	general	--
Application software YJKP (GSAY-A4-F0-Z4-1.1.1)	V1.3.5	--
Firmware controller (CECC-X)	V3.4.6	--
Firmware motor controller (CMMP-AS)	V4.0.1501.2.4	--

Table 1.1: 1 Components/Software used

1.1 Application description

This application note contains a list of all objects needed to control the system or get the status of the system.

2 Object directory

The object directory is a list of objects, which describes communication and application parameters. The object directory describes the whole functionality of the system. A CSV-File which is stored internally represents the object directory. This file contains all objects needed to control the system or get the status of the system.

2.1 Object description

A object is a data structure which includes all properties of a parameter. Afterwards all structure elements will be described.

2.1.1 Identifier

Is a description of an object as string.

2.1.2 Index

The index in connection with the sub index is a unique identification number for a object.

2.1.3 Sub Index

For standard objects the sub index is 0. Objects with a structure and more elements are separated through the sub index, but are part of the structure through the same index.

2.1.4 Value

Actual value of the object.

2.1.5 Data type

The data type describes how the byte order for the object must be interpreted.

Index	Type	Bytes	Description	Range of values
0x00	--	--	Unbekannter Datentyp	--
0x01	BOOL	1	8 bit boolean	0 (FALSE) … 1 (TRUE)
0x02	SINT	1	8 bit signed short integer	-128 …127
0x03	USINT	1	8 bit unsigned short integer	0 … 255
0x04	INT	2	16 bit signed integer	-32768 … 32767
0x05	UINT	2	16 bit unsigned integer	0 … 65535
0x06	DINT	4	32 bit signed long integer	-2147483648 … 2147483647
0x07	UDINT	4	32 bit unsigned long integer	0 … 4294967295
0x08	BYTE	1	8 bit unsigned short integer	0 … 255
0x09	WORD	2	16 bit unsigned integer	0 … 65535
0x0A	DWORD	4	32 bit unsigned long integer	0 … 4294967295
0x0B	REAL	4	32 bit float	1.400e-45 … 3.403e+38

Table 2-1: Data types

2.1.6 Data size

Size of the object in order to the data type.

2.1.7 Access type

Defines how the object can be accessed:

- RO: read only
- WO: write only
- RW: readable and writeable

2.2 Object directory

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Control word (CW)	0x2000	0x00	--	DWORD	4	RW	--
Status word (SW)	0x2001	0x00	--	DWORD	4	RO	--
Communication mode	0x2002	0x00	--	BYTE	1	RW	--
Offset force sensor	0x2003	0x00	--	DINT	4	RW	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Motion mode	0x2004	0x00	--	BYTE	1	RW	--
Motion velocity	0x2005	0x00	--	DINT	4	RW	Unit [mm/s] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Motion position/distance	0x2006	0x00	--	DINT	4	RW	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Selected program number	0x2007	0x00	--	UINT	2	RW	--
Digital inputs	0x2008	0x00	--	BYTE	1	RW	--
Digital outputs	0x2009	0x00	--	BYTE	1	RW	--
Actual position	0x200A	0x00	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Actual force	0x200B	0x00	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Actual velocity	0x200C	0x00	--	DINT	4	RO	Unit [mm/s] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Maximum position	0x200D	0x00	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Maximum force	0x200E	0x00	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
NOK reason	0x200F	0x00	--	WORD	2	RO	--
Part number	0x2010	0x00	--	UDINT	4	RO	--
Part number OK	0x2011	0x00	--	UDINT	4	RO	--
Part number NOK	0x2012	0x00	--	UDINT	4	RO	--
Loaded program number	0x2013	0x00	--	UINT	2	RO	--
Statistic	0x2100	0x00	49	UDINT	4	RO	--
Part number	0x2100	0x01	--	UDINT	4	RO	--
Program name 1	0x2100	0x02	--	BYTE	1	RO	--
Program name 2	0x2100	0x03	--	BYTE	1	RO	--
Program name 3	0x2100	0x04	--	BYTE	1	RO	--
Program name 4	0x2100	0x05	--	BYTE	1	RO	--
Program name 5	0x2100	0x06	--	BYTE	1	RO	--
Program name 6	0x2100	0x07	--	BYTE	1	RO	--

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Program name 7	0x2100	0x08	--	BYTE	1	RO	--
Program name 8	0x2100	0x09	--	BYTE	1	RO	--
Program name 9	0x2100	0x0A	--	BYTE	1	RO	--
Program name 10	0x2100	0x0B	--	BYTE	1	RO	--
Program name 11	0x2100	0x0C	--	BYTE	1	RO	--
Program name 12	0x2100	0x0D	--	BYTE	1	RO	--
Program name 13	0x2100	0x0E	--	BYTE	1	RO	--
Program name 14	0x2100	0x0F	--	BYTE	1	RO	--
Program name 15	0x2100	0x10	--	BYTE	1	RO	--
Program name 16	0x2100	0x11	--	BYTE	1	RO	--
Program name 17	0x2100	0x12	--	BYTE	1	RO	--
Program name 18	0x2100	0x13	--	BYTE	1	RO	--
Program name 19	0x2100	0x14	--	BYTE	1	RO	--
Program name 20	0x2100	0x15	--	BYTE	1	RO	--
Program ID	0x2100	0x16	--	UINT	2	RO	--
Timestamp	0x2100	0x17	--	DWORD	4	RO	--
Result	0x2100	0x18	--	BOOL	1	RO	--
Maximum position	0x2100	0x19	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 ǀ 0.01 = 100)
Maximum force	0x2100	0x1A	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 ǀ 0.01 = 100)
NOK source	0x2100	0x1B	--	WORD	2	RO	--
Cycle time	0x2100	0x1C	--	UDINT	4	RO	--
Mac Address	0x2101	0x00	24	UDINT	4	RO	--
Mac Address Byte 1	0x2101	0x01	--	BYTE	1	RO	--
...							
Mac Address Byte 20	0x2101	0x14	--	BYTE	1	RO	--
Serial number	0x2102	0x00	24	UDINT	4	RW	--
Serial number Byte 1	0x2102	0x01	--	BYTE	1	RW	--
...							
Serial number Byte 20	0x2102	0x14	--	BYTE	1	RW	--
Message	0x2200	0x00	31	UDINT	4	RO	--
Message ack	0x2200	0x01	--	BOOL	1	RO	--
Message id	0x2200	0x02	--	DWORD	4	RO	--
Message table	0x2200	0x03	--	WORD	2	RO	--
Message ident additional 01	0x2200	0x04	--	DWORD	4	RO	--
Message ident additional 02	0x2200	0x05	--	DWORD	4	RO	--
Message source device	0x2200	0x06	--	UINT	2	RO	--
Message source system	0x2200	0x07	--	UINT	2	RO	--

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Message reaction	0x2200	0x08	--	UINT	2	RO	--
Message category	0x2200	0x09	--	UINT	2	RO	--
Message timestamp	0x2200	0x0A	--	DWORD	4	RO	--
Variable 1 - 10	0x2300	0x00	44	UDINT	4	RW	--
Variable 1	0x2300	0x01	--	DINT	4	RW	Value (2 decimal places) (multiplied by 100 | 0.01 = 100)
...							
Variable 10	0x2300	0x0A	--	DINT	4	RW	Value (2 decimal places) (multiplied by 100 | 0.01 = 100)
...							
Variable 91 - 100	0x2309	0x00	44	UDINT	4	RW	--
Variable 91	0x2309	0x01	--	DINT	4	RW	Value (2 decimal places) (multiplied by 100 | 0.01 = 100)
...							
Variable 100	0x2309	0x0A	--	DINT	4	RW	Value (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curves no.	0x3000	0x00	--	UINT	2	RO	--
Curve 1	0x3100	0x00	14	UDINT	4	RO	--
Curve 1 maximum position	0x3100	0x01	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 maximum force	0x3100	0x02	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 NOK source	0x3100	0x03	--	WORD	2	RO	--
Curve 1 window 1	0x3111	0x00	54	UDINT	4	RO	--
Curve 1 window 1 intersection	0x3111	0x01	--	WORD	2	RO	--
Curve 1 window 1 up side position	0x3111	0x02	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 up side force	0x3111	0x03	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 down side position	0x3111	0x04	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 down side force	0x3111	0x05	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 left side position	0x3111	0x06	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Curve 1 window 1 left side force	0x3111	0x07	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 right side position	0x3111	0x08	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 right side force	0x3111	0x09	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 minimum position	0x3111	0x0A	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 maximum position	0x3111	0x0B	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 minimum force	0x3111	0x0C	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 1 maximum force	0x3111	0x0D	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
...							
Curve 1 window 5	0x3115	0x00	54	UDINT	4	RO	--
Curve 1 window 5 intersection	0x3115	0x01	--	WORD	2	RO	--
Curve 1 window 5 up side position	0x3115	0x02	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 up side force	0x3115	0x03	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 down side position	0x3115	0x04	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 down side force	0x3115	0x05	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 left side position	0x3115	0x06	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 left side force	0x3115	0x07	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 right side position	0x3115	0x08	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 right side force	0x3115	0x09	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 minimum position	0x3115	0x0A	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Curve 1 window 5 maximum position	0x3115	0x0B	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 minimum force	0x3115	0x0C	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 window 5 maximum force	0x3115	0x0D	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 threshold 1	0x3121	0x00	14	UDINT	4	RO	--
Curve 1 threshold 1 intersection	0x3121	0x01	--	WORD	2	RO	--
Curve 1 threshold 1 position	0x3121	0x02	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 threshold 1 force	0x3121	0x03	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
...							
Curve 1 threshold 5	0x3125	0x00	14	UDINT	4	RO	--
Curve 1 threshold 5 intersection	0x3125	0x01	--	WORD	2	RO	--
Curve 1 threshold 5 position	0x3125	0x02	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 threshold 5 force	0x3125	0x03	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 envelope 1	0x3131	0x00	22	UDINT	4	RO	--
Curve 1 envelope 1 intersection	0x3131	0x01	--	WORD	2	RO	--
Curve 1 envelope 1 up side position	0x3131	0x02	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 envelope 1 up side force	0x3131	0x03	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 envelope 1 down side position	0x3131	0x04	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 envelope 1 down side force	0x3131	0x05	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
...							
Curve 1 envelope 5	0x3135	0x00	22	UDINT	4	RO	--
Curve 1 envelope 5 intersection	0x3135	0x01	--	WORD	2	RO	--
Curve 1 envelope 5 up side position	0x3135	0x02	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 envelope 5 up side force	0x3135	0x03	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Curve 1 envelope 5 down side position	0x3135	0x04	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 1 envelope 5 down side force	0x3135	0x05	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Curve 2	0x3200	0x00	14	UDINT	4	RO	--
Curve 2 window 1	0x3211	0x00	54	UDINT	4	RO	--
			...				
Curve 2 window 5	0x3215	0x00	54	UDINT	4	RO	--
Curve 2 threshold 1	0x3221	0x00	14	UDINT	4	RO	--
			...				
Curve 2 threshold 5	0x3225	0x00	14	UDINT	4	RO	--
Curve 2 envelope 1	0x3231	0x00	22	UDINT	4	RO	--
			...				
Curve 2 envelope 5	0x3235	0x00	22	UDINT	4	RO	--
Curve 3	0x3300	0x00	14	UDINT	4	RO	--
Curve 3 window 1	0x3311	0x00	54	UDINT	4	RO	--
			...				
Curve 3 window 5	0x3315	0x00	54	UDINT	4	RO	--
Curve 3 threshold 1	0x3321	0x00	14	UDINT	4	RO	--
			...				
Curve 3 threshold 5	0x3325	0x00	14	UDINT	4	RO	--
Curve 3 envelope 1	0x3331	0x00	22	UDINT	4	RO	--
			...				
Curve 3 envelope 5	0x3335	0x00	22	UDINT	4	RO	--
Curve 4	0x3400	0x00	14	UDINT	4	RO	--
Curve 4 window 1	0x3411	0x00	54	UDINT	4	RO	--
			...				
Curve 4 window 5	0x3415	0x00	54	UDINT	4	RO	--
Curve 4 threshold 1	0x3421	0x00	14	UDINT	4	RO	--
			...				
Curve 4 threshold 5	0x3425	0x00	14	UDINT	4	RO	--
Curve 4 envelope 1	0x3431	0x00	22	UDINT	4	RO	--
			...				
Curve 4 envelope 5	0x3435	0x00	22	UDINT	4	RO	--
Curve 5	0x3500	0x00	14	UDINT	4	RO	--
Curve 5 window 1	0x3511	0x00	54	UDINT	4	RO	--
			...				
Curve 5 window 5	0x3515	0x00	54	UDINT	4	RO	--
Curve 5 threshold 1	0x3521	0x00	14	UDINT	4	RO	--

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
			...				
Curve 5 threshold 5	0x3525	0x00	14	UDINT	4	RO	--
Curve 5 envelope 1	0x3531	0x00	22	UDINT	4	RO	--
			...				
Curve 5 envelope 5	0x3535	0x00	22	UDINT	4	RO	--
Sequencer steps	0x4000	0x00	--	UINT	2	RO	--
Sequencer step 1	0x4001	0x00	60	UDINT	4	RO	--
Sequencer step 1 input 1	0x4001	0x01	--	DWORD	4	RO	--
Sequencer step 1 input 2	0x4001	0x02	--	DWORD	4	RO	--
Sequencer step 1 input 3	0x4001	0x03	--	DWORD	4	RO	--
Sequencer step 1 input 4	0x4001	0x04	--	DWORD	4	RO	--
Sequencer step 1 input 5	0x4001	0x05	--	DWORD	4	RO	--
Sequencer step 1 input 6	0x4001	0x06	--	DWORD	4	RO	--
Sequencer step 1 input 7	0x4001	0x07	--	DWORD	4	RO	--
Sequencer step 1 input 8	0x4001	0x08	--	DWORD	4	RO	--
Sequencer step 1 input 9	0x4001	0x09	--	DWORD	4	RO	--
Sequencer step 1 input 10	0x4001	0x0A	--	DWORD	4	RO	--
Sequencer step 1 input 11	0x4001	0x0B	--	DWORD	4	RO	--
Sequencer step 1 input 12	0x4001	0x0C	--	DWORD	4	RO	--
Sequencer step 1 input 13	0x4001	0x0D	--	DWORD	4	RO	--
Sequencer step 1 input 14	0x4001	0x0E	--	DWORD	4	RO	--
Sequencer step 100	0x4100	0x00	60	UDINT	4	RO	--
			...				
Recipes no.	0x5000	0x00	--	USINT	1	RO	--
Recipe 1 windowing active	0x5100	0x00	--	BOOL	1	RO	--
Recipe 1 window 1	0x5111	0x00	38	UDINT	4	RO	--
Recipe 1 window 1 active	0x5111	0x01	--	BOOL	1	RO	--
Recipe 1 window 1 mode config.	0x5111	0x02	--	BOOL	1	RO	--
Recipe 1 window 1 config. min. position	0x5111	0x03	--	BOOL	1	RO	--
Recipe 1 window 1 min. position value	0x5111	0x04	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 window 1 min. position variable	0x5111	0x05	--	UINT	2	RO	--
Recipe 1 window 1 config. max. position	0x5111	0x06	--	BOOL	1	RO	--
Recipe 1 window 1 max. position value	0x5111	0x07	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 window 1 max. position variable	0x5111	0x08	--	UINT	2	RO	--

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Recipe 1 window 1 config. min. force	0x5111	0x09	--	BOOL	1	RO	--
Recipe 1 window 1 min. force value	0x5111	0x0A	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 window 1 min. force variable	0x5111	0x0B	--	UINT	2	RO	--
Recipe 1 window 1 config. max. force	0x5111	0x0C	--	BOOL	1	RO	--
Recipe 1 window 1 max. force value	0x5111	0x0D	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 window 1 max. force variable	0x5111	0x0E	--	UINT	2	RO	--
Recipe 1 window 1 config. down side	0x5111	0x0F	--	USINT	1	RO	--
Recipe 1 window 1 config. up side	0x5111	0x10	--	USINT	1	RO	--
Recipe 1 window 1 config. left side	0x5111	0x11	--	USINT	1	RO	--
Recipe 1 window 1 config. right side	0x5111	0x12	--	USINT	1	RO	--
...							
Recipe 1 window 5	0x5115	0x00	38	UDINT	4	RO	--
Recipe 1 window 5 active	0x5115	0x01	--	BOOL	1	RO	--
Recipe 1 window 5 mode config.	0x5115	0x02	--	BOOL	1	RO	--
Recipe 1 window 5 config. min. position	0x5115	0x03	--	BOOL	1	RO	--
Recipe 1 window 5 min. position value	0x5115	0x04	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 window 5 min. position variable	0x5115	0x05	--	UINT	2	RO	--
Recipe 1 window 5 config. max. position	0x5115	0x06	--	BOOL	1	RO	--
Recipe 1 window 5 max. position value	0x5115	0x07	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 window 5 max. position variable	0x5115	0x08	--	UINT	2	RO	--
Recipe 1 window 5 config. min. force	0x5115	0x09	--	BOOL	1	RO	--
Recipe 1 window 5 min. force value	0x5115	0x0A	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 window 5 min. force variable	0x5115	0x0B	--	UINT	2	RO	--
Recipe 1 window 5 config. max. force	0x5115	0x0C	--	BOOL	1	RO	--

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Recipe 1 window 5 max. force value	0x5115	0x0D	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 window 5 max. force variable	0x5115	0x0E	--	UINT	2	RO	--
Recipe 1 window 5 config. down side	0x5115	0x0F	--	USINT	1	RO	--
Recipe 1 window 5 config. up side	0x5115	0x10	--	USINT	1	RO	--
Recipe 1 window 5 config. left side	0x5115	0x11	--	USINT	1	RO	--
Recipe 1 window 5 config. right side	0x5115	0x12	--	USINT	1	RO	--
Recipe 1 threshold active	0x5101	0x00	--	BOOL	1	RO	--
Recipe 1 threshold 1	0x5121	0x00	50	UDINT	4	RO	--
Recipe 1 threshold 1 active	0x5121	0x01	--	BOOL	1	RO	--
Recipe 1 threshold 1 mode config.	0x5121	0x02	--	BOOL	1	RO	--
Recipe 1 threshold 1 mode	0x5121	0x03	--	BOOL	1	RO	--
Recipe 1 threshold 1 config. position	0x5121	0x04	--	BOOL	1	RO	--
Recipe 1 threshold 1 position value	0x5121	0x05	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 1 position variable	0x5121	0x06	--	UINT	2	RO	--
Recipe 1 threshold 1 config. min. position	0x5121	0x07	--	BOOL	1	RO	--
Recipe 1 threshold 1 min. position value	0x5121	0x08	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 1 min. position variable	0x5121	0x09	--	UINT	2	RO	--
Recipe 1 threshold 1 config. max. position	0x5121	0x0A	--	BOOL	1	RO	--
Recipe 1 threshold 1 max. position value	0x5121	0x0B	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 1 max. position variable	0x5121	0x0C	--	UINT	2	RO	--
Recipe 1 threshold 1 config. force	0x5121	0x0D	--	BOOL	1	RO	--
Recipe 1 threshold 1 force value	0x5121	0x0E	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 1 force variable	0x5121	0x0F	--	UINT	2	RO	--
Recipe 1 threshold 1 config. min. force	0x5121	0x10	--	BOOL	1	RO	--

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Recipe 1 threshold 1 min. force value	0x5121	0x11	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 1 min. force variable	0x5121	0x12	--	UINT	2	RO	--
Recipe 1 threshold 1 config. max. force	0x5121	0x13	--	BOOL	1	RO	--
Recipe 1 threshold 1 max. force value	0x5121	0x14	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 1 max. force variable	0x5121	0x15	--	UINT	2	RO	--
Recipe 1 threshold 1 config.	0x5121	0x16	--	USINT	1	RO	--
...							
Recipe 1 threshold 5	0x5125	0x00	50	UDINT	4	RO	--
Recipe 1 threshold 5 active	0x5125	0x01	--	BOOL	1	RO	--
Recipe 1 threshold 5 mode config.	0x5125	0x02	--	BOOL	1	RO	--
Recipe 1 threshold 5 mode	0x5125	0x03	--	BOOL	1	RO	--
Recipe 1 threshold 5 config. position	0x5125	0x04	--	BOOL	1	RO	--
Recipe 1 threshold 5 position value	0x5125	0x05	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 5 position variable	0x5125	0x06	--	UINT	2	RO	--
Recipe 1 threshold 5 config. min. position	0x5125	0x07	--	BOOL	1	RO	--
Recipe 1 threshold 5 min. position value	0x5125	0x08	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 5 min. position variable	0x5125	0x09	--	UINT	2	RO	--
Recipe 1 threshold 5 config. max. position	0x5125	0x0A	--	BOOL	1	RO	--
Recipe 1 threshold 5 max. position value	0x5125	0x0B	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 5 max. position variable	0x5125	0x0C	--	UINT	2	RO	--
Recipe 1 threshold 5 config. force	0x5125	0x0D	--	BOOL	1	RO	--
Recipe 1 threshold 5 force value	0x5125	0x0E	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 5 force variable	0x5125	0x0F	--	UINT	2	RO	--
Recipe 1 threshold 5 config. min. force	0x5125	0x10	--	BOOL	1	RO	--

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Recipe 1 threshold 5 min. force value	0x5125	0x11	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 5 min. force variable	0x5125	0x12	--	UINT	2	RO	--
Recipe 1 threshold 5 config. max. force	0x5125	0x13	--	BOOL	1	RO	--
Recipe 1 threshold 5 max. force value	0x5125	0x14	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 threshold 5 max. force variable	0x5125	0x15	--	UINT	2	RO	--
Recipe 1 threshold 5 config.	0x5125	0x16	--	USINT	1	RO	--
Recipe 1 envelope active	0x5102	0x00	--	BOOL	1	RO	--
Recipe 1 envelope 1	0x5131	0x00	6	UDINT	4	RO	--
Recipe 1 envelope 1 active	0x5131	0x01	--	BOOL	1	RO	--
Recipe 1 envelope 1 mode config.	0x5131	0x02	--	BOOL	1	RO	--
Recipe 1 envelope 1 up side	0x5132	0x00	76	UDINT	4	RO	--
Recipe 1 envelope 1 points up side	0x5132	0x01	--	INT	2	RO	--
Recipe 1 envelope 1 point up side 1 config. position	0x5132	0x02	--	BOOL	1	RO	--
Recipe 1 envelope 1 point up side 1 position value	0x5132	0x03	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 1 point up side 1 position variable	0x5132	0x04	--	UINT	2	RO	--
Recipe 1 envelope 1 point up side 1 config. force	0x5132	0x05	--	BOOL	1	RO	--
Recipe 1 envelope 1 point up side 1 force value	0x5132	0x06	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 1 point up side 1 force variable	0x5132	0x07	--	UINT	2	RO	--
...							
Recipe 1 envelope 1 point up side 5 config. position	0x5132	0x19	--	BOOL	1	RO	--
Recipe 1 envelope 1 point up side 5 position value	0x5132	0x1A	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 1 point up side 5 position variable	0x5132	0x1B	--	UINT	2	RO	--
Recipe 1 envelope 1 point up side 5 config. force	0x5132	0x1C	--	BOOL	1	RO	--
Recipe 1 envelope 1 point up side 5 force value	0x5132	0x1D	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Recipe 1 envelope 1 point up side 5 force variable	0x5132	0x1E	--	UINT	2	RO	--
Recipe 1 envelope 1 down side	0x5133	0x00	76	UDINT	4	RO	--
Recipe 1 envelope 1 points down side	0x5133	0x01	--	INT	2	RO	--
Recipe 1 envelope 1 point down side 1 config. position	0x5133	0x02	--	BOOL	1	RO	--
Recipe 1 envelope 1 point down side 1 position value	0x5133	0x03	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 1 point down side 1 position variable	0x5133	0x04	--	UINT	2	RO	--
Recipe 1 envelope 1 point down side 1 config. force	0x5133	0x05	--	BOOL	1	RO	--
Recipe 1 envelope 1 point down side 1 force value	0x5133	0x06	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 1 point down side 1 force variable	0x5133	0x07	--	UINT	2	RO	--
...							
Recipe 1 envelope 1 point down side 5 config. position	0x5133	0x19	--	BOOL	1	RO	--
Recipe 1 envelope 1 point down side 5 position value	0x5133	0x1A	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 1 point down side 5 position variable	0x5133	0x1B	--	UINT	2	RO	--
Recipe 1 envelope 1 point down side 5 config. force	0x5133	0x1C	--	BOOL	1	RO	--
Recipe 1 envelope 1 point down side 5 force value	0x5133	0x1D	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 1 point down side 5 force variable	0x5133	0x1E	--	UINT	2	RO	--
...							
Recipe 1 envelope 5	0x513D	0x00	6	UDINT	4	RO	--
Recipe 1 envelope 5 active	0x513D	0x01	--	BOOL	1	RO	--
Recipe 1 envelope 5 mode con-fig.	0x513D	0x02	--	BOOL	1	RO	--
Recipe 1 envelope 5 up side	0x513E	0x00	76	UDINT	4	RO	--
Recipe 1 envelope 5 points up side	0x513 E	0x01	--	INT	2	RO	--
Recipe 1 envelope 5 point up side 1 config. position	0x513E	0x02	--	BOOL	1	RO	--
Recipe 1 envelope 5 point up side 1 position value	0x513E	0x03	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Recipe 1 envelope 5 point up side 1 position variable	0x513E	0x04	--	UINT	2	RO	--
Recipe 1 envelope 5 point up side 1 config. force	0x513E	0x05	--	BOOL	1	RO	--
Recipe 1 envelope 5 point up side 1 force value	0x513E	0x06	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 5 point up side 1 force variable	0x513E	0x07	--	UINT	2	RO	--
...							
Recipe 1 envelope 5 point up side 5 config. position	0x513E	0x19	--	BOOL	1	RO	--
Recipe 1 envelope 5 point up side 5 position value	0x513E	0x1A	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 5 point up side 5 position variable	0x513E	0x1B	--	UINT	2	RO	--
Recipe 1 envelope 5 point up side 5 config. force	0x513E	0x1C	--	BOOL	1	RO	--
Recipe 1 envelope 5 point up side 5 force value	0x513E	0x1D	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 5 point up side 5 force variable	0x513E	0x1E	--	UINT	2	RO	--
Recipe 1 envelope 5 down side	0x513F	0x00	76	UDINT	4	RO	--
Recipe 1 envelope 5 points down side	0x513F	0x01	--	INT	2	RO	--
Recipe 1 envelope 5 point down side 1 config. position	0x513F	0x02	--	BOOL	1	RO	--
Recipe 1 envelope 5 point down side 1 position value	0x513F	0x03	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 5 point down side 1 position variable	0x513F	0x04	--	UINT	2	RO	--
Recipe 1 envelope 5 point down side 1 config. force	0x513F	0x05	--	BOOL	1	RO	--
Recipe 1 envelope 5 point down side 1 force value	0x513F	0x06	--	DINT	4	RO	Unit [N] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 5 point down side 1 force variable	0x513F	0x07	--	UINT	2	RO	--
...							
Recipe 1 envelope 5 point down side 5 config. position	0x513F	0x19	--	BOOL	1	RO	--
Recipe 1 envelope 5 point down side 5 position value	0x513F	0x1A	--	DINT	4	RO	Unit [mm] (2 decimal places) (multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 5 point down side 5 position variable	0x513F	0x1B	--	UINT	2	RO	--

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
Recipe 1 envelope 5 point down side 5 config. force	0x513F	0x1C	--	BOOL	1	RO	--
Recipe 1 envelope 5 point down side 5 force value	0x513F	0x1D	--	DINT	4	RO	Unit [N] (2 decimal places)(multiplied by 100 | 0.01 = 100)
Recipe 1 envelope 5 point down side 5 force variable	0x513F	0x1E	--	UINT	2	RO	--
Recipe 2 windowing active	0x5200	0x00	--	BOOL	1	RO	--
Recipe 2 window 1	0x5211	0x00	38	UDINT	4	RO	--
			...				
Recipe 2 window 5	0x5215	0x00	38	UDINT	4	RO	--
Recipe 2 threshold active	0x5201	0x00	--	BOOL	1	RO	--
Recipe 2 threshold 1	0x5221	0x00	50	UDINT	4	RO	--
			...				
Recipe 2 threshold 5	0x5225	0x00	50	UDINT	4	RO	--
Recipe 2 envelope active	0x5202	0x00	--	BOOL	1	RO	--
Recipe 2 envelope 1	0x5231	0x00	6	UDINT	4	RO	--
Recipe 2 envelope 1 up side	0x5232	0x00	76	UDINT	4	RO	--
Recipe 2 envelope 1 down side	0x5233	0x00	76	UDINT	4	RO	--
			...				
Recipe 2 envelope 5	0x523D	0x00	6	UDINT	4	RO	--
Recipe 2 envelope 5 up side	0x523E	0x00	76	UDINT	4	RO	--
Recipe 2 envelope 5 down side	0x523F	0x00	76	UDINT	4	RO	--
Recipe 3 windowing active	0x5300	0x00	--	BOOL	1	RO	--
Recipe 3 window 1	0x5311	0x00	38	UDINT	4	RO	--
			...				
Recipe 3 window 5	0x5315	0x00	38	UDINT	4	RO	--
Recipe 3 threshold active	0x5301	0x00	--	BOOL	1	RO	--
Recipe 3 threshold 1	0x5321	0x00	50	UDINT	4	RO	--
			...				
Recipe 3 threshold 5	0x5325	0x00	50	UDINT	4	RO	--
Recipe 3 envelope active	0x5302	0x00	--	BOOL	1	RO	--
Recipe 3 envelope 1	0x5331	0x00	6	UDINT	4	RO	--
Recipe 3 envelope 1 up side	0x5332	0x00	76	UDINT	4	RO	--
Recipe 3 envelope 1 down side	0x5333	0x00	76	UDINT	4	RO	--
			...				
Recipe 3 envelope 5	0x533D	0x00	6	UDINT	4	RO	--
Recipe 3 envelope 5 up side	0x533E	0x00	76	UDINT	4	RO	--
Recipe 3 envelope 5 down side	0x533F	0x00	76	UDINT	4	RO	--
Recipe 4 windowing active	0x5400	0x00	--	BOOL	1	RO	--
Recipe 4 window 1	0x5411	0x00	38	UDINT	4	RO	--

Identifier	Index	Sub index	Value	Data Type	Data Size	Access	Comment
			...				
Recipe 4 window 5	0x5415	0x00	38	UDINT	4	RO	--
Recipe 4 threshold active	0x5401	0x00	--	BOOL	1	RO	--
Recipe 4 threshold 1	0x5421	0x00	50	UDINT	4	RO	--
			...				
Recipe 4 threshold 5	0x5425	0x00	50	UDINT	4	RO	--
Recipe 4 envelope active	0x5402	0x00	--	BOOL	1	RO	--
Recipe 4 envelope 1	0x5431	0x00	6	UDINT	4	RO	--
Recipe 4 envelope 1 up side	0x5432	0x00	76	UDINT	4	RO	--
Recipe 4 envelope 1 down side	0x5433	0x00	76	UDINT	4	RO	--
			...				
Recipe 4 envelope 5	0x543D	0x00	6	UDINT	4	RO	--
Recipe 4 envelope 5 up side	0x543E	0x00	76	UDINT	4	RO	--
Recipe 4 envelope 5 down side	0x543F	0x00	76	UDINT	4	RO	--
Recipe 5 windowing active	0x5500	0x00	--	BOOL	1	RO	--
Recipe 5 window 1	0x5511	0x00	38	UDINT	4	RO	--
			...				
Recipe 5 window 5	0x5515	0x00	38	UDINT	4	RO	--
Recipe 5 threshold active	0x5501	0x00	--	BOOL	1	RO	--
Recipe 5 threshold 1	0x5521	0x00	50	UDINT	4	RO	--
			...				
Recipe 5 threshold 5	0x5525	0x00	50	UDINT	4	RO	--
Recipe 5 envelope active	0x5502	0x00	--	BOOL	1	RO	--
Recipe 5 envelope 1	0x5531	0x00	6	UDINT	4	RO	--
Recipe 5 envelope 1 up side	0x5532	0x00	76	UDINT	4	RO	--
Recipe 5 envelope 1 down side	0x5533	0x00	76	UDINT	4	RO	--
			...				
Recipe 5 envelope 5	0x553D	0x00	6	UDINT	4	RO	--
Recipe 5 envelope 5 up side	0x553E	0x00	76	UDINT	4	RO	--
Recipe 5 envelope 5 down side	0x553F	0x00	76	UDINT	4	RO	--

Table 2-2: Object directory