

## DAC basic/classic

### Parameter list

**179**

**0791 179901**



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# 1 Parameter

The parameter list helps the user quickly locate and change a parameter. Some parameters have been grouped into categories which can be found on several levels and reflect their importance and their resulting minor or major effect on the sewing behavior of the machine.

## Parameter der Klasse 179

Parameter set:

For subclasses: 179-171629

### 1.1 User level

| E   | C  | P  | Min | Max | Preset value | Unit     | Description   |
|---|----|----|-----|-----|--------------|----------|---|
| <b>Remaining thread monitor/piece counter</b> |    |    |     |     |              |          |   |
| o   | 06 | 06 | 0   | 1   | 0            | -        | Stop sewing motor when the counter reaches 0<br>0 = Off;<br>1 = On                        |
| o   | 06 | 07 | 0   | 1   | 0            | -        | Sewing foot stays down after thread cutting<br>0 = Off;<br>1 = On                         |
| o   | 06 | 08 | 0   | 1   | 0            | -        | When a counter has elapsed, a reset must occur after thread cutting<br>0 = Off;<br>1 = On |
| o   | 06 | 10 | 0   | 1   | 0            | -        | Display of the piece counter<br>0 = Off;<br>1 = On  |
| o   | 06 | 20 | 0   | 1   | 0            | -        | Needle thread monitor up<br>0 = Off;<br>1 = On  |
| o   | 06 | 30 | 0   | 1   | 0            | -        | Needle thread monitor down<br>0 = Off;<br>1 = On  |
| <b>Needle cooling/fan</b>                     |    |    |     |     |              |          |   |
| o   | 13 | 00 | 0   | 1   | 0            | -        | Needle cooling<br>0 = Off;<br>1 = On  |
| <b>Light barrier</b>                          |    |    |     |     |              |          |   |
| o   | 16 | 00 | 0   | 255 | 0            | Stitches | Equalizing stitches for normal stitch length  |
| o   | 16 | 01 | 0   | 255 | 0            | Stitches | Equalizing stitches for long stitch length  |

| <b>E</b>                       | <b>C</b> | <b>P</b> | <b>Min</b> | <b>Max</b> | <b>Preset value</b> | <b>Unit</b> | <b>Description</b>  |
|--------------------------------|----------|----------|------------|------------|---------------------|-------------|---|
| o                              | 16       | 10       | 1          | 255        | 1                   | Seams       | Number of light barrier seams   |
| o                              | 16       | 20       | 0          | 255        | 0                   | Stitches    | Equalizing stitches for knitted garment filter  |
| <b>Stitch loosening device</b> |          |          |            |            |                     |             |   |
| o                              | 25       | 00       | 0          | 2          | 0                   | -           | Mode of automatic stitch loosening device<br>0 = Only stitch loosening;<br>1 = Stitch loosening and 2nd stitch length;<br>2 = Stitch loosening, 2nd stitch length, and quick stroke adjustment; |

## 1.2 Technician level

| E                          | C  | P  | Min | Max  | Preset value | Unit | Description  |
|----------------------------|----|----|-----|------|--------------|------|--|
| <b>Stitch condensation</b> |    |    |     |      |              |      |  |
| t                          | 00 | 00 | 300 | 6000 | 3000         | rpm  | Starting stitch condensation speed   |
| t                          | 00 | 01 | 0   | 254  | 0            | 10°  | Feed-forward angle when the stitch condensation magnet is switched on<br>(Switching from forward to backward during stitch condensation)   |
| t                          | 00 | 02 | 0   | 254  | 0            | 10°  | Feed-forward angle when the stitch condensation magnet is switched off<br>(Switching from backward to forward during stitch condensation)  |
| t                          | 00 | 03 | 0   | 1    | 0            | -    | Start stitch condensation can be interrupted by setting pedal to 0 position<br>0 = Off;<br>1 = On  |
| t                          | 00 | 04 | 0   | 2    | 0            | -    | Mode for end of start stitch condensation<br>0 = Sewing continues after end;<br>1 = Machine stops and must be restarted using the pedal;<br>2 = Thread cutting after stitch condensation |
| t                          | 00 | 05 | 0   | 1    | 0            | -    | Pedal release only after additional 2 stitches<br>0 = Off;<br>1 = On   |
| t                          | 00 | 06 | 0   | 500  | 0            | ms   | Delay time to speed release after start stitch condensation  |
| t                          | 00 | 07 | 0   | 255  | 70           | ms   | Fall time of stitch condensation magnet  |
| t                          | 00 | 09 | 0   | 1    | 0            | -    | Additional forward path at start bartack with the number of backward stitches<br>0 = Off;<br>1 = On  |
| t                          | 00 | 10 | 300 | 6000 | 3000         | rpm  | End stitch condensation speed  |
| t                          | 00 | 11 | 0   | 254  | 8            | 10°  | Feed-forward angle when the stitch condensation magnet is switched on<br>(Switching from forward to backward during stitch condensation)   |

| E | C  | P  | Min | Max  | Preset value | Unit | Description  |
|---|----|----|-----|------|--------------|------|--|
| t | 00 | 12 | 0   | 254  | 0            | 10°  | Feed-forward angle when the stitch condensation magnet is switched off<br>(Switching from backward to forward during stitch condensation)  |
| t | 00 | 13 | 0   | 1    | 0            | -    | Stitch condensation magnet stays switched on until pos. 2 has been reached<br>0 = Off;<br>1 = On   |
| t | 00 | 19 | 0   | 1    | 0            | -    | Additional forward path at end bartack with the number of backward stitches<br>0 = Off;<br>1 = On  |
| t | 00 | 30 | 0   | 1    | 0            | -    | Stitch condensation as decorative stitch<br>0 = Off;<br>1 = On   |
| t | 00 | 31 | 0   | 2500 | 1200         | rpm  | Decorative stitch speed  |
| t | 00 | 32 | 0   | 1000 | 300          | ms   | Ending time during decorative stitching  |
| t | 00 | 35 | 0   | 1    | 0            | -    | Speed decrease when stitch regulator is repositioned<br>0 = Off;<br>1 = On   |
| t | 00 | 36 | 0   | 6000 | 1000         | rpm  | Level to which the speed is supposed to be reduced when the stitch regulator is repositioned   |
| t | 00 | 44 | 0   | 3    | 3            | -    | Handling of manual stitch condensation<br>0 = Manual stitch condensation engages immediately<br>1 = Manual stitch condensation engages depending on parameters t 00 45 and t 00 46;<br>2 = During manual stitch condensation, the drive stops in the position set under parameters t 00 45 and t 00 46;<br>3 = During manual stitch condensation, the drive stops in the position set under parameters t 00 45 and t 00 46 (only if t 00 30 = 1) |



| E                         | C  | P  | Min | Max   | Preset value | Unit     | Description   |
|---------------------------|----|----|-----|-------|--------------|----------|---|
| t                         | 00 | 45 | 0   | 1     | 0            | -        | Switching manual stitch condensation on<br>0 = Needle down;<br>1 = Needle up  |
| t                         | 00 | 46 | 0   | 1     | 0            | -        | Switching manual stitch condensation off<br>0 = Needle down;<br>1 = Needle up   |
| t                         | 00 | 47 | 0   | 3     | 0            | -        | Speed limit for manual stitch condensation<br>0 = Off;<br>1 = Limit to DB3000 if t 00 44 = 0 – 1<br>2 = Limit to ornamental-stitch bartack speed if t 00 44 = 2 – 3 |
| t                         | 00 | 50 | 0   | 999   | 100          | ms       | Activation time of stitch condensation magnet in period t1  |
| t                         | 00 | 51 | 5   | 100   | 100          | %        | Duty cycle in period t1   |
| t                         | 00 | 52 | 0,0 | 600,0 | 0,0          | s        | Activation time of stitch condensation magnet in period t2 (if 0, the stitch condensation magnet remains continuously switched on)                                  |
| t                         | 00 | 53 | 5   | 100   | 100          | %        | Duty cycle in period t2   |
| t                         | 00 | 54 | 0   | 1     | 0            | -        | Increase in $U_{mag}$ when the stitch condensation magnet is activated<br>0 = No;<br>1 = Yes  |
| t                         | 00 | 60 | 0   | 359   | 73           | °        | Angle at which the feed dog repositioner is to supposed switch  |
| t                         | 00 | 61 | 0   | 200   | 14           | ms       | Switch on inertia   |
| t                         | 00 | 62 | 0   | 200   | 16           | ms       | Switch off inertia  |
| t                         | 00 | 63 | 0   | 1     | 0            | -        | Switch feed dog repositioner depending on angle<br>0 = No;<br>1 = Yes   |
| t                         | 00 | 70 | 0   | 255   | 0            | Stitches | Catch Backtack forward  |
| t                         | 00 | 71 | 0   | 255   | 0            | Stitches | Catch Backtack backward   |
| <b>Thread cutter (FA)</b> |    |    |     |       |              |          |   |
| t                         | 02 | 00 | 50  | 750   | 400          | rpm      | Speed when cutting the thread   |
| t                         | 02 | 01 | 0   | 1     | 0            | -        | Pedal position for initiating the cutting process<br>0 = Position -2;<br>1 = Position -1  |

| E                            | C  | P  | Min | Max   | Preset value | Unit | Description  |
|------------------------------|----|----|-----|-------|--------------|------|--|
| t                            | 02 | 02 | 0   | 1     | 0            | -    | Initiate seam end at seam beginning (with single stitch functions activated)<br>0 = No;<br>1 = Yes                                       |
| t                            | 02 | 10 |     |       |              | °    | Switch-on angle t 08 12 <= t 02 10 < t 02 11   |
| t                            | 02 | 11 |     |       |              | °    | Switch-off angle t 02 10 < t 02 11 <= t 08 13  |
| t                            | 02 | 20 | 0   | 255   | 80           | ms   | Delay time for repeated switch-on of thread cutting magnet   |
| t                            | 02 | 21 | 0   | 255   | 80           | ms   | Delay time for switch-off of thread cutting magnet   |
| t                            | 02 | 50 |     |       |              | ms   | Activation time of thread cutter in period t1  |
| t                            | 02 | 51 |     |       |              | %    | Duty cycle in period t1  |
| t                            | 02 | 52 |     |       |              | s    | Activation time of thread cutter in period t2 (if 0, the thread clamp remains continuously switched on)                                  |
| t                            | 02 | 53 |     |       |              | %    | Duty cycle in period t2  |
| t                            | 02 | 54 |     |       |              | -    | Increase in $U_{mag}$ when thread cutter is activated<br>0 = No;<br>1 = Yes  |
| t                            | 02 | 55 |     |       |              | °    | Angle at which duty cycle 2 is activated (0 = deactivated)   |
| <b>Sewing foot lift (FL)</b> |    |    |     |       |              |      |  |
| t                            | 03 | 00 | 0   | 1     | 1            | -    | Sewing foot lift<br>0 = Off;<br>1 = On   |
| t                            | 03 | 01 | 0   | 1     | 0            | -    | No sewing start over push-button while the sewing foot is lifted<br>0 = Off;<br>1 = On   |
| t                            | 03 | 10 | 0   | 9999  | 80           | ms   | Startup delay of machine after sewing foot lift is switched off  |
| t                            | 03 | 11 | 0   | 255   | 40           | ms   | Activation delay of sewing foot lift during a machine standstill   |
| t                            | 03 | 12 | 0,0 | 9,999 | 0,250        | s    | Activation delay of sewing foot lift at seam end   |
| t                            | 03 | 50 | 0   | 999   | 200          | ms   | Activation time of sewing foot lift magnet in period t <sub>1</sub>  |
| t                            | 03 | 51 | 5   | 100   | 100          | %    | Duty cycle in period t <sub>1</sub>  |
| t                            | 03 | 52 | 0,0 | 600,0 | 0,0          | s    | Activation time of sewing foot lift magnet in period t <sub>2</sub> (if 0, the sewing foot lift magnet remains continuously switched on) |

| E  | C  | P  | Min | Max   | Preset value | Unit     | Description   |
|--|----|----|-----|-------|--------------|----------|---|
| t  | 03 | 53 | 5   | 100   | 100          | %        | Duty cycle in period $t_2$  |
| t  | 03 | 54 | 0   | 1     | 0            | -        | Increase in $U_{mag}$ when sewing foot lift magnet is activated<br>0 = No;<br>1 = Yes |
| t  | 03 | 55 | 0   | 1     | 0            | -        | Activation sound warning before foot is automatically lowered<br>0 = No;<br>1 = Yes   |
| <b>Soft start</b>  |    |    |     |       |              |          |   |
| t  | 05 | 00 | 120 | 1000  | 800          | rpm      | Soft start speed  |
| t  | 05 | 01 | 1   | 99    | 2            | Stitches | Number of soft start stitches   |
| <b>Remaining thread monitor/bobbin rotation monitor/skip stitch detector</b> |    |    |     |       |              |          |   |
| t  | 06 | 00 | 0   | 2     | 0            | -        | Activation of remaining thread monitor<br>0 = Off;<br>1 = Right;<br>2 = Left & right; |
| t  | 06 | 01 | 0   | 1     | 0            | -        | Remaining thread monitor mode<br>0 = Dynamic;<br>1 = Static;                          |
| t  | 06 | 02 | 0,0 | 3,300 | 0,0          | V        | Threshold right   |
| t  | 06 | 03 | 0,0 | 3,300 | 0,0          | V        | Intensity right   |
| t  | 06 | 04 | 0,0 | 3,300 | 0,0          | V        | Threshold left  |
| t  | 06 | 05 | 0,0 | 3,300 | 0,0          | V        | Intensity left  |
| t  | 06 | 06 | 0   | 1     | 0            | -        | Confirmation necessary by messages<br>0 = no;<br>1 = yes                              |
| t  | 06 | 10 | 0   | 1     | 0            | -        | Skip stitch detector<br>(Not if t 06 00 = 2)<br>0 = Off;<br>1 = On                    |
| t  | 06 | 11 | 0   | 1     | 0            | -        | Bobbin rotation monitor<br>(Not if t 06 00 = 2)<br>0 = Off;<br>1 = On                 |
| t  | 06 | 12 | 0   | 255   | 0            | Stitches | Number of stitches at which the bobbin rotation monitor is activated                  |
| <b>Needle thread monitor up</b>  |    |    |     |       |              |          |   |
| t  | 06 | 20 | 0   | 1000  | 180          | rpm      | Speed at which the monitor is activated   |
| t  | 06 | 21 | 0   | 255   | 2            | Stitches | Number of stitches at which the monitor is activated                                  |

| E                                 | C  | P  | Min | Max  | Preset value | Unit     | Description  |
|-----------------------------------|----|----|-----|------|--------------|----------|--|
| t                                 | 06 | 22 | 0   | 1000 | 3            | ms       | Debouncing   |
| <b>Needle thread monitor down</b> |    |    |     |      |              |          |  |
| t                                 | 06 | 30 | 0   | 1000 | 180          | rpm      | Speed at which the monitor is activated  |
| t                                 | 06 | 31 | 0   | 255  | 2            | Stitches | Number of stitches at which the monitor is activated   |
| t                                 | 06 | 32 | 0   | 1000 | 3            | ms       | Debouncing   |
| <b>Seam paths</b>                 |    |    |     |      |              |          |  |
| t                                 | 07 | 00 | 0   | 2    | 0            | -        | Handling of position -2 for seam paths<br>0 = Cancellation of the seam. The next seam path is sewn; the last seam of the program is canceled with thread cutting;<br>1 = Termination of the seam with thread cutting (even if not active). The next seam procedure is a free seam;<br>2 = Termination of the seam with thread cutting (even if not active). Seam program is canceled |
| t                                 | 07 | 01 | 0   | 1    | 0            | -        | Automatic mode<br>0 = Off;<br>1 = On   |
| t                                 | 07 | 02 | 0   | 1    | 0            | -        | Signal on switch of path<br>0 = Off;<br>1 = On   |
| t                                 | 07 | 03 | 0   | 1    | 0            | -        | Repair mode<br>0 = Off;<br>1 = On  |
| t                                 | 07 | 04 | 0   | 1    | 0            | -        | Mode for cycling the sewing program<br>0 = Off;<br>1 = On  |
| t                                 | 07 | 05 | 0   | 1    | 0            | -        | Possibility to start sewing from the edited segment<br>0 = Off;<br>1 = On  |
| <b>Motor</b>                      |    |    |     |      |              |          |  |
| t                                 | 08 | 00 | 500 | 9999 | 4500         | rpm      | Maximum speed  |
| t                                 | 08 | 01 | 10  | 400  | 180          | rpm      | Minimum speed  |
| t                                 | 08 | 02 | 10  | 1000 | 180          | rpm      | Positioning speed  |
| t                                 | 08 | 03 | 1   | 100  | 30           | rpm/ms   | Acceleration ramp  |
| t                                 | 08 | 04 | 1   | 100  | 35           | rpm/ms   | Deceleration ramp  |

| E | C  | P  | Min | Max  | Preset value | Unit   | Description  |
|---|----|----|-----|------|--------------|--------|--|
| t | 08 | 05 | 0   | 1    | 0            | -      | Direction of rotation of motor<br>0 = Left;<br>1 = Right   |
| t | 08 | 06 | 0   | 2    | 0            | -      | Motor brake during normal stop<br>0 = Braking for period of t 08 09;<br>1 = Brake continuously active when stopped;<br>2 = Position is continuously maintained |
| t | 08 | 07 | 0,1 | 6,0  | 0,4          | A      | No-damage current when machine down  |
| t | 08 | 08 | 0   | 255  | 20           | -      | Response time to changes in position   |
| t | 08 | 09 | 0   | 999  | 200          | ms     | Duration of motor brake  |
| t | 08 | 10 | -   | -    | -            | -      | Reference position   |
| t | 08 | 11 | -   | -    | -            | -      | Needle positions   |
| t | 08 | 12 | 0   | 359  | 180          | °      | Needle in the low position (bottom dead center) (position 1)   |
| t | 08 | 13 | 0   | 359  | 272          | °      | Thread lever at top dead center (position 2)   |
| t | 08 | 14 | 0   | 359  | 350          | °      | Point position   |
| t | 08 | 15 | 0   | 359  | 292          | °      | Threading position (needle thread)   |
| t | 08 | 16 | 0   | 1    | 0            | -      | Drive to bearing position via pedal  |
| t | 08 | 19 | 1   | 9999 | 1000         | -      | Transmission ratio =<br>(motor diameter / machine diameter) * 1000   |
| t | 08 | 20 | -   | -    | -            | -      | Calibrate pedal  |
| t | 08 | 21 | 1   | 64   | 24           | Levels | Number of speed levels of pedal  |
| t | 08 | 22 | 0   | 7    | 1            | -      | Speed curve  |
| t | 08 | 23 | 1   | 255  | 90           | ms     | Debouncing of position -1  |
| t | 08 | 24 | 1   | 255  | 15           | ms     | Debouncing of position -2  |
| t | 08 | 25 | 0   | 1    | 0            | -      | Selection of pedal<br>0 = Analog;<br>1 = Digital   |
| t | 08 | 26 | 0   | 1    | 0            | -      | Inverting signals of the digital pedal<br>0 = No;<br>1 = Yes (Efka pedal with adapter)   |

| E | C  | P  | Min | Max  | Preset value | Unit | Description   |
|---|----|----|-----|------|--------------|------|---|
| t | 08 | 27 | 0   | 2    | 0            | -    | Handling of position -1 (only with digital pedal)<br>0 = Not stored;<br>1 = Stored;<br>2 = Stored after Thread Trim, not stored after sewstart  |
| t | 08 | 28 | 40  | 70   | 60           | -    | Factor of position -1<br>This parameter can be used to adjust the response between -1 and 0   |
| t | 08 | 29 | 20  | 70   | 49           | -    | Factor of position -2<br>This parameter can be used to adjust the response between -2 and 0   |
| t | 08 | 30 | 0   | 1    | 0            | -    | Display of speed<br>0 = Off;<br>1 = On  |
| t | 08 | 31 | 0   | 1    | 0            | -    | Display of current position<br>0 = Off;<br>1 = On   |
| t | 08 | 32 | 0   | 1    | 0            | -    | After power-on and a tap on the pedal, the needle is moved to the "Needle up" position<br>0 = No;<br>1 = Yes  |
| t | 08 | 33 | 0   | 6    | 0            | -    | Output of position signals (signal must be assigned to an output, e.g. t 51 50)<br>0 = No signals are output;<br>1 = Pos. 1;<br>2 = Pos. 2;<br>3 = Pos. 1 & Pos. 2;<br>4 = Motor operation signal;<br>5 = Motor operation signal & Pos. 1;<br>6 = Motor operation signal & Pos. 2 |
| t | 08 | 34 | 0   | 255  | 0            | °    | Angle for the length of the Pos. 1 signal   |
| t | 08 | 35 | 0   | 255  | 0            | °    | Angle for the length of the Pos. 2 signal   |
| t | 08 | 36 | 10  | 9999 | 10           | rpm  | Speed at which the motor operation signal is activated  |
| t | 08 | 40 | 150 | 9999 | 3000         | rpm  | Speed limit DB3000  |
| t | 08 | 41 | 150 | 9999 | 2000         | rpm  | Speed limit DB2000  |
| t | 08 | 44 | 1   | 255  | 40           | ms   | Debouncing of position 0  |

| E                     | C  | P  | Min | Max  | Preset value | Unit  | Description   |
|-----------------------|----|----|-----|------|--------------|-------|---|
| t                     | 08 | 50 | 10  | 500  | 180          | rpm   | Preset speed value for single stitch functions (half or full stitch, etc.)  |
| t                     | 08 | 51 | 1   | 6000 | 180          | rpm   | Speed for manual sewing per push button   |
| t                     | 08 | 52 | 0   | 1    | 0            | -     | Sewing functions via push button also in manual mode<br>0 = No;<br>1 = Yes  |
| t                     | 08 | 60 | 0   | 64   | 0            | Level | Shifting of position 1<br>Number of speed levels is reduced   |
| <b>Thread tension</b> |    |    |     |      |              |       |   |
| t                     | 09 | 00 | 0   | 3    | 0            | °     | Mode of thread tension and thread tension reduction when sewing foot lift is active<br>0 = no thread tension lift;<br>1 = Thread tension lift in the seam;<br>2 = Thread tension lift after thread cutting;<br>3 = Thread tension lift in the seam and after thread cutting |
| t                     | 09 | 01 | 0   | 1    | 0            | °     | Thread tension with threader (needle thread) lifted<br>0 = No;<br>1 = Yes   |
| t                     | 09 | 02 | 0,0 | 2,55 | 0,0          | s     | Activation delay of thread tension lift after thread cutting when sewing foot is lifted (only active if t 09 00 = 2 or 3)   |
| t                     | 09 | 03 | 0   | 2    | 0            | °     | Coupling of additional thread tension with quick stroke adjustment<br>0 = no coupling;<br>1 = Additional thread tension during quick stroke adjustment;<br>2 = Additional thread tension when quick stroke adjustment speed is reached                                      |
| t                     | 09 | 10 |     |      |              | °     | Switch-on angle t 08 12 <= t 09 10 < t 09 11 during cutting process   |
| t                     | 09 | 11 |     |      |              | °     | Switch-off angle t 09 10 < t 09 11 <= t 08 13 during cutting process  |
| t                     | 09 | 20 | 0   | 255  | 0            | ms    | Delay time for repeated switch-on of thread tension magnet during cutting process   |
| t                     | 09 | 21 | 0   | 255  | 250          | ms    | Delay time for switch-off of thread tension magnet  |

| E                        | C  | P  | Min | Max   | Preset value | Unit | Description   |
|--------------------------|----|----|-----|-------|--------------|------|---|
| t                        | 09 | 30 | 0   | 1     | 0            | -    | Open additional thread tension during start bartacking<br>0 = No;<br>1 = Yes;   |
| t                        | 09 | 31 | 0   | 1     | 0            | -    | Open additional thread tension during end bartacking<br>0 = No;<br>1 = Yes;   |
| t                        | 09 | 32 | 0   | 1     | 0            | -    | Open additional thread tension during manual bartacking<br>0 = No;<br>1 = Yes;  |
| t                        | 09 | 33 | 0   | 1     | 0            | -    | Open additional thread tension for thread clamp<br>0 = No;<br>1 = Yes;  |
| t                        | 09 | 34 | 0   | 1     | 0            | -    | Open additional thread tension during soft start<br>0 = No;<br>1 = Yes;   |
| t                        | 09 | 35 | 0   | 1     | 0            | -    | Open additional thread tension during stitch shortening<br>0 = No;<br>1 = Yes;  |
| t                        | 09 | 36 | 0   | 1     | 0            | -    | Open additional thread tension during quick stroke adjustment<br>0 = No;<br>1 = Yes;  |
| t                        | 09 | 37 | 0   | 1     | 0            | -    | Open additional thread tension during single stitch functions<br>0 = No;<br>1 = Yes;  |
| t                        | 09 | 50 | 0   | 999   | 80           | ms   | Activation time of thread tension magnet in period $t_1$  |
| t                        | 09 | 51 | 5   | 100   | 100          | %    | Duty cycle in period $t_1$  |
| t                        | 09 | 52 | 0,0 | 600,0 | 0,0          | s    | Activation time of thread tension magnet in period $t_2$ . (if 0, the thread tension magnet remains continuously switched on) |
| t                        | 09 | 53 | 5   | 100   | 100          | %    | Duty cycle in period $t_2$  |
| t                        | 09 | 54 | 0   | 1     | 0            | -    | Increase in $U_{mag}$ when the thread tension magnet is activated<br>0 = No;<br>1 = Yes                                       |
| <b>Stroke adjustment</b> |    |    |     |       |              |      |   |
| t                        | 10 | 00 | 0   | 1     | 0            | -    | Stroke adjustment<br>0 = No;<br>1 = Yes   |



| E | C  | P  | Min | Max  | Preset value | Unit     | Description   |
|---|----|----|-----|------|--------------|----------|---|
| t | 10 | 01 | 0   | 9999 | 1800         | rpm      | Stroke adjustment speed   |
| t | 10 | 02 | 1   | 21   | 10           | Level    | Lower threshold   |
| t | 10 | 03 | 1   | 21   | 19           | Level    | Upper threshold   |
| t | 10 | 04 | -   | -    | -            | -        | Display of current level and corresponding speed, e. g. 3: 2800<br>3: = current level<br>2800 = corresponding speed   |
| t | 10 | 06 | 0   | 1    | 0            | -        | Speed limit during quick stroke adjustment<br>0 = Limitation of speed to stroke adjustment speed for 500 ms;<br>1 = Continuous limitation of speed to stroke adjustment speed   |
| t | 10 | 07 | 0,0 | 2,55 | 0,0          | s        | Stopping time of stroke adjustment speed  |
| t | 10 | 08 | 0   | 255  | 0            | Stitches | Number of stitches for automatic switch-off of quick stroke adjustment (when 0, quick stroke adjustment is deactivated)   |
| t | 10 | 09 | 0   | 1    | 0            | -        | Type of quick stroke adjustment potentiometer<br>0 = 9880 867105;<br>1 = 9880 867119  |
| t | 10 | 10 | 0   | 9999 | 0            | rpm      | Automatic of activation/deactivation of quick stroke adjustment<br>Quick stroke adjustment activated $\Leftrightarrow n < t\ 10\ 10$<br>Quick stroke adjustment deactivated $\Leftrightarrow n \geq t\ 10\ 10$<br>Stored stroke adjustment is deactivated |

| E                      | C  | P  | Min | Max | Preset value | Unit | Description   |
|------------------------|----|----|-----|-----|--------------|------|---|
| <b>Function module</b> |    |    |     |     |              |      |   |
| t                      | 11 | 00 | 0   | 16  | 10           | -    | Function of function module 1 (X1.30)<br>0 = No function;<br>1 = Additional thread tension;<br>2 = Stitch length switching;<br>3 = Single stitch with stitch length switching;<br>4 = Single backward stitch with stitch length switching;<br>5 = Raise/lower carrier roller/seam middle guide/puller;<br>6 = Raise/lower edge stop;<br>7 = Raise/lower edge cutter;<br>8 = Stitch length switching (Triflex) with DB2000 speed limit and bartack suppression;<br>9 = Fullness with DB3000 speed limit;<br>10 = Fullness without DB3000 speed limit;<br>11 = Step cutting;<br>12 = Contour guide;<br>13 = Stacker;<br>14 = Output function;<br>15 = Tape cutter;<br>16 = Biphasic edge cutter |
| t                      | 11 | 01 | 0   | 1   | 0            | -    | Invert output of function module 1 (X1.30)<br>0 = No;<br>1 = Yes  |
| t                      | 11 | 02 | 1   | 3   | 1            | -    | Condition of function module 1 (X1.30) after thread cutting<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated  |
| t                      | 11 | 03 | 1   | 3   | 1            | -    | Condition of function module 1 (X1.30) after power on<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated  |
| t                      | 11 | 04 | 0   | 1   | 0            | -    | Function module stored (only if t 11 00 = 14)<br>0 = Stored;<br>1 = Not Stored  |

| E | C  | P  | Min | Max  | Preset value | Unit               | Description   |
|---|----|----|-----|------|--------------|--------------------|---|
| t | 11 | 05 | 0   | 2    | 0            | -                  | Type of activation delay of function module 1 (X1.30) (only if t 11 00 = 14)<br>0 = Time<br>1 = Stitches<br>2 = Bracket |
| t | 11 | 06 | 0   | 9999 | 0            | s or stitches or ° | Activation delay  |
| t | 11 | 07 | 0   | 2    | 0            | -                  | Type of switch-off delay of function module 1 (X1.30)<br>0 = Time<br>1 = Stitches<br>2 = Bracket                        |
| t | 11 | 08 | 0   | 9999 | 0            | s or stitches or ° | Switch-off delay  |
| t | 11 | 09 | 1   | 3    | 1            | -                  | Condition of function module 1 (X1.30) before thread cutting<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated     |
| t | 11 | 30 | 0   | 16   | 0            | -                  | Function of function module 2 (X1.20)<br>For function see t 11 00   |
| t | 11 | 31 | 0   | 1    | 0            | -                  | Invert output of function module 2 (X1.20)<br>0 = No;<br>1 = Yes  |
| t | 11 | 32 | 1   | 3    | 1            | -                  | Condition of function module 2 (X1.20) after thread cutting<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated      |
| t | 11 | 33 | 1   | 3    | 1            | -                  | Condition of function module 2 (X1.20) after power on<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated            |
| t | 11 | 34 | 0   | 1    | 0            | -                  | Function module stored (only if t 11 30 = 14)<br>0 = Stored;<br>1 = Not Stored  |
| t | 11 | 35 | 0   | 2    | 0            | -                  | Type of activation delay of function module 1 (X1.20) (only if t 11 30 = 14)<br>0 = Time<br>1 = Stitches<br>2 = Bracket |

| E | C  | P  | Min | Max  | Preset value | Unit               | Description   |
|---|----|----|-----|------|--------------|--------------------|---|
| t | 11 | 36 | 0   | 9999 | 0            | s or stitches or ° | Activation delay  |
| t | 11 | 37 | 0   | 2    | 0            | -                  | Type of switch-off delay of function module 1 (X1.20)<br>0 = Time<br>1 = Stitches<br>2 = Bracket                    |
| t | 11 | 38 | 0   | 9999 | 0            | s or stitches or ° | Switch-off delay  |
| t | 11 | 39 | 1   | 3    | 1            | -                  | Condition of function module 2 (X1.20) before thread cutting<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated |
| t | 11 | 60 | 0   | 16   | 0            | -                  | Function of function module 3 (X1.15)<br>For function see t 11 00   |
| t | 11 | 61 | 0   | 1    | 0            | -                  | Invert output of function module 3 (X1.15)<br>0 = No;<br>1 = Yes  |
| t | 11 | 62 | 1   | 3    | 1            | -                  | Condition of function module 3 (X1.15) after thread cutting<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated  |
| t | 11 | 63 | 1   | 3    | 1            | -                  | Condition of function module 3 (X1.15) after power on<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated        |
| t | 11 | 64 | 0   | 1    | 0            | -                  | Function module stored (only if t 11 60 = 14)<br>0 = Stored;<br>1 = Not Stored                                      |
| t | 11 | 65 | 0   | 2    | 0            | -                  | Type of activation delay of function module 1 (X1.15) (only if t 11 60 = 14)<br>0 = Time<br>1 = Stitches            |
| t | 11 | 66 | 0   | 9999 | 0            | s or stitches or ° | Activation delay  |
| t | 11 | 67 | 0   | 2    | 0            | -                  | Type of switch-off delay of function module 1 (X1.15)<br>0 = Time<br>1 = Stitches<br>2 = Bracket                    |

| E                         | C  | P  | Min | Max   | Preset value | Unit               | Description   |
|---------------------------|----|----|-----|-------|--------------|--------------------|---|
| t                         | 11 | 68 | 0   | 9999  | 0            | s or stitches or ° | Switch-off delay  |
| t                         | 11 | 69 | 1   | 3     | 1            | -                  | Condition of function module 3 (X1.15) before thread cutting<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated |
| t                         | 11 | 90 | 0   | 999   | 100          | ms                 | Activation time of output FF3 in period $t_1$   |
| t                         | 11 | 91 | 5   | 100   | 100          | %                  | Duty cycle in period $t_1$  |
| t                         | 11 | 92 | 0,0 | 600,0 | 0,0          | s                  | Activation time of output FF3 in period $t_2$ (if 0, output FF3 remains continuously switched on)                   |
| t                         | 11 | 93 | 5   | 100   | 35           | %                  | Duty cycle in period $t_2$  |
| t                         | 11 | 94 | 0   | 1     | 0            | -                  | Increase in $U_{mag}$ when output FF3 is activated<br>0 = No;<br>1 = Yes  |
| <b>Reversal</b>           |    |    |     |       |              |                    |   |
| t                         | 12 | 00 | 0   | 1     | 0            | -                  | Reversal<br>0 = No;<br>1 = Yes  |
| t                         | 12 | 01 | 10  | 350   | 10           | °                  | Reversal angle  |
| t                         | 12 | 02 | 10  | 255   | 20           | ms                 | Waiting time until reversal   |
| t                         | 12 | 03 | 0   | 1     | 0            | -                  | Reverse before seam beginning<br>0 = No;<br>1 = Yes   |
| t                         | 12 | 04 | 10  | 180   | 10           | °                  | Reversal angle at seam beginning  |
| <b>Needle cooling/fan</b> |    |    |     |       |              |                    |   |
| t                         | 13 | 00 | 0   | 1     | 0            | -                  | Needle cooling mode<br>0 = Normal needle cooling;<br>1 = Speed-dependent needle cooling                             |
| t                         | 13 | 01 | 0,0 | 9,999 | 2,500        | s                  | Switch-off delay of needle cooling  |
| t                         | 13 | 02 | 100 | 9999  | 1000         | rpm                | Speed for switching on needle cooling   |
| t                         | 13 | 03 | 0   | 1     | 0            | -                  | Needle cooling during sewing foot lift<br>0 = No;<br>1 = Yes  |
| t                         | 13 | 04 | 0   | 1     | 0            | -                  | Needle cooling during pedal in forward Position $\frac{1}{2}$<br>0 = No;<br>1 = Yes                                 |

| E  | C  | P  | Min | Max | Preset value | Unit     | Description   |
|--|----|----|-----|-----|--------------|----------|---|
| <b>Carrier roller/puller/seam middle guide</b> |    |    |     |     |              |          |   |
| t  | 14 | 00 | 0   | 3   | 1            | -        | Mode for automatic raising of the carrier roller<br>0 = Do not raise;<br>1 = With sewing foot lift;<br>2 = During bartacking;<br>3 = During bartacking and when sewing foot is lifted |
| t  | 14 | 01 | 0   | 1   | 0            | -        | Raise carrier roller when stroke adjustment switched on<br>0 = No;<br>1 = Yes   |
| t  | 14 | 02 | 0   | 1   | 0            | -        | Stitch count delay after sewing foot lift (t 14 03)<br>0 = No;<br>1 = Yes   |
| t  | 14 | 03 | 0   | 255 | 10           | Stitches | Number of stitches until carrier roller is lowered  |
| t  | 14 | 04 | 0   | 1   | 1            | -        | Encoder Top<br>0 = No;<br>1 = Yes   |
| t  | 14 | 05 | 0   | 1   | 1            | -        | Encoder Bottom<br>0 = No;<br>1 = Yes  |
| t  | 14 | 10 | 0   | 2   | 0            | -        | Number of active pullers (Output X1.26 is configured for pressure switch-off)<br>0 = No puller;<br>1 = Puller from above;<br>2 = Puller from above and below                          |
| t  | 14 | 11 | 0   | 1   | 0            | -        | Puller feeding type<br>0 = Continual;<br>1 = Intermittent   |
| t  | 14 | 12 | 0   | 359 | 30           | °        | Start feed angle  |
| t  | 14 | 13 | 0   | 359 | 150          | °        | End feed angle  |
| t  | 14 | 14 | 0   | 2   | 0            | -        | Puller without pressure (output X1.26 is used for this)<br>0 = With pressure;<br>1 = During quick stroke adjustment without pressure;<br>2 = Continuously without pressure            |
| t  | 14 | 15 | 0   | 1   | 0            | -        | Puller is powered off when sewing stops<br>0 = No;<br>1 = Yes   |

| E | C  | P  | Min   | Max   | Preset value | Unit | Description   |
|---|----|----|-------|-------|--------------|------|---|
| t | 14 | 16 | 0     | 1     | 0            | -    | Puller active even if no carrier roller is active<br>0 = No;<br>1 = Yes |
| t | 14 | 17 | 10    | 150   | 90           | mm   | Maximum feed length   |
| t | 14 | 20 | 0,1   | 65,00 | 1,00         | -    | Transmission ratio, top puller  |
| t | 14 | 21 | 1     | 200   | 50           | -    | Material correction, top puller, when feed length is 5 mm               |
| t | 14 | 22 | 0,1   | 5,00  | 3,50         | A    | Set current, top puller   |
| t | 14 | 23 | 0,1   | 3,00  | 1,00         | A    | No-damage current, top puller   |
| t | 14 | 24 | 1     | 9999  | 50           | mm   | Diameter of top carrier roller  |
| t | 14 | 25 | 0     | 1     | 0            | -    | Direction of rotation<br>0 = Right;<br>1 = Left                         |
| t | 14 | 26 | -10,0 | 10,0  | 1,0          | mm   | Feed length during short stitch, top puller                             |
| t | 14 | 30 | 0,1   | 65,00 | 1,00         | -    | Transmission ratio of bottom puller                                     |
| t | 14 | 31 | 1     | 200   | 50           | -    | Material correction, bottom puller, when feed length is 5 mm            |
| t | 14 | 32 | 0,1   | 5,00  | 3,50         | A    | Set current, bottom puller  |
| t | 14 | 33 | 0,1   | 3,00  | 1,00         | A    | No-damage current, bottom puller  |
| t | 14 | 34 | 1     | 9999  | 49           | mm   | Diameter of bottom carrier roller                                       |
| t | 14 | 35 | 0     | 1     | 0            | -    | Direction of rotation<br>0 = Right;<br>1 = Left                         |
| t | 14 | 36 | -10,0 | 10,0  | 1,0          | mm   | Feed length during short stitch, bottom puller                          |

| E                    | C  | P  | Min | Max   | Preset value | Unit     | Description   |
|----------------------|----|----|-----|-------|--------------|----------|---|
| <b>Edge cutter</b>   |    |    |     |       |              |          |   |
| t                    | 15 | 00 | 0   | 7     | 0            | -        | Mode for automatic raising of the edge cutter<br>0 = Do not raise;<br>1 = With sewing foot lift;<br>2 = After cutting or after stitch counting (t 15 04);<br>3 = After cutting or after stitch counting and when sewing foot is lifted;<br>4 = During bartacking;<br>5 = During bartacking and when sewing foot is lifted;<br>6 = After cutting or after stitch counting and during bartacking;<br>7 = After cutting or after stitch counting, during bartacking and when sewing foot is lifted |
| t                    | 15 | 03 | 0   | 255   | 0            | Stitches | Number of stitches until edge cutter is lowered   |
| t                    | 15 | 04 | 0   | 255   | 0            | Stitches | Number of stitches until edge cutter is lifted (t 15 00 = 2 or 3)   |
| t                    | 15 | 05 | 0   | 1     | 0            | -        | Deactivate edge cutter when sewing foot is lifted<br>0 = No;<br>1 = Yes   |
| t                    | 15 | 10 | 0   | 1     | 0            | -        | Electric edge cutter<br>0 = No;<br>1 = Yes  |
| t                    | 15 | 11 | 0   | 1     | 0            | -        | Electric edge cutter when sewing stops<br>0 = No;<br>1 = Yes  |
| t                    | 15 | 12 | 0   | 100   | 50           | %        | Minimum PWM for edge cutter   |
| t                    | 15 | 13 | 0   | 100   | 95           | %        | Maximum PWM for edge cutter   |
| t                    | 15 | 14 | 0   | 9999  | 1500         | rpm      | Maximum speed at which maximum PWM is to be reached   |
| t                    | 15 | 15 | 0,0 | 2,55  | 0,0          | s        | Delay for switching off the edge cutter motor   |
| t                    | 15 | 16 | 0,0 | 9,999 | 0,0          | ms       | Delay between footlifting and lifting/lowering the edge cutter  |
| <b>Light barrier</b> |    |    |     |       |              |          |   |
| t                    | 16 | 00 | 50  | 9999  | 1000         | rpm      | Speed for light barrier equalizing stitches   |



| E                           | C  | P  | Min | Max  | Preset value | Unit | Description   |
|-----------------------------|----|----|-----|------|--------------|------|---|
| t                           | 16 | 01 | 1   | 3    | 3            | -    | Light barrier mode<br>1 = Seam beginning detection;<br>2 = Seam end detection;<br>3 = Seam beginning & seam end detection |
| t                           | 16 | 02 | 0   | 1    | 0            | -    | Mode for seam beginning<br>0 = Release via light barrier;<br>1 = Start via front pedal and light barrier                  |
| t                           | 16 | 03 | 0   | 1    | 0            | -    | Knitted garment filter<br>0 = Off;<br>1 = On  |
| t                           | 16 | 04 | 0   | 1    | 0            | -    | Light barrier detection<br>0 = Bright;<br>1 = Dark  |
| t                           | 16 | 05 | 0   | 1    | 0            | -    | Light barrier automatic mode<br>(only if t 16 01 = 2 or 3)<br>0 = Off;<br>1 = On  |
| t                           | 16 | 06 | 0   | 9999 | 0            | ms   | Time material needs to be detected before machine start   |
| t                           | 16 | 07 | 0   | 1    | 0            | -    | Foot lowering only when material is detected. (only with t 16 01 = 1 or 3 and manual sewing)<br>0 = Off;<br>1 = On        |
| t                           | 16 | 08 | 0   | 9999 | 0            | ms   | Delay between start and foot lowering (only with t 16 07 = 1)   |
| t                           | 16 | 09 | 0   | 9999 | 0            | ms   | Delay between foot lowering and sew start (only with t 16 07 = 1)   |
| <b>Electronic handwheel</b> |    |    |     |      |              |      |   |
| t                           | 17 | 00 | 0   | 1    | 0            | -    | Electronic handwheel<br>0 = No;<br>1 = Yes (t 51 32 and t 51 33 = 0)  |
| t                           | 17 | 01 | 1   | 255  | 6            | -    | Step width for electronic handwheel   |
| t                           | 17 | 02 | 0   | 1    | 0            | -    | Direction of rotation of electronic handwheel<br>0 = Right;<br>1 = Left   |
| <b>Stacker</b>              |    |    |     |      |              |      |   |
| t                           | 18 | 00 | 0   | 1    | 0            | -    | Stacker<br>0 = Off;<br>1 = On   |
| t                           | 18 | 01 | 0,0 | 2,55 | 0,10         | s    | Activation delay stacker  |
| t                           | 18 | 02 | 0,0 | 2,55 | 0,10         | s    | Time when stacker starts clamping   |
| t                           | 18 | 03 | 0,0 | 2,55 | 0,10         | s    | Duty cycle of the stacker   |

| E                                 | C  | P  | Min | Max   | Preset value | Unit     | Description   |
|-----------------------------------|----|----|-----|-------|--------------|----------|---|
| <b>Zigzag</b>                     |    |    |     |       |              |          |   |
| t                                 | 19 | 00 | 0   | 359   | 112          | °        | Switch position for zigzag  |
| t                                 | 19 | 01 | 4   | 6     | 6            | Stitches | Number of stitches for zigzag   |
| <b>Step cutting/contour guide</b> |    |    |     |       |              |          |   |
| t                                 | 21 | 00 | 0,0 | 2,55  | 0,50         | s        | Delay after switching off edge cutter for step cutting  |
| t                                 | 21 | 01 | 0,0 | 2,55  | 0,50         | s        | Delay for extension of stepped cylinder   |
| t                                 | 21 | 02 | 0,0 | 2,55  | 0,50         | s        | Duration of impulse blowing during extension of stepped cylinder  |
| t                                 | 21 | 03 | 0,0 | 2,55  | 0,50         | s        | Delay for switching off blowing when sewing stops   |
| t                                 | 21 | 04 | 0,0 | 2,55  | 0,50         | s        | Delay for switching on edge cutter after switching step cutting on/off                                    |
| <b>Outfeed roller</b>             |    |    |     |       |              |          |   |
| t                                 | 22 | 00 | 0   | 3     | 0            | -        | Outfeed roller mode<br>0 = Off;<br>1 = Seam end;<br>2 = Seam beginning;<br>3 = Seam beginning & seam end; |
| t                                 | 22 | 03 | 0   | 255   | 0            | Stitches | Number of stitches until outfeed roller is lowered at seam beginning                                      |
| t                                 | 22 | 04 | 0   | 255   | 0            | Stitches | Number of stitches until outfeed roller is lifted at seam beginning                                       |
| t                                 | 22 | 05 | 0,0 | 99,99 | 0,50         | s        | Activation delay of the outfeed roller  |
| t                                 | 22 | 06 | 0,0 | 99,99 | 0,50         | s        | Duty cycle of outfeed roller at seam end  |
| t                                 | 22 | 07 | 0,0 | 20,0  | 5,0          | kHz      | Speed of outfeed roller at seam end   |
| <b>Hook lubrication</b>           |    |    |     |       |              |          |   |
| t                                 | 23 | 00 | 0   | 9999  | 0            | Stitches | Number of stitches until hook lubrication is activated  |
| t                                 | 23 | 01 | 0,0 | 99,99 | 0,0          | s        | Duration of hook lubrication  |
| <b>Chain-sucking</b>              |    |    |     |       |              |          |   |
| t                                 | 24 | 00 | 0   | 100   | 30           | Stitches | Number of stitches until suction at the beginning is deactivated  |
| t                                 | 24 | 01 | 0,0 | 10,0  | 0,8          | s        | Duration of the final suction   |
| <b>Stitch loosening device</b>    |    |    |     |       |              |          |   |
| t                                 | 25 | 00 | 0   | 1     | 0            | -        | Automatic sewing material thickness detection<br>0 = Off;<br>1 = On                                       |

| E                              | C  | P  | Min | Max  | Preset value | Unit     | Description  |
|--------------------------------|----|----|-----|------|--------------|----------|--|
| t                              | 25 | 05 | 0   | 1    | 1            | -        | Speed reduction during stitch loosening<br>0 = Off;<br>1 = On  |
| t                              | 25 | 06 | 0   | 1200 | 800          | rpm      | Level to which speed will be reduced   |
| t                              | 25 | 07 | 1   | 3    | 1            | -        | Condition of stitch loosening function after thread cutting process<br>1 = Unchanged;<br>2 = Deactivated;<br>3 = Activated           |
| t                              | 25 | 10 | 1   | 255  | 1            | Stitches | Number of stitches after automatic switching on, when the stitch loosening function is forced  |
| t                              | 25 | 11 | 0   | 255  | 0            | Stitches | Number of stitches with stitch forced loosening function, after which function is deactivated  |
| t                              | 25 | 12 | 0   | 1    | 0            | -        | Additional to t 25 11 it is possible to programm/select the number of stitches with the seamway 2 and 3 button<br>0 = Off;<br>1 = On |
| t                              | 25 | 15 | 0   | 1    | 0            | -        | Possibility to interchange fabric thickness threshold for switch on/off (only with t 25 00 = 1)                                      |
| <b>Tape Cutter</b>             |    |    |     |      |              |          |  |
| t                              | 26 | 00 | 0   | 1    | 0            | -        | Tape Cutter<br>0 = Off;<br>1 = On  |
| t                              | 26 | 01 | 0,0 | 2,55 | 0,80         | s        | Power-up delay tape cutter   |
| t                              | 26 | 02 | 0,0 | 2,55 | 0,40         | s        | Switch-on duration tape cutter   |
| <b>Fabric thickness sensor</b> |    |    |     |      |              |          |  |
| t                              | 27 | 00 | 0   | 1    | 0            | -        | Fabric thickness sensor<br>0 = Off;<br>1 = On  |
| t                              | 27 | 01 | 0,0 | 9,9  | 0,0          | mm       | Fabric thickness threshold for switch on   |
| t                              | 27 | 02 | 0,0 | 9,9  | 0,0          | mm       | Fabric thickness threshold for switch off  |
| t                              | 27 | 03 | 0,0 | 9,9  | 0,0          | mm       | Fabric thickness second threshold for switch on  |
| t                              | 27 | 04 | 0,0 | 9,9  | 0,0          | mm       | Fabric thickness second threshold for switch off   |
| <b>Chain cutter</b>            |    |    |     |      |              |          |  |

| E                              | C  | P  | Min | Max | Preset value | Unit     | Description   |
|--------------------------------|----|----|-----|-----|--------------|----------|---|
| t                              | 28 | 00 | 0   | 2   | 0            | -        | Chain cutter mode<br>0 = Off;<br>1 = On;<br>2 = Clamps after cutting  |
| t                              | 28 | 01 | 0   | 255 | 0            | Stitches | Power down delay after sew start<br>(only with t 28 00 = 2)   |
| t                              | 28 | 02 | 50  | 999 | !!!!         | ms       | Duty cycle of the chain cutter<br>(with t 28 00 = 1)  |
| <b>Stitch length switching</b> |    |    |     |     |              |          |   |
| t                              | 30 | 00 | 0   | 2   | 2            | -        | Speed limit if stitch length is long<br>0 = Off;<br>1 = Speed limit DB2000;<br>2 = Speed limit DB3000                                   |
| t                              | 30 | 01 | 0   | 2   | 0            | -        | Stitch length during bartacking<br>0 = Preset stitch length<br>(Long/Normal);<br>1 = Normal stitch length;<br>2 = Long stitch length    |
| t                              | 30 | 02 | 0   | 2   | 0            | -        | Stitch length after thread cutting<br>0 = Selected stitch length is<br>retained;<br>1 = Normal stitch length;<br>2 = Long stitch length |
| <b>Stitch shortening</b>       |    |    |     |     |              |          |   |
| t                              | 31 | 00 | 0   | 255 | 0            | Stitches | Stitch shortening at seam begin-<br>ning  |
| t                              | 31 | 01 | 0   | 255 | 0            | Stitches | Stitch shortening during thread<br>cutting  |
| <b>Operation lock</b>          |    |    |     |     |              |          |   |
| t                              | 50 | 00 | 0   | 1   | 0            | -        | Operation lock<br>0 = Off;<br>1 = On  |
| t                              | 50 | 01 | 0   | 1   | 0            | -        | Method of operation of operation<br>lock switch<br>0 = Closed contact (NC);<br>1 = Open contact (NO)                                    |
| t                              | 50 | 02 | 0   | 1   | 1            | -        | Behavior of the motor<br>0 = Emergency cut-off;<br>1 = Positioning  |
| <b>Control, other</b>          |    |    |     |     |              |          |   |
| t                              | 51 | 00 | -   | -   | -            | -        | Display software version  |
| t                              | 51 | 01 | -   | -   | -            | -        | Display control serial number   |
| t                              | 51 | 02 | 0   | 1   | 0            | -        | Display analog values (see t 51<br>12) during the sewing process<br>0 = No;<br>1 = Yes  |
| t                              | 51 | 04 | -   | -   | -            | -        | Display class and subclass  |

| E | C  | P  | Min | Max | Preset value | Unit | Description   |
|---|----|----|-----|-----|--------------|------|---|
| t | 51 | 05 | -   | -   | -            | -    | Display operating hours   |
| t | 51 | 06 | -   | -   | -            | -    | Display operating stitches  |
| t | 51 | 07 | -   | -   | -            | -    | Display piece counters  |
| t | 51 | 08 | 0   | 1   | -            | -    | M2M<br>0 = Off;<br>1 = On   |
| t | 51 | 09 | -   | -   | -            | -    | Enter/display M2M Customer ID   |
| t | 51 | 10 | 0   | 5   | -            | -    | Import data to control<br>0 = None; 1 = Parameter settings from DA dongle; 2 = Parameter settings from backup area; 3 = Seam paths from DA dongle; 4 = Master reset; 5 = Reset seam paths   |
| t | 51 | 11 | 0   | 3   | -            | -    | Saving of parameters<br>0 = None;<br>1 = Parameter settings onto DA dongle;<br>2 = Parameter settings into back-up area;<br>3 = Seam paths to the DA dongle   |
| t | 51 | 12 | -   | -   | -            | -    | Hardware test<br>Inputs and outputs in <b>bold</b> are only present in the DAC classic.<br>1. Analog<br>Um: Mains voltage in V<br>U24: power supply outputs in V<br>Imo: current of 24V power supply<br>PAn: analog value of pedal<br>Nre: X1.4 analog input<br><b>Ian</b> : X1.1 analog input<br>Pst: digitized pedal position<br>I2T: I <sup>2</sup> T of the motor (caution: pedal and motor are active!)<br>2. Input<br>X1.5: Manual stitch condensing<br>X1.6: Needle up/down<br>X1.7: Input function module 2<br>X1.8: Input function module 1<br><b>X1.9</b> : No Function<br><b>X1.10</b> : No Function<br>X1.11: Machine run blockage<br><b>X1.12</b> : No Function<br>X1.13: Light barrier<br>X1.14: Suppression/recall stitch condensing<br><b>X2.1</b> : No Function<br><b>X2.2</b> : No Function |

| E | C  | P  | Min | Max  | Preset value | Unit | Description  |
|---|----|----|-----|------|--------------|------|--|
|   |    |    |     |      |              |      | <b>X2.3:</b> No Function<br><b>X2.4:</b> No Function<br><b>X2.6:</b> No Function<br><b>X2.7:</b> No Function<br>3. Output<br><b>X1.15:</b> No Function<br>X1.17: POS2 signal<br><b>X1.18:</b> No Function<br>X1.20: No Function<br>X1.21: No Function<br><b>X1.22:</b> No Function<br><b>X1.23:</b> No Function<br>X1.24: LED suppression/recall stitch condensing<br><b>X1.25:</b> No Function<br>X1.26: POS1 signal<br>X1.27: Thread tension<br><b>X1.28:</b> Needle cooling<br>X1.29: LED function module 1<br>X1.30: Function module 1<br>X1.31: LED function module 2<br><b>X1.32:</b> Function module 2<br>X1.34: Stitch condensing<br>X1.35: Sewing foot lifting<br>X1.36: No Function<br>X1.37: Thread trimmer<br>4. Flash |
| t | 51 | 13 | -   | -    | -            | -    | Display last 10 error messages<br>1 = most recent error<br>10 = first error  |
| t | 51 | 14 | 0   | 1    | -            | -    | Reset maintenance counter<br>0 = No;<br>1 = Yes  |
| t | 51 | 15 | 0   | 1    | -            | -    | Automatic reset of M2M counters after power-on<br>0 = No;<br>1 = Yes   |
| t | 51 | 16 | 0   | 1    | -            | -    | Reset of M2M counters<br>0 = No;<br>1 = Yes  |
| t | 51 | 17 | 0   | 9999 | -            | -    | Password for the technician level. Password Value 0 disables the password query.   |
| t | 51 | 20 | 0   | 60   | 3            | -    | Set input function for bartack input (machine connector Pin 5)<br>0 = No function;<br>1 = Threader;<br>2 = Bartack suppression/activation;<br>3 = Manual bartack;  |

| E | C | P | Min | Max | Preset value | Unit | Description   |
|---|---|---|-----|-----|--------------|------|---|
|   |   |   |     |     |              |      | 4 = Half stitch;<br>5 = Whole stitch;<br>6 = Point position;<br>7 = Reversal;<br>8 = Function module 1 input<br>(see t 11 00);<br>9 = Function module 2 input<br>(see t 11 30);<br>10 = Function module 3 input<br>(see t 11 60);<br>11 = Needle high;<br>12 = Ornamental-stitch bartack;<br>13 = Needle cooling;<br>14 = Thread wiper;<br>15 = Normal stitch length during<br>bartacking;<br>16 = Operation lock when contact<br>open (NO);<br>17 = Operation lock when contact<br>closed (NC);<br>18 = Quick stroke adjustment<br>(not stored);<br>19 = Quick stroke adjustment<br>(stored);<br>20 = Speed limit DB2000;<br>21 = Speed limit DB3000;<br>22 = Light barrier;<br>23 = Puller feeding type (continu-<br>al/intermittent);<br>24 = Sewing foot lift with pedal in<br>position 0;<br>25 = Release for new seam;<br>26 = Manual bartack stored;<br>27 = Move to zigzag position;<br>28 = Zigzag synchronization;<br>29 = Stacker on/off;<br>30 = Manual stacking<br>31 = Function module 1 input on<br>(see t 11 00);<br>32 = Function module 1 input off<br>(see t 11 00);<br>33 = Function module 2 input on<br>(see t 11 30);<br>34 = Function module 2 input off<br>(see t 11 30);<br>35 = Function module 3 input on<br>(see t 11 60);<br>36 = Function module 3 input off<br>(see t 11 60);<br>37 = Service Call (only with |

| E | C  | P  | Min | Max | Preset value | Unit | Description  |
|---|----|----|-----|-----|--------------|------|--|
|   |    |    |     |     |              |      | M2M);<br>38 = Stitch loosening;<br>39 = Fullness top;<br>40 = Fullness bottom;<br>41 = Reverse at seam beginning;<br>42 = Sewing foot lift after thread cutter;<br>43 = Manual sewing<br>44 = Seam end manual/automatic sewing;<br>45 = Automatic sewing;<br>46 = Tape cutter on/off;<br>47 = Manual cutting tape cutter;<br>48 = Shoulder seam 3827;<br>49 = Reset shoulder seam 3827;<br>50 = Fullness 3827;<br>51 = No seam end start;<br>52 = Stitch loosening automatic;<br>53 = Stitch loosening on/off;<br>54 = Operation lock on/off;<br>55 = Fast scissors (PAFF);<br>56 = Electronic handwheel forward;<br>57 = Electronic handwheel backwards;<br>58 = Chain cut/suction (Pfaff);<br>59 = Threadmonitor top;<br>60 = Threadmonitor bottom |
| t | 51 | 21 | 0   | 60  | 2            | -    | Set input function for bartack toggle input (machine connector Pin 14)<br>For function see t 51 20   |
| t | 51 | 22 | 0   | 60  | 4            | -    | Set input function for needle high/low input (machine connector Pin 6)<br>For function see t 51 20   |
| t | 51 | 23 | 0   | 60  | 8            | -    | Set input function for input FF1 (machine connector Pin 8)<br>For function see t 51 20   |
| t | 51 | 24 | 0   | 60  | 9            | -    | Set input function for FF2 input (machine connector Pin 7)<br>For function see t 51 20   |
| t | 51 | 25 | 0   | 60  | 0            | -    | Set input function for input FF3 (machine connector Pin 9)<br>For function see t 51 20   |
| t | 51 | 26 | 0   | 60  | 0            | -    | Set input function for input (machine connector Pin 10)<br>For function see t 51 20  |



| E | C  | P  | Min | Max | Preset value | Unit | Description   |
|---|----|----|-----|-----|--------------|------|---|
| t | 51 | 27 | 0   | 60  | 0            | -    | Set input function for light barrier input (machine connector Pin 13)<br>For function see t 51 20 |
| t | 51 | 28 | 0   | 60  | 0            | -    | Set input function IN_EXT1 (additional input interface Pin 1)<br>For function see t 51 20         |
| t | 51 | 29 | 0   | 60  | 0            | -    | Set input function IN_EXT2 (additional input interface pin 2)<br>For function see t 51 20         |
| t | 51 | 30 | 0   | 60  | 0            | -    | Set input function IN_EXT3 (additional input interface Pin 3)<br>For function see t 51 20         |
| t | 51 | 31 | 0   | 60  | 0            | -    | Set input function IN_EXT4 (additional input interface Pin 4)<br>For function see t 51 20         |
| t | 51 | 32 | 0   | 60  | 0            | -    | Set input function IN_EXT5 (additional input interface Pin 6)<br>For function see t 51 20         |
| t | 51 | 33 | 0   | 60  | 0            | -    | Set input function IN_EXT6 (additional input interface Pin 7)<br>For function see t 51 20         |

| E | C  | P  | Min | Max | Preset value | Unit | Description   |
|---|----|----|-----|-----|--------------|------|---|
| t | 51 | 50 | 0   | 40  | 0            | -    | Set output function for output (machine connector Pin 18)<br>0 = No function;<br>1 = Thread clamp;<br>2 = Locking;<br>3 = Sewing foot lift;<br>4 = Thread tension;<br>5 = Auxiliary thread tension;<br>6 = Second stitch length;<br>7 = Carrier roller;<br>8 = Edge stop;<br>9 = Edge cutter;<br>10 = Fullness with DB3000;<br>11 = Fullness without DB3000;<br>12 = Step cutting;<br>13 = Contour guide;<br>14 = Stacker;<br>15 = Thread cutter;<br>16 = Quick stroke adjustment;<br>17 = Needle cooling;<br>18 = Stitch shortening;<br>19 = Pulse step cutting;<br>20 = Open step cutting;<br>21 = Thread clamp NSB;<br>22 = Thread puller NSB;<br>23 = Carrier roller pressure;<br>24 = Sewing foot pressure;<br>25 = Ready for sewing start;<br>26 = Pos. 1;<br>27 = Pos. 2;<br>28 = Motor operation;<br>29 = In the seam;<br>30 = Outfeed roller;<br>31 = Transport unit;<br>32 = Hook lubrication;<br>33 = Thread wiper;<br>34 = Suction NSB;<br>35 = Tape cutter;<br>36 = Edge cutter off;<br>37 = Stitch loosening;<br>38 = Fullness top;<br>39 = Fullness bottom;<br>40 = Chain cutter |
| t | 51 | 51 | 0   | 40  | 27           | -    | Set output function for output (machine connector Pin 21),<br>For function see t 51 50  |
| t | 51 | 52 | 0   | 40  | 0            | -    | Set output function for output (machine connector Pin 22),<br>For function see t 51 50  |

| E             | C  | P  | Min | Max | Preset value | Unit | Description  |
|---------------|----|----|-----|-----|--------------|------|--|
| t             | 51 | 53 | 0   | 40  | 26           | -    | Set output function for output (machine connector Pin 26),<br>For function see t 51 50   |
| t             | 51 | 54 | 0   | 40  | 4            | -    | Set output function for output (machine connector Pin 27),<br>For function see t 51 50   |
| t             | 51 | 55 | 0   | 40  | 17           | -    | Set output function for output (machine connector Pin 28),<br>For function see t 51 50   |
| t             | 51 | 56 | 0   | 40  | 0            | -    | Set output function for output (machine connector Pin 32),<br>For function see t 51 50   |
| <b>OP1000</b> |    |    |     |     |              |      |  |
| t             | 52 | 00 | 0   | 9   | 4            | -    | Display contrast of OP1000   |
| t             | 52 | 01 | 0   | 1   | 1            | -    | Button tones<br>0 = Off;<br>1 = On   |
| t             | 52 | 20 | 0   | 60  | 1            | -    | Set input function for F button of OP1000<br>0 = No function;<br>1 = Threader;<br>2 = Bartack suppression/activation;<br>3 = Manual bartack;<br>4 = Half stitch;<br>5 = Whole stitch;<br>6 = Point position;<br>7 = Reversal;<br>8 = Function module 1 input (see t 11 00);<br>9 = Function module 2 input (see t 11 30);<br>10 = Function module 3 input (see t 11 60);<br>11 = Needle high;<br>12 = Ornamental-stitch bartack;<br>13 = Needle cooling;<br>14 = Thread wiper;<br>15 = Normal stitch length during bartacking;<br>16 = Operation lock when contact open (NO);<br>17 = Operation lock when contact closed (NC);<br>18 = Quick stroke adjustment (not stored);<br>19 = Quick stroke adjustment (stored);<br>20 = Speed limit DB2000; |

| E | C | P | Min | Max | Preset value | Unit | Description  |
|---|---|---|-----|-----|--------------|------|--|
|   |   |   |     |     |              |      | 21 = Speed limit DB3000;<br>22 = Light barrier;<br>23 = Puller feeding type (continuous/intermittent);<br>24 = Sewing foot lift with pedal in position 0;<br>25 = Release for new seam;<br>26 = Manual bartack stored;<br>27 = Move to zigzag position;<br>28 = Zigzag synchronization;<br>29 = Stacker on/off;<br>30 = Manual stacking<br>31 = Function module 1 input on (see t 11 00);<br>32 = Function module 1 input off (see t 11 00);<br>33 = Function module 2 input on (see t 11 30);<br>34 = Function module 2 input off (see t 11 30);<br>35 = Function module 3 input on (see t 11 60);<br>36 = Function module 3 input off (see t 11 60);<br>37 = Service Call (only with M2M);<br>38 = Stitch loosening;<br>39 = Fullness top;<br>40 = Fullness bottom;<br>41 = Reverse at seam beginning;<br>42 = Sewing foot lift after thread cutter;<br>43 = Manual sewing<br>44 = Seam end manual/automatic sewing;<br>45 = Automatic sewing;<br>46 = Tape cutter on/off;<br>47 = Manual cutting tape cutter;<br>48 = Shoulder seam 3827;<br>49 = Reset shoulder seam 3827;<br>50 = Fullness 3827;<br>51 = No seam end start;<br>52 = Stitch loosening automatic;<br>53 = Stitch loosening on/off;<br>54 = Operation lock on/off;<br>55 = Fast scissor (Pfaff)<br>56 = Electronic handwheel forward;<br>57 = Electronic handwheel forwards; |

| E | C  | P  | Min | Max | Preset value | Unit | Description   |
|---|----|----|-----|-----|--------------|------|---|
|   |    |    |     |     |              |      | 58 = Chain cut/suction (Pfaff);<br>59 = Threadmonitor top;<br>60 = Threadmonitor bottom |
| t | 52 | 40 | 0   | 1   | 0            | -    | Button lock for start bartack buttons<br>0 = Off;<br>1 = On                             |
| t | 52 | 41 | 0   | 1   | 0            | -    | Button lock for end bartack buttons<br>0 = Off;<br>1 = On                               |
| t | 52 | 42 | 0   | 1   | 0            | -    | Button lock for thread buttons<br>0 = Off;<br>1 = On                                    |
| t | 52 | 43 | 0   | 1   | 0            | -    | Button lock for button group seam program<br>0 = Off;<br>1 = On                         |
| t | 52 | 44 | 0   | 1   | 0            | -    | Button lock for button group programming<br>0 = Off;<br>1 = On                          |
| t | 52 | 45 | 0   | 1   | 0            | -    | Button lock for button thread clamp<br>0 = Off;<br>1 = On                               |

### 1.3 Developer level

| E                         | C  | P  | Min | Max   | Preset value | Unit              | Description  |
|---------------------------|----|----|-----|-------|--------------|-------------------|--|
| <b>Bartack</b>            |    |    |     |       |              |                   |  |
| d                         | 00 | 01 | 0   | 359   | 75           | °                 | Mechanical switch-over angle for bartack   |
| <b>Thread cutter (FA)</b> |    |    |     |       |              |                   |  |
| d                         | 02 | 00 | 10  | 359   | 170          | -                 | Angle at which thread cutting speed is to be reached before magnets are switched on                          |
| d                         | 02 | 01 | 0   | 1     | 1            | -                 | Chainstitch mode<br>0 = No;<br>1 = Yes   |
| <b>Seam paths</b>         |    |    |     |       |              |                   |  |
| d                         | 07 | 00 | 150 | 9999  | 1500         | rpm               | Speed limit for seam paths   |
| d                         | 07 | 01 | 1   | 20    | 6            | Stitches          | Number of stitches for seam path speed limit   |
| <b>Motor</b>              |    |    |     |       |              |                   |  |
| d                         | 08 | 00 | 1   | 9999  | 5000         | rpm               | Maximum motor speed  |
| d                         | 08 | 01 | 1   | 100   | 40           | rpm/ms            | Maximum acceleration or deceleration   |
| d                         | 08 | 02 | 0   | 50    | 4            | Kgcm <sup>2</sup> | Machine inertia  |
| d                         | 08 | 04 | 0   | 255   | 100          | Inc               | Extension of deceleration ramp   |
| d                         | 08 | 05 | 0   | 1     | 0            | -                 | Acceleration and deceleration ramp halved when I <sup>2</sup> t increases to over 70 %<br>0 = No;<br>1 = Yes |
| d                         | 08 | 10 | 0,1 | 100,0 | 1,6          | Ohm               | Stator resistance  |
| d                         | 08 | 11 | 1   | 200   | 3            | mH                | Stator inductance  |
| d                         | 08 | 12 | 0,1 | 200,0 | 23,5         | V/1000 rpm        | EMF  |
| d                         | 08 | 13 | 0,1 | 15,00 | 11,00        | A                 | Maximum stator current   |
| d                         | 08 | 14 | 1   | 10    | 2            | -                 | Number of pole pairs   |
| d                         | 08 | 20 | 0   | 255   | 28           | -                 | K <sub>pn</sub> factor of PID speed controller   |
| d                         | 08 | 21 | 0   | 255   | 20           | -                 | K <sub>in</sub> factor of PID speed controller   |
| d                         | 08 | 22 | 0   | 255   | 0            | -                 | K <sub>dn</sub> factor of PID speed controller   |
| d                         | 08 | 23 | 0   | 255   | 6            | -                 | Feed-forward of speed control in deceleration process  |
| d                         | 08 | 30 | 0   | 255   | 36           | -                 | K <sub>ps</sub> factor of PID distance controller  |
| d                         | 08 | 31 | 0   | 255   | 0            | -                 | K <sub>is</sub> factor of PID distance controller  |

| E                     | C  | P  | Min | Max   | Preset value | Unit   | Description   |
|-----------------------|----|----|-----|-------|--------------|--------|---|
| d                     | 08 | 32 | 0   | 255   | 0            | -      | K <sub>ds</sub> factor of PID distance controller                     |
| d                     | 08 | 40 | 0   | 255   | 110          | -      | K <sub>px</sub> factor of PID position controller                     |
| d                     | 08 | 41 | 0   | 255   | 58           | -      | K <sub>dx</sub> factor of PID position controller                     |
| d                     | 08 | 42 | 0   | 255   | 32           | Inc    | Increments for activation of PID position controller                  |
| d                     | 08 | 43 | 0   | 1000  | 0            | 2.857° | Angle for positioning   |
| d                     | 08 | 44 | 0   | 1000  | 32           | Inc    | Increments for duration of activation of positioning speed            |
| d                     | 08 | 45 | 10  | 100   | 50           | rpm    | Increase in speed for position controller during thread cutting       |
| d                     | 08 | 46 | 0   | 200   | 0            | Inc    | Increase increments for the position controller during thread cutting |
| d                     | 08 | 51 | 0   | 1     | 0            | -      | Continuous operation<br>0 = No;<br>1 = Yes                            |
| d                     | 08 | 52 | 0,0 | 99,99 | 5,00         | s      | Motor on duration   |
| d                     | 08 | 53 | 0,0 | 99,99 | 5,00         | s      | Motor off duration  |
| d                     | 08 | 54 | 1   | 9999  | 900          | s      | Duration of continuous operation                                      |
| d                     | 08 | 55 | 0   | 2000  | 180          | rpm    | Speed for reference run   |
| <b>Thread tension</b> |    |    |     |       |              |        |   |
| d                     | 09 | 01 | 5   | 100   | 100          | %      | Duty cycle for threader   |
| <b>Top puller</b>     |    |    |     |       |              |        |   |
| d                     | 14 | 00 | 0,1 | 20,00 | 6,00         | kHz    | Maximum frequency   |
| d                     | 14 | 01 | 1   | 500   | 200          | rpm/ms | Acceleration ramp   |
| d                     | 14 | 02 | 1   | 500   | 200          | rpm/ms | Deceleration ramp   |
| d                     | 14 | 03 | 1   | 9000  | 2000         | Hz     | Start frequency   |
| d                     | 14 | 04 | 1   | 9000  | 2000         | Hz     | Stop frequency  |
| d                     | 14 | 05 | 1   | 1000  | 500          | Lines  | Encoder lines   |
| d                     | 14 | 06 | 1   | 9000  | 2000         | Steps  | Microsteps per turn   |
| d                     | 14 | 10 | 0,1 | 9,000 | 1,100        | Ohm    | Stator resistance   |
| d                     | 14 | 11 | 0,1 | 9,000 | 2,200        | mH     | Stator inductance   |
| d                     | 14 | 12 | 0   | 1000  | 0            | -      | EMF factor  |
| d                     | 14 | 13 | 0,1 | 10,00 | 3,50         | A      | Maximum stator current (regulated)                                    |
| d                     | 14 | 14 | 1   | 100   | 50           | -      | Number of pole pairs  |

| E                    | C  | P  | Min | Max   | Preset value | Unit   | Description                                |
|----------------------|----|----|-----|-------|--------------|--------|--|
| d                    | 14 | 15 | 0,1 | 10,00 | 2,00         | A      | Maximum no-damage current (regulated)      |
| d                    | 14 | 16 | 0,1 | 10,00 | 3,50         | A      | Maximum stator current (controlled)        |
| d                    | 14 | 17 | 0,1 | 10,00 | 2,00         | A      | Maximum no-damage current (controlled)     |
| d                    | 14 | 20 | 0   | 9999  | 0            | -      | $K_{pn}$ factor of PID speed controller    |
| d                    | 14 | 21 | 0   | 9999  | 0            | -      | $K_{in}$ factor of PID speed controller    |
| d                    | 14 | 22 | 0   | 9999  | 0            | -      | $K_{dn}$ factor of PID speed controller    |
| d                    | 14 | 30 | 0   | 9999  | 1500         | -      | $K_{ps}$ factor of PID distance controller |
| d                    | 14 | 31 | 0   | 9999  | 50           | -      | $K_{is}$ factor of PID distance controller |
| d                    | 14 | 32 | 0   | 9999  | 0            | -      | $K_{ds}$ factor of PID distance controller |
| d                    | 14 | 40 | 0   | 9999  | 1500         | -      | $K_{px}$ factor of PID position controller |
| d                    | 14 | 41 | 0   | 9999  | 0            | -      | $K_{ix}$ factor of PID position controller |
| d                    | 14 | 42 | 0   | 9999  | 100          | -      | $K_{dx}$ factor of PID position controller |
| <b>Bottom puller</b> |    |    |     |       |              |        |  |
| d                    | 14 | 50 | 0,1 | 20,00 | 6,00         | kHz    | Maximum frequency                          |
| d                    | 14 | 51 | 1   | 500   | 200          | rpm/ms | Acceleration ramp                          |
| d                    | 14 | 52 | 1   | 500   | 200          | rpm/ms | Deceleration ramp                          |
| d                    | 14 | 53 | 1   | 9000  | 2000         | Hz     | Start frequency                            |
| d                    | 14 | 54 | 1   | 9000  | 2000         | Hz     | Stop frequency                             |
| d                    | 14 | 55 | 1   | 1000  | 500          | Lines  | Encoder lines                              |
| d                    | 14 | 56 | 1   | 9000  | 2000         | Steps  | Microsteps per turn                        |
| d                    | 14 | 60 | 0,1 | 9,000 | 1,100        | Ohm    | Stator resistance                          |
| d                    | 14 | 61 | 0,1 | 9,000 | 2,200        | mH     | Stator inductance                          |
| d                    | 14 | 62 | 0   | 1000  | 0            | -      | EMF factor                                 |
| d                    | 14 | 63 | 0,1 | 10,00 | 3,50         | A      | Maximum stator current (regulated)         |
| d                    | 14 | 64 | 1   | 100   | 50           | -      | Number of pole pairs                       |
| d                    | 14 | 65 | 0,1 | 10,00 | 2,00         | A      | Maximum no-damage current (regulated)      |
| d                    | 14 | 66 | 0,1 | 10,00 | 3,50         | A      | Maximum stator current (controlled)        |
| d                    | 14 | 67 | 0,1 | 10,00 | 2,00         | A      | Maximum no-damage current (controlled)     |



| E                     | C  | P  | Min | Max   | Preset value | Unit      | Description  |
|-----------------------|----|----|-----|-------|--------------|-----------|--|
| d                     | 14 | 70 | 0   | 9999  | 0            | -         | $K_{pn}$ factor of PID speed controller                          |
| d                     | 14 | 71 | 0   | 9999  | 0            | -         | $K_{in}$ factor of PID speed controller                          |
| d                     | 14 | 72 | 0   | 9999  | 0            | -         | $K_{dn}$ factor of PID speed controller                          |
| d                     | 14 | 80 | 0   | 9999  | 1500         | -         | $K_{ps}$ factor of PID distance controller                       |
| d                     | 14 | 81 | 0   | 9999  | 50           | -         | $K_{is}$ factor of PID distance controller                       |
| d                     | 14 | 82 | 0   | 9999  | 0            | -         | $K_{ds}$ factor of PID distance controller                       |
| d                     | 14 | 90 | 0   | 9999  | 1500         | -         | $K_{px}$ factor of PID position controller                       |
| d                     | 14 | 91 | 0   | 9999  | 0            | -         | $K_{lx}$ factor of PID position controller                       |
| d                     | 14 | 92 | 0   | 9999  | 100          | -         | $K_{dx}$ factor of PID position controller                       |
| <b>Control, other</b> |    |    |     |       |              |           |  |
| d                     | 51 | 00 | 1   | 255   | 40           | ms        | Time duration for raising $U_{mag}$ to 33 V                      |
| d                     | 51 | 01 | 1   | 255   | 5            | ms        | Duration for DeEnergizer process                                 |
| d                     | 51 | 02 | 0,1 | 16,00 | 16,00        | kHz       | Set PWM frequency  |
| d                     | 51 | 03 | -   | -     | -            | -         | Display machine serial number                                    |
| d                     | 51 | 04 | -   | -     | -            | -         | Display production date  |
| d                     | 51 | 10 | 0   | 9999  | 0            | x d5111   | Reset value of maintenance counter (counter is deactivated at 0) |
| d                     | 51 | 11 | 1   | 255   | 1            | x 10000St | Factor of maintenance counter                                    |
| d                     | 51 | 12 | 1   | 255   | 1            | x d5111   | Error message repeated   |
| d                     | 51 | 13 | 1   | 99    | 1            | -         | Number of error message repeats                                  |

## 2 Error, warning and information messages

| Code | Type  | Possible cause  | Remedial action  |
|------|-------|---|--|
| 1000 | Error | Sewing motor encoder plug (Sub-D, 9-pin) not connected              | - Connect encoder cable to the control, use correct connection   |
| 1001 | Error | Sewing motor error:<br>Sewing motor plug (AMP) not connected        | - Check connection and plug in, if necessary<br>- Test sewing motor phases ( $R= 2.8 \Omega$ , high impedance to PE)<br>- Replace the encoder<br>- Replace the sewing motor<br>- Replace the control |
| 1002 | Error | Sewing motor insulation error                                       | - Check motor phase and PE for low-impedance connection<br>- Replace the encoder<br>- Replace the sewing motor   |
| 1004 | Error | Sewing motor error:<br>Incorrect sewing motor direction of rotation | - Replace the encoder<br>- Check plug assignment and change, if necessary<br>- Check wiring in machine distributor and change it, if necessary<br>- Test motor phases and check for correct value    |
| 1005 | Error | Motor blocked   | - Eliminate stiff movement in the machine<br>- Replace the encoder<br>- Replace the motor  |
| 1006 | Error | Maximum speed exceeded  | - Replace the encoder<br>- Perform reset<br>- Check class (t 51 04)  |
| 1007 | Error | Error in the reference run  | - Replace the encoder<br>- Eliminate stiff movement in the machine   |
| 1008 | Error | Encoder error   | - Replace the encoder  |
| 1010 | Error | External synchronizer plug (Sub-D, 9-pin) not connected             | Connect cable of external synchronizer to control, use correct connection (Sync)<br>- Only required for machines with transmission!  |
| 1011 | Error | Encoder Z pulse missing   | - Switch off the control. Turn handwheel and switch on the control again<br>- If error is not corrected, check encoder   |
| 1012 | Error | Synchronizer fault  | - Replace the synchronizer   |

| Code | Type        | Possible cause   | Remedial action   |
|------|-------------|--|---|
| 1052 | Error       | Sewing motor overcurrent, internal current increase >25 A                  | <ul style="list-style-type: none"> <li>- Check selection of class</li> <li>- Replace the control</li> <li>- Replace the sewing motor</li> <li>- Replace the encoder</li> </ul>  |
| 1053 | Error       | Sewing motor overvoltage   | <ul style="list-style-type: none"> <li>- Check selection of class</li> <li>- Replace the control</li> </ul>   |
| 1054 | Error       | Internal short circuit   | <ul style="list-style-type: none"> <li>- Replace the control</li> </ul>   |
| 1055 | Error       | Sewing motor overload  | <ul style="list-style-type: none"> <li>- Eliminate stiff movement in the machine</li> <li>- Replace the encoder</li> <li>- Replace the sewing motor</li> </ul>  |
| 1203 | Information | Position not reached (during thread cutting, reversal, etc.)               | <ul style="list-style-type: none"> <li>- Check and, if necessary, change controller settings.</li> <li>Mechanical changes to the machine. (e. g. thread cutting setting, belt tension, etc.)</li> <li>- Check position (thread lever at top dead center)</li> </ul> |
| 2020 | Information | DACextension box not responding  | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Check LEDs of DACextension box</li> <li>- Software update</li> </ul>  |
| 2021 | Information | Sewing motor encoder plug (Sub-D, 9-pin) not connected to DACextension box | <ul style="list-style-type: none"> <li>- Connect encoder cable to DACextension box using the correct connection</li> </ul>  |
| 2101 | Information | DA stepper card 1 reference run timeout                                    | <ul style="list-style-type: none"> <li>- Check reference sensor</li> </ul>  |
| 2103 | Information | DA stepper card 1 step losses  | <ul style="list-style-type: none"> <li>- Check for stiff movement</li> </ul>  |
| 2106 | Information | DA stepper card 1 speed overrun  | <ul style="list-style-type: none"> <li>-</li> </ul>   |
| 2120 | Information | DA stepper card 1 not responding   | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Check LEDs of DACextension box</li> <li>- Software update</li> </ul>  |
| 2121 | Information | DA stepper card 1 encoder plug (Sub-D, 9-pin) not connected                | <ul style="list-style-type: none"> <li>- Connect encoder cable to the control, use correct connection</li> </ul>  |
| 2122 | Information | DA stepper card 1 flywheel position not found                              | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Check stepper motor 1 for stiff movement</li> </ul>   |
| 2155 | Information | DA stepper card 1 overload   | <ul style="list-style-type: none"> <li>- Check for stiff movement</li> </ul>  |
| 2201 | Information | DA stepper card 2 reference run timeout                                    | <ul style="list-style-type: none"> <li>- Check reference sensor</li> </ul>  |
| 2203 | Information | DA stepper card 2 step losses  | <ul style="list-style-type: none"> <li>- Check for stiff movement</li> </ul>  |

| Code | Type        | Possible cause   | Remedial action  |
|------|-------------|--|--|
| 2206 | Information | DA stepper card 2 speed over-run   | -  |
| 2220 | Information | DA stepper card 2 not responding   | - Check connection cables<br>- Check LEDs of DACextension box<br>- Software update                           |
| 2221 | Information | DA stepper card 2 encoder plug (Sub-D, 9-pin) not connected  | - Connect encoder cable to the control, use correct connection   |
| 2222 | Information | DA stepper card 2 flywheel position not found  | - Check connection cables<br>- Check stepper motor 2 for stiff movement                                      |
| 2255 | Information | DA stepper card 2 overload   | - Check for stiff movement   |
| 3100 | Error       | AC-RDY timeout, intermediate circuit voltage did not reach the defined threshold in the specified time | - Check the mains voltage<br>- If the mains voltage is OK, replace the control                               |
| 3101 | Error       | High voltage fault, mains voltage, longer duration >290 V  | - Check mains voltage, if nominal voltage is continuously exceeded, stabilize it or use a generator          |
| 3102 | Error       | Low voltage failure (2nd threshold) (mains voltage < 150 V AC)   | - Check the mains voltage<br>- Stabilize mains voltage<br>- Use generator                                    |
| 3103 | Information | Low voltage warning (1st threshold) (mains voltage < 180 V AC)   | - Check the mains voltage<br>- Stabilize mains voltage<br>- Use generator                                    |
| 3104 | Warning     | Pedal is not in position 0   | When switching the control on, take your foot off the pedal  |
| 3105 | Error       | U24 V short circuit  | - Disconnect 37-pin plug; if error persists, replace control<br>- Test inputs/outputs for 24 V short circuit |
| 3106 | Error       | U24 V (I <sup>2</sup> T) overload  | - One or more magnets defective  |
| 3107 | Error       | Pedal not connected  | - Connect analog pedal   |
| 3108 | Information | Speed limited due to insufficient mains voltage  | - Check the mains voltage  |
| 3109 | Warning     | Operation lock   | - Check tilt sensor on machine   |
| 3150 | Information | Maintenance necessary  | - For information on lubricating the machine, see the service instructions for the machine                   |

| Code | Type        | Possible cause   | Remedial action  |
|------|-------------|--|--|
| 3151 | Warning     | Maintenance necessary (operation cannot continue unless parameter t 51 14 is reset, see the operating instructions of the machine) | - Service is urgently required, see service instructions for the machine   |
| 3155 | Information | No release for sewing process  | - Parameter t 51 20 – t 51 33 = 25<br>- Input signal for sewing process release required   |
| 3160 | Information | Stitch loosening device  | - Stitch loosening cannot be performed   |
| 3170 | Information | Quality issues of the fabric thickness signal  | - Check the positioning of the fabric thickness sensor   |
| 3210 | Information | Topthread torn   | -  |
| 3211 | Information | Bottomthread torn  | -  |
| 3215 | Information | Bobbin stitch counter (info value 0 reached)   | - Change bobbin, set counter value - press counter reset button  |
| 3216 | Information | Remaining thread monitor left  | - Change left bobbin   |
| 3217 | Information | Remaining thread monitor right   | - Change right bobbin  |
| 3218 | Information | Remaining thread monitor left and right  | - Change left and right bobbin   |
| 3219 | Information | Mode for Bobbing-Thread-Winding is active  | - Thread cutting   |
| 3223 | Information | Skip stitch detected   | -  |
| 3224 | Information | Bobbin failed to rotate  | -  |
| 3225 | Information | SSD sensor is dirty  | -  |
| 6353 | Error       | Internal EEPROM communication error  | - Switch off the control, wait until the LEDs are off and then switch on again   |
| 6354 | Error       | External EEPROM communication error  | - Switch off the control, wait until the LEDs are off, check connection for machine ID, switch on control again  |
| 6357 | Error       | Short circuit EEPROM   | - Switch off the control, wait until the LEDs are off, check connection for machine ID, switch on control again<br>- replace control<br>- replace Masch-ID |
| 6360 | Information | No valid data on external EEPROM (internal data structures are not compatible with the external data storage device)               | - Software update  |
| 6361 | Information | No external EEPROM connected   | - Connect machine ID   |

| Code | Type        | Possible cause  | Remedial action  |
|------|-------------|---|--|
| 6362 | Information | No valid data on internal EEPROM (internal data structures are not compatible with the external data storage device)  | <ul style="list-style-type: none"> <li>- Check machine ID connection</li> <li>- Switch off the control, wait until the LEDs are off and then switch on again</li> <li>- Software update</li> </ul> |
| 6363 | Information | No valid data on internal and external EEPROM (Software version is not compatible with the internal data storage device, emergency operating features only)                                   | <ul style="list-style-type: none"> <li>- Check machine ID connection</li> <li>- Switch off the control, wait until the LEDs are off and then switch on again</li> <li>- Software update</li> </ul> |
| 6364 | Information | No valid data on internal EEPROM and external EEPROM not connected (the internal data structures are not compatible with the external data storage device, emergency operating features only) | <ul style="list-style-type: none"> <li>- Check machine ID connection</li> <li>- Switch off the control, wait until the LEDs are off and then switch on again</li> <li>- Software update</li> </ul> |
| 6365 | Information | Internal EEPROM defective   | <ul style="list-style-type: none"> <li>- Replace the control</li> </ul>  |
| 6366 | Information | Internal EEPROM defective and external data not valid (emergency operating features only)   | <ul style="list-style-type: none"> <li>- Replace the control</li> </ul>  |
| 7202 | Information | DACextension box boot error   | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Software update</li> <li>- Replace DACextension box</li> </ul>   |
| 7203 | Information | Checksum error during update  | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Software update</li> <li>- Replace DACextension box</li> </ul>   |
| 7212 | Information | DA stepper card 1 boot error  | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Software update</li> <li>- Replace DACextension box</li> </ul>   |
| 7213 | Information | Checksum error occurred while updating DA stepper card 2  | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Software update</li> <li>- Replace DACextension box</li> </ul>   |
| 7222 | Information | DA stepper card 2 boot error  | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Software update</li> <li>- Replace DACextension box</li> </ul>   |
| 7223 | Information | Checksum error occurred while updating DA stepper card 2  | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Software update</li> <li>- Replace DACextension box</li> </ul>   |
| 7231 | Information | Bobbin control is not connected   | <ul style="list-style-type: none"> <li>- Check connection cables</li> <li>- Software update</li> </ul>   |

| Code              | Type        | Possible cause   | Remedial action  |
|-------------------|-------------|--|--|
| 7232              | Information | Bootloader failure bobbin control  | - Check connection cables<br>- Software update                         |
| 7233              | Information | Checksum error occurred while updating bobbin control card   | - Check connection cables<br>- Software update                         |
| 7241              | Information | Fabric thickness sensor is not connected   | - Check connection cables<br>- Software update                         |
| 7801              | Information | Software version error (DAC classic only; only the functions of the DAC basic will remain available) | - Software update<br>- Replace the control                             |
| 7802              | Information | Software update error (DAC classic only; only the functions of the DAC basic will remain available)  | - Another software update<br>- Replace the control                     |
| 7803              | Information | Communication error (DAC classic only; only the functions of the DAC basic will remain available)    | - Restart of the control<br>- Software update<br>- Replace the control |
| 8401              | Error       | Watchdog   | - Software update<br>- Machine ID reset<br>- Replace the control       |
| 8402<br>–<br>8405 | Error       | Internal error   | - Software update<br>- Machine ID reset<br>- Replace the control       |
| 8406              | Error       | Checksum error   | - Software update<br>- Replace the control                             |
| 8501              | Error       | Software protection  | - the DA tool must always be used for software updates                 |



DÜRKOPP ADLER GmbH  
Potsdamer Str. 190  
33719 Bielefeld  
Germany  
Phone: +49 (0) 521 925 00  
E-mail: [service@duerkopp-adler.com](mailto:service@duerkopp-adler.com)  
[www.duerkopp-adler.com](http://www.duerkopp-adler.com)