12.82.2 Description

The position feedback 2 type parameter refers only to an external feedback. This parameter is programmed to define the corresponding conditions which apply to the external feedback. Table 120 shows details of the valid values. Depending on the used encoder type several bits in this parameter may be write protected. This information (e.g. bit 6) is provided by the encoder and therefore not changeable.

Table 120 – Structure of Position Feedback 2 Type

Bit	Meaning	Polarity	Value
0	Feedback type		
		Rotational feedback (S-0-0117)	0
		Linear feedback (S-0-0118)	1
1	Distance coded feedback		
		No distance coded reference marks	0
		Distance coded reference marks (S-0-0165, S-0-0166)	1
2	Feedback resolution (feedback 1 see S-0-0116, feedback 2 see S-0-0117)		
		Resolution = metric	0
		Resolution = inches	1
3	Direction polarity		
		Not inverted	0
		Inverted	1
4	Marker pulse quantity		
		Only one reference marker pulse	0
		Multiple cyclic reference marker pulses	1
5	Structure of distance coded feedback		
		Counting positive with positive direction	0
		Counting negative with positive direction	1
7,6	Type of measuring system and evaluation		
		Relative (incremental measuring system, no absolute evaluation)	x0
		Absolute measuring system (Absolute evaluation of the measuring system. The initialization of the position is checked by the drive. Set absolute position S-0-0447 has to be done for homing.)	01
		Incremental use of a absolute measuring system (No monitoring for the initialization of the position. Set absolute position S-0-0447 is not available. For homing the axis use S-0-0148 or S-0-0146)	11
8	(Reserved)		
9	Cyclic marker evaluation		
		Not active	0
		Active (for incremental measuring system – no distance coded – with a cyclic marker pulse use the function "cyclic marker detection")	1

Bit	Meaning	Polarity	Value
15 to 10	(Reserved)		

12.83 IDN S-0-0116 Resolution of feedback 1

12.83.1 Attributes

Table 121 shows the possible attributes for this IDN.

Table 121 – Attributes for IDN S-0-0116

Attribute	Value
Name	Resolution of feedback 1
Version	
Length	4
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	Manufacturer specific
Unit	Manufacturer specific

12.83.2 Description

The parameter resolution of feedback 1 (motor feedback) contains,

- for a rotary feedback, the cycles per revolution of the motor (see also S-0-0256),
- for a linear feedback, the grid constant is entered.

12.84 IDN S-0-0117 Resolution of feedback 2

12.84.1 Attributes

Table 122 shows the possible attributes for this IDN.

Table 122 – Attributes for IDN S-0-0117

Attribute	Value
Name	Resolution of feedback 2
Version	
Length	4
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	Manufacturer specific
Unit	Manufacturer specific

12.84.2 Description

The parameter resolution of feedback 2 (external feedback) contains,

- for a rotary feedback, the cycles per revolution (see also S-0-0257),
- for a linear feedback, the grid constant is entered.

12.85 IDN S-0-0119 Current loop proportional gain 2

12.85.1 Attributes

Table 123 shows the possible attributes for this IDN.

Table 123 – Attributes for IDN S-0-0119

Attribute	Value
Name	Current loop proportional gain 2
Version	
Length	CP16/1, CP16/2 and CP12: 2 or 4, CP16/3: 4
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	Defined by the drive manufacturer
Unit	Defined by the drive manufacturer

12.85.2 Description

The current loop proportional gain 2, influences the flux producing current. The mode of operation is determined by the drive manufacturer. The 4 byte data length is preferred for new implementations. The control unit has to check the data length before access the data.

12.86 IDN S-0-0120 Current loop integral action time 2

12.86.1 Attributes

Table 124 shows the possible attributes for this IDN.

Table 124 – Attributes for IDN S-0-0120

Attribute	Value
Name	Current loop integral action time 2
Version	
Length	2
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	1
Unit	µs

12.86.2 Description

The current loop integral action time 2, influences the flux producing current. The mode of operation is determined by the drive manufacturer.

12.87 IDN S-0-0121 Input revolutions of load gear

12.87.1 Attributes

Table 125 shows the possible attributes for this IDN.

Table 125 – Attributes for IDN S-0-0121

Attribute	Value
Name	Input revolutions of load gear
Version	
Length	4
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	1
Unit	1 [input revolution]

12.87.2 Description

Input revolution values shall be entered as integers.

12.88 IDN S-0-0122 Output revolutions of load gear

12.88.1 Attributes

Table 126 shows the possible attributes for this IDN.

Table 126 – Attributes for IDN S-0-0122

Attribute	Value
Name	Output revolutions of load gear
Version	
Length	4
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	1
Unit	1 [output revolution]

12.88.2 Description

Output revolution values shall be entered as integers.

12.89 IDN S-0-0123 Feed constant

12.89.1 Attributes

Table 127 shows the possible attributes for this IDN.

Table 127 – Attributes for IDN S-0-0123

Attribute	Value
Name	Feed constant
Version	
Length	4
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	See S-0-0076
Unit	See S-0-0076

12.89.2 Description

The feed constant describes the machine element which converts a rotational motion into a linear motion. The feed constant indicates the linear distance during one revolution of the feed spindle.

12.90 IDN S-0-0124 Standstill window

12.90.1 Attributes

Table 128 shows the possible attributes for this IDN.

Table 128 – Attributes for IDN S-0-0124

Attribute	Value
Name	Standstill window
Version	
Length	4
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	Scaling type: S-0-0044 Scaling factor: S-0-0045 Scaling exponent: S-0-0046
Unit	

12.90.2 Description

The standstill window describes the amount of the deviation of the velocity from 0. If the velocity feedback value is within the standstill window the drive sets the status $n_{\text{feedback}} = 0$ (S-0-0331).

12.91 IDN S-0-0125 Velocity threshold (n_x)

12.91.1 Attributes

Table 129 shows the possible attributes for this IDN.

Table 129 – Attributes for IDN S-0-0125

Attribute	Value
Name	Velocity threshold (n_x)
Version	
Length	4
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	Scaling type: S-0-0044 Scaling factor: S-0-0045 Scaling exponent: S-0-0046
Unit	

12.91.2 Description

If the velocity feedback value falls below the velocity threshold n_x, the drive sets the status

'$n_{feedback} < n_x$' (S-0-0332) in C3D.

12.92 IDN S-0-0126 Torque threshold (T_x)

12.92.1 Attributes

Table 130 shows the possible attributes for this IDN.

Table 130 – Attributes for IDN S-0-0126

Attribute	Value
Name	Torque threshold (T_x)
Version	
Length	2
Display format	Unsigned decimal
Min input value	
Max input value	
Scaling/resolution	Scaling type: S-0-0086 Scaling factor: S-0-0093 Scaling exponent: S-0-0094
Unit	

12.92.2 Description

If the torque feedback value exceeds the torque threshold T_x, the drive sets the status '$T \geq T_x$' in C3D (S-0-0333).

12.93 IDN S-0-0129 Manufacturer class 1 diagnostic

12.93.1 Attributes

Table 131 shows the possible attributes for this IDN.

Table 131 – Attributes for IDN S-0-0129

Attribute	Value
Name	Manufacturer class 1 diagnostic
Version	
Length	2
Display format	Binary
Min input value	
Max input value	
Scaling/resolution	1
Unit	

12.93.2 Description

The drive manufacturer can define additional shut-down errors in manufacturer class 1 diagnostic. If an error is set in the manufacturer class 1 diagnostic, the manufacturer-specific error bit in class 1 diagnostic (see S-0-0011) is set as well. The drive cancels the manufacturer-specific error and resets to '0' only if the error in manufacturer class 1 diagnostic has been eliminated upon receiving the command 'reset class 1 diagnostic' (see S-0-0099) via the service channel.

Table 132 shows the interpretation of class 1 diagnostic.

Table 132 – Structure of manufacturer Class 1 diagnostic

Bit	Meaning	Value
15 to 0		
	No error	All bits are set to 0
	Error	One or more bits are set to 1

12.94 IDN S-0-0130 Probe value 1 positive edge

12.94.1 Attributes

Table 133 shows the possible attributes for this IDN.

Table 133 – Attributes for IDN S-0-0130

Attribute	Value
Name	Probe value 1 positive edge
Version	
Length	4
Display format	Signed decimal
Min input value	
Max input value	
Scaling/resolution	Scaling type: S-0-0076 Scaling factor: S-0-0077 Scaling exponent: S-0-0078 Rotational position resolution: S-0-0079
Unit	

12.94.2 Description

If the positive edge of the input signal of probe 1 (see S-0-0401) is activated and enabled, the drive stores the measuring data allocated in IDN S-0-0426 in this parameter. The control unit has the possibility to configure the 'probe value 1 positive edge' in the AT real-time data or read this parameter via the service channel.

12.95 IDN S-0-0131 Probe value 1 negative edge

12.95.1 Attributes

Table 134 shows the possible attributes for this IDN.

Table 134 – Attributes for IDN S-0-0131

Attribute	Value
Name	Probe value 1 negative edge
Version	
Length	4
Display format	Signed decimal
Min input value	
Max input value	
Scaling/resolution	Scaling type: S-0-0076 Scaling factor: S-0-0077 Scaling exponent: S-0-0078 Rotational position resolution: S-0-0079
Unit	

12.95.2 Description

If the negative edge of the input signal of probe 1 (see S-0-0401) is activated and enabled, the drive stores the measuring data allocated in IDN S-0-0426 in this parameter. The control unit has the possibility to configure the 'probe value 1 negative edge' in the AT real-time data or read this parameter via the service channel.

12.96 IDN S-0-0132 Probe value 2 positive edge

12.96.1 Attributes

Table 135 shows the possible attributes for this IDN.

Table 135 – Attributes for IDN S-0-0132

Attribute	Value
Name	Probe value 2 positive edge
Version	
Length	4
Display format	Signed decimal
Min input value	
Max input value	
Scaling/resolution	Scaling type: S-0-0076 Scaling factor: S-0-0077 Scaling exponent: S-0-0078 Rotational position resolution: S-0-0079
Unit	

12.96.2 Description

If the positive edge of the input signal of probe 2 (see S-0-0402) is activated and enabled, the drive stores the measuring data allocated in IDN S-0-0427 in this parameter. The control unit has the possibility to configure the 'probe value 2 positive edge' in the AT real-time data or read this parameter via the service channel.

12.97 IDN S-0-0133 Probe value 2 negative edge

12.97.1 Attributes

Table 136 shows the possible attributes for this IDN.

Table 136 – Attributes for IDN S-0-0133

Attribute	Value
Name	Probe value 2 negative edge
Version	
Length	4
Display format	Signed decimal
Min input value	
Max input value	
Scaling/resolution	Scaling type: S-0-0076 Scaling factor: S-0-0077 Scaling exponent: S-0-0078 Rotational position resolution: S-0-0079
Unit	

12.97.2 Description

If the negative edge of the input signal of probe 2 (see S-0-0402) is activated and enabled, the drive stores the measuring data allocated in IDN S-0-0427 in this parameter. The control unit has the possibility to configure the 'probe value 2 negative edge' in the AT real-time data or read this parameter via the service channel.

12.98 IDN S-0-0134 Drive control (Master control word)

12.98.1 Attributes

Table 137 shows the possible attributes for this IDN.

Table 137 – Attributes for IDN S-0-0134

Attribute	Value
Name	Master control word
Version	
Length	2
Display format	Hexadecimal
Min input value	
Max input value	
Scaling/resolution	1
Unit	

12.98.2 Description

The content of drive control field for CP16/1, CP16/2 and CP12 shall be as specified in Table 138.

The content of drive control field for CP16/3 shall be as specified in Table 139.