

	Code	Description
<b>Monitoring functions</b>		
Evaluation of brush length monitoring, digital, non-floating	<b>A00</b>	Non-floating brush length monitoring with use of KM01 brush wear monitor from Schunk GmbH. The KM01 is fitted in an IP 65 insulating box mounted close to the motor. The KM01 must be connected to the motor using short-circuit-proof cables, and the cables for the power supply and for signals to the cabinet units must be made in the plant. The brush wear monitor is not included in the scope of delivery.
Evaluation of brush length monitoring, digital, floating	<b>A06</b>	Evaluation is carried out using a floating signalling contact in the motor (code <b>A06</b> according to Catalog DA12, Section 1, Protective and monitoring devices).
PTC evaluation for “alarm”	<b>A10</b>	If the permissible motor temperature is exceeded, the red LED flashes on the OP1S operator panel and the alarm A029 “motor temperature too high” is displayed. This alarm can be externally evaluated via status word 2 or via the free digital output. No additional evaluation devices are required. However, it is necessary to make an appropriate comment in the circuit manual. The drive converter must be appropriately parameterized on-site. A PTC thermistor for “alarm” must be provided in the motor.
PTC evaluation for “fault”	<b>A11</b>	If the permissible motor temperature is exceeded, the red LED is lit on the OP1S operator panel and the fault F029 “motor temperature too high”, and the group signal “fault” are displayed. The drive converter is then powered-down. Fault F029 can be additionally evaluated via status word 2 or using a free digital output. No additional evaluation units are required. However, the appropriate comment should be made in the circuit manual. The drive converter must be appropriately parameterized on-site. A PTC thermistor for “power-down” must be provided in the motor.
PTC thermistor evaluation for “alarm and fault”	<b>A12</b>	Refer to codes <b>A10</b> and <b>A11</b> A PTC thermistor for “alarm” and a PTC thermistor for “power-down” must be provided in the motor.
NTC thermistor evaluation unit for “alarm” and/or “power-down”	<b>A20</b>	If the motor alarm temperature, set at the evaluation unit, is exceeded, the red LED on the OP1S operator panel flashes and alarm A029 “motor temperature too high” is displayed. This alarm can be externally evaluated via status word 2 or via a free digital output. If the motor trip-down temperature, set at the evaluation unit, is exceeded, the red LED on the OP1S operator panel is lit and fault F029 “motor temperature too high” is output and the “fault” group message displayed. The drive converter is simultaneously powered-down (tripped). Fault F029 can be additionally evaluated via status word 2 or using a free digital output. The units must be adjusted and appropriately parameterized on-site. 3UP7 004 thermistor motor protection device for NTC thermistor temperature sensors (includes two evaluation circuits which are independent of one another for a maximum of three temperature sensors). NTC thermistors for alarm and/or power-down must be provided in the DC motor. It is possible to use a sensor to initiate an “alarm” as well as “power-down” (status when supplied, jumper B inserted). The operating temperature of the evaluation unit must be adjusted on-site.
KTY84-130 evaluation for “alarm” and/or “fault”	<b>A23</b>	Refer to codes <b>A10</b> and <b>A11</b> The motor must be provided with a KTY84 temperature sensor. Using a sensor, it is possible to initiate both an “alarm” as well as “trip”.
2 x KTY84-130 evaluation for “alarm” and/or “fault”	<b>A24</b>	Refer to codes <b>A10</b> and <b>A11</b> The motor must be provided with two KTY84 temperature sensors. It is possible to initiate both an “alarm” as well as “power-down” using one sensor.

	Code	Description
Monitoring of motor temperature using PT100	<b>A62</b>	<p>If the motor alarm temperature, set at the evaluation unit, is exceeded, the red LED on the OP1S operator panel flashes and alarm A029 "motor temperature too high" is displayed. This alarm can be externally evaluated via status word 2 or via a free digital output.</p> <p>If the motor trip-down temperature, set at the evaluation unit, is exceeded, the red LED on the OP1S operator panel is lit and fault F029 "motor temperature too high" is output and the "fault" group message displayed. The drive converter is simultaneously powered-down (tripped). Fault F029 can be additionally evaluated via status word 2 or using a free digital output.</p> <p>The units must be adjusted and appropriately parameterized on-site.</p> <p>A PT100 evaluation unit for winding temperature is provided in the converter cabinet. The unit has a temperature range configurable from 0 to 200 °C, and two-wire and three-wire connections for PT100.</p>
Monitoring of bearing temperature using PT100	<b>A72</b>	<p>If the motor alarm temperature, set at the evaluation unit, is exceeded, the red LED on the OP1S operator panel flashes and alarm A029 "motor temperature too high" is displayed. This alarm can be externally evaluated via status word 2 or via a free digital output.</p> <p>If the motor trip-down temperature, set at the evaluation unit, is exceeded, the red LED on the OP1S operator panel is lit and fault F029 "motor temperature too high" is output and the "fault" group message displayed. The drive converter is simultaneously powered-down (tripped). Fault F029 can be additionally evaluated via status word 2 or using a free digital output.</p> <p>The units must be adjusted and appropriately parameterized on-site.</p> <p>Two PT100 evaluation units for bearing temperature are provided in the converter cabinet. The unit has a temperature range configurable from 0 to 200 °C, and a two-wire connection for PT100.</p>
Air flow monitoring in the motor	<b>A97</b>	<p>A "vent captor" (type: 3201.03) air flow monitor in the motor is used to evaluate the air flow (code <b>A97</b>, acc. to Catalog DA 12, Section 1, Protective and monitoring devices and Supplement DA 12, July 2001, Section 3).</p> <p>Depending on the parameterization which was made, when a fault condition occurs, the A027 alarm is output with a (red flashing LED) or F027 (red LED which is lit). When parameterized for "fault", the "fault" group message is displayed and the drive converter is powered-down.</p> <p>The "alarm" and "fault" messages can be additionally evaluated via status word 1.</p> <p>The drive converter must be appropriately parameterized on-site.</p> <p>No additional evaluation devices are required but an appropriate comment must be made in the circuit manual.</p>
Motor overtemperature, digital	<b>A31</b>	<p>Evaluation is carried out using a floating signalling contact in the motor (code <b>A31</b> according to Catalog DA 12, Section 1, Special designs, and Supplement DA 12, July 2001, Section 3).</p>
Ground fault monitoring in grounded supplies (TN or TT network)	<b>A40</b>	<p>An electronic differential relay monitors the fault current to ground (PE).</p> <p>If a ground fault occurs, then the "ground fault" signal is displayed using the indicator light (red). The drive is simultaneously powered-down.</p> <p>Note:</p> <p>For protection, where the unit is powered-down via the ground fault monitor, the protective conductor or PEN conductor of the cable for the cabinet supply and motor armature circuit can be dimensioned in accordance with DIN VDE 0100, Part 540. Outer conductor cross-section according to DIN VDE 0160. The release of the circuit-breaker must be adjusted on-site.</p>
Ground fault monitoring in non-grounded line supplies (IT network)	<b>A41</b>	<p>An insulation monitor monitors the condition of the insulation with respect to ground in the drive converter system (AC and DC connection).</p> <p>If a ground fault occurs, the "ground fault" signal is output at a terminal and the indicating lamp is lit (yellow). An additional coupling device is used for rated supply voltages above 3-ph. 690 V.</p> <p>Note:</p> <p>For protection using a signal from an insulation monitor, in non-grounded supply networks, additional local potential bonding is required for the cabinet and motor and for the other conductive components which can be simultaneously touched.</p> <p>Protective conductor cross-section: according to DIN VDE 0100, Part 540.</p> <p>Outer conductor cross-section: acc. to DIN VDE 0160.</p> <p>External ground faults, which occur in the line supply, external to the drive converter system, are also detected by the ground fault monitoring in the cabinet unit if the main switch/circuit-breaker is switched on. The insulation monitor must be adjusted on-site.</p>
Overvoltage protection module	<b>A45</b>	<p>7VV3002-3..20 depending on the rated drive converter voltage. Attention! Delay in the time of delivery! (for unit, see Catalog DA 94.2)</p>

	Code	Description
<b>OFF function</b>		
EMERGENCY OFF	<b>B20</b>	<p>2-channel, with 3TK2827-1AL20 and mushroom-head pushbutton switch (red) with lock RONIS (code SB30) plus one illuminated pushbutton (red) for acknowledgement and signaling in the cabinet doors.</p> <p>Single-quadrant operation: If the "EMERGENCY OFF" command is issued, the drive is immediately powered-down and coasts down corresponding to the moments of inertia. Four-quadrant operation: When the "EMERGENCY OFF" command is issued, the drive is braked regeneratively down to standstill via the "fast stop" function (drive converter must be appropriately parameterized on-site) along the current limit by reversing the torque. The drive is powered-down at <math>n = 0</math>.</p> <p>With the "EMERGENCY OFF" command, the disconnection of the drive is initiated with a delay (redundancy). The delay time must be set on the contactor safety combination and matched in the system to the OFF3 times (OFF3 is one of the OFF functions supported by the SIMOREG DC MASTER).</p> <p>EMERGENCY OFF devices in accordance with EN 60204-1.</p> <p>A mushroom-head pushbutton switch is built in the cabinet door; external "EMERGENCY OFF" control devices can be additionally connected to the cabinet terminal strip. As for version B20, the mushroom-head pushbutton switch "E-Stop", which is built in the cabinet door as standard, is not installed.</p> <p>If additional accident prevention regulations have to be observed in addition to the VDE regulations, then the user must specifically specify these.</p> <p>Special versions on request.</p>
Access facility for locking the incoming circuit-breaker	<b>B30</b>	External access facility (terminals) provided so that the incoming circuit-breaker or the main contactor can be switched off externally. This could be, for example, by a leading auxiliary switch of a circuit-breaker on the high-voltage side in order to prevent the over-voltage resulting from switching off on the primary side of the transformer from reaching the SIMOREG device. In this case, an E-STOP must be defined at the same time, and terminals are provided as standard for this.
<b>Actual speed sensing</b>		
Representation in the documentation of the connection for actual speed sensing. There is no extra charge for this option.	<b>G01</b> <b>G02</b>	<p>Sensing of actual speed using pulse encoder</p> <p>Sensing of actual speed using analog tachogenerator</p>
<b>Setpoints</b>		
Input isolating amplifier, input: 0 mA to 20 mA	<b>Y40</b> <sup>1)</sup>	<p>Universal DC isolating amplifier with electrical isolation, to connect an analog external setpoint.</p> <p>Already preset to the required input/output configuration and the input/output configuration can be changed on-site. However, in this case, it is necessary to re-adjust the drive; instructions are attached.</p> <p>When ordering, for the appropriate comments and changes to be made in the circuit manual, the input quantity to be transferred must be specified in plain text. If several input isolating amplifiers are needed, the option must be indicated several times.</p> <p>The drive converter must be appropriately parameterized on-site.</p>
Input isolating amplifier, input: 4 mA to 20 mA	<b>Y41</b> <sup>1)</sup>	Version; refer to Code <b>Y40</b>
Input isolating amplifier, input: 0 V to +10 V	<b>Y42</b> <sup>1)</sup>	Version; refer to Code <b>Y40</b>
Input isolating amplifier, input: -20 mA to +20 mA	<b>Y43</b> <sup>1)</sup>	Version; refer to Code <b>Y40</b>
Input isolating amplifier, input: -10 V to +10 V	<b>Y44</b> <sup>1)</sup>	Version; refer to Code <b>Y40</b>
<b>Supplementary circuits</b>		
Coil voltage of coupling relays at the digital inputs	<b>C51</b>	The coupling relays at the digital inputs of the SIMOREG device – which are designed as standard with a 230 V AC coil – are delivered with a 24 V DC coil.
Without setpoint potentiometer and mode selector	<b>C61</b>	The cabinet is delivered without a setpoint potentiometer and without a mode selector (reduction in price).
Anti-condensation heating for cabinet unit (moisture condensation protection)	<b>E20</b> <b>E21</b> <b>E22</b>	<p>The power supply is realized from an external supply (1-ph. 230 V, 50/60 Hz) which must be protected externally with max. 16 A. If options E30 to E34 are ordered at the same time, only one external supply is needed.</p> <p>For cabinet units up to 60 A rated DC current</p> <p>For cabinet units, 90 A to 600 A rated DC current</p> <p>For cabinet units, 720 A to 2000 A rated DC current</p>
Space heater for motor	<b>E30</b> <b>E31</b> <b>E32</b> <b>E33</b> <b>E34</b>	<p>The power supply is from a separate source (1-ph. 230 V AC, 50/60 Hz), and must be fused at max. 16 A. If the "Operation" status is no longer existent, the space heater for the motor is connected. Only one separate source is required if the options E20 to E22 are ordered simultaneously.</p> <p>For heaters with max. 100 W output</p> <p>For heaters with max. 250 W output</p> <p>For heaters with max. 500 W output</p> <p>For heaters with max. 800 W output</p> <p>For heaters with max. 2000 W output</p>

1) Codes with **Y..** require information in plain text.

	Code	Description
Deletion of three-phase commutating reactor	<b>L01</b>	Design without three-phase commutating reactor since converter transformer is present (reduction in price). Only the armature circuit may be connected to this transformer. An external supply for excitation and auxiliaries must therefore always be provided by the customer.
Field reversal	<b>W50</b>	Reversal of field circuit for DC motor for braking and reversal of direction of rotation with single-quadrant/two-quadrant drive converters and with a rated direct current of 400 A or above. The following information is additionally required in plain text: <ul style="list-style-type: none"> <li>• Rated field current of motor</li> <li>• Rated field voltage of motor</li> <li>• Energy content or inductance of field winding</li> <li>• Maximum switching frequency per hour</li> </ul> Please note: longer delivery time! Field overvoltage protection is determined for the respective application. Price on request.
Motor holding brake	<b>Y51</b> <sup>1)</sup>	Supply: 1-ph. 230 V, 50/60 Hz The brake is controlled using the SIMOREG cabinet unit. When ordering the drive converter, the rating plate and performance data of the motor holding brake must be additionally specified in plain text.
Output isolating amplifier, output: 0 mA to 20 mA	<b>Y52</b> <sup>1)</sup>	Universal DC isolating amplifier with electrical isolation, e.g. for externally transferring measured value signals. Already preset to the required input/output configuration; the input/output configuration can be changed on-site. However, in this case, the drive converter must be readjusted; instructions are attached. When ordering, for the appropriate comments and changes to be made in the circuit manual, the input quantity to be transferred must be specified in plain text. If several output isolating amplifiers are needed, the option must be indicated several times. The drive converter must be appropriately parameterized on-site.
Output isolating amplifier, output: 4 mA to 20 mA	<b>Y53</b> <sup>1)</sup>	Version; refer to Code <b>Y52</b>
Output isolating amplifier, output: 0 V to 10 V	<b>Y54</b> <sup>1)</sup>	Version; refer to Code <b>Y52</b>
Output isolating amplifier, output: -20 mA to +20 mA	<b>Y55</b> <sup>1)</sup>	Version; refer to Code <b>Y52</b>
Output isolating amplifier, output: -10 V to +10 V	<b>Y56</b> <sup>1)</sup>	Version; refer to Code <b>Y52</b>
Coupling relay for digital output	<b>Y60</b> <sup>1)</sup>	Additional relay with a changeover contact on one of the two vacant digital outputs on the CUD2 terminal expansion board (max. 2x). If the relay application is specified in plain text, this will be entered in the documentation. This option is not possible when using option W50 (field reversal).
Other motor fan voltage	<b>Y01</b> <sup>1)</sup>	Motor fan voltage differing from 3-ph. 400 V. Specify voltage in plain text. Option V40 is required in addition if the voltage is not the same as that for the power circuit, and is not provided by the customer.
Setting range for the motor fan motor protection circuit-breaker	<b>W15</b>  <b>W20</b> <b>W21</b> <b>W22</b> <b>W23</b> <b>W24</b> <b>W25</b> <b>W26</b> <b>W27</b> <b>W28</b> <b>W29</b> <b>W30</b> <b>W31</b> <b>W32</b> <b>W33</b> <b>W34</b> <b>W35</b> <b>W36</b> <b>W37</b> <b>W38</b> <b>W39</b> <b>W40</b> <b>W41</b>	The rated connection voltage for the motor fan is 400 V. See Technical data for standard range of adjustment (table, pages 18 and 19). If none of the options W20 to W41 is specified, the setting range according to the table "Technical data" is implemented.  No output provided for motor fan. Setting range for the circuit-breaker:  0.11 A to 0.16 A 0.14 A to 0.2 A 0.18 A to 0.25 A 0.22 A to 0.32 A 0.28 A to 0.4 A 0.35 A to 0.5 A 0.45 A to 0.63 A 0.55 A to 0.8 A 0.7 A to 1.0 A 0.9 A to 1.25 A 1.1 A to 1.6 A 1.4 A to 2.0 A 1.8 A to 2.5 A 2.2 A to 3.2 A 2.8 A to 4.0 A 3.5 A to 5.0 A 4.5 A to 6.3 A 5.5 A to 8.0 A 7.0 A to 10.0 A 9.0 A to 12.5 A 11.0 A to 16.0 A 14.0 A to 20.0 A

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	Code	Description
Second motor fan	<b>W70</b> <b>W71</b> <b>W72</b> <b>W73</b> <b>W74</b> <b>W75</b> <b>W76</b> <b>W77</b> <b>W78</b> <b>W79</b> <b>W80</b> <b>W81</b> <b>W82</b> <b>W83</b> <b>W84</b> <b>W85</b> <b>W86</b> <b>W87</b> <b>W88</b> <b>W89</b> <b>W90</b> <b>W91</b>	<p>This is used, for example, to connect an external fan motor of a 1HQ5 DC motor, which is equipped with a separately-driven fan for the internal and external cooling air circuit. The rated supply voltage for the motor fan is 400 V.</p> <p>Standard setting range, refer to the technical data.</p> <p>Setting range for the circuit-breaker:</p> <p>0.11 A to 0.16 A  0.14 A to 0.2 A  0.18 A to 0.25 A  0.22 A to 0.32 A  0.28 A to 0.4 A  0.35 A to 0.5 A  0.45 A to 0.63 A  0.55 A to 0.8 A  0.7 A to 1.0 A  0.9 A to 1.25 A  1.1 A to 1.6 A  1.4 A to 2.0 A  1.8 A to 2.5 A  2.2 A to 3.2 A  2.8 A to 4.0 A  3.5 A to 5.0 A  4.5 A to 6.3 A  5.5 A to 8.0 A  7.0 A to 10.0 A  9.0 A to 12.5 A  11.0 A to 16.0 A  14.0 A to 20.0 A</p>
Paint finish in other RAL colors	<b>Y90</b> <sup>1)</sup> <b>Y91</b> <sup>1)</sup>	<p>For cabinet units up to a rated DC current of 600 A</p> <p>For cabinet units, 720 A to 2000 A rated DC current</p> <p>Specify the RAL colors in plain text.</p>
Cabinet lighting and cabinet socket – outlet	<b>W92</b>	<p>The lighting is automatically switched on when the cabinet door is opened.</p> <p>The power supply is realized through a separate supply (1-ph. 230 V, 50/60 Hz) which must be externally protected with max. 16 A.</p>
Radio interference suppression filter	<b>W10</b>	<p>Radio interference suppression filters are used on the line side.</p> <p>When equipped with radio interference suppression filter, the cabinets correspond to Standard EN 55011, Class A1. This option is provided for operation with grounded line supplies.</p> <p>Depending on the rated current, other cabinet dimensions or an additional cabinet may be required.</p>
Foreign-language documentation	<b>X10</b> <b>X11</b> <b>X12</b> <b>X13</b>	<p>Documentation in English</p> <p>Standard reference texts in circuit diagram in French, list of units in English.</p> <p>Standard reference texts in circuit diagram in Spanish, list of units in English.</p> <p>Standard reference texts in circuit diagram in Italian, list of units in English.</p>
Additional delivery of charts in DXF format	<b>X20</b>	The charts for the cabinet unit are provided in DXF format. Delivery is by e-mail or on data medium in compressed form (Winzip).
<b>Measuring instruments</b>		
“Speed” instrument	<b>F20</b>	<p>Rotary coil instrument, black front frame, 96 mm x 96 mm</p> <p>Scale 0 to 150 %</p> <p>(for four-quadrant drive converters, the scale has a zero center point)</p>
“Armature voltage” instrument	<b>F30</b>	<p>Rotary coil instrument, black front frame, 96 mm x 96 mm</p> <p>(for four-quadrant drive converters, the scale has a zero center point)</p>
“Armature current” instrument	<b>F31</b>	<p>Rotary coil instrument, black front frame, 96 mm x 96 mm,</p> <p>scale 0 to 200 % rated DC current</p> <p>(for four-quadrant drive converters, the scale has a zero center point)</p>
“Line voltage field” instrument	<b>F40</b>	Rotary coil instrument, black front frame, 96 mm x 96 mm, scale 0 V to 540 V
“Field current” instrument	<b>F50</b>	Rotary coil instrument, black front frame, 96 mm x 96 mm, scale 0 A to rated field current
“Line voltage armature circuit” instrument	<b>F60</b>	Moving iron instrument, black front frame, 96 mm x 96 mm, voltage changeover switch CG8 (L1-L2, L2-L3, L1-L3)
“Line current” instrument	<b>F70</b> <b>F71</b> <b>F72</b> <b>F73</b> <b>F74</b>	<p>Rotary iron instrument, black front frame, 96 mm x 96 mm</p> <p>for line currents for units up to 60 A</p> <p>for line currents for units from 90 A to 280 A</p> <p>for line currents for units from 400 A to 600 A</p> <p>for line currents for units from 720 A to 1200 A</p> <p>for line currents for units from 1500 A to 2000 A</p>

1) Codes with **Y..** require information in plain text.

	Code	Description
<b>Other voltages, frequencies</b>		
Control option for a rated input voltage of 3-ph. 415 V 50 Hz	<b>F41</b>	SIMOREG cabinet units with drive converters for a rated input voltage of 400 V are used. Rated DC voltage: For cabinet units, single-/two-quadrant operation, 500 V For cabinet units, four-quadrant operation, 440 V
Control option for a rated input voltage of 3-ph. 440 V 50 Hz	<b>F44</b> <sup>1)</sup>	SIMOREG cabinet units with drive converters for a rated input voltage of 575 V are used. Rated DC voltage: For SIMOREG cabinet units, single-/two-quadrant operation, 520 V For SIMOREG cabinet units, four-quadrant operation, 460 V
Control voltage transformer for field supply	<b>V30</b>	A control voltage transformer must be supplied for the field supply since the customer cannot provide a 3-ph. 400 V auxiliary supply. The probability is very high with this option that an additional cabinet will be necessary. With a system voltage of 830 V and a direct current of 1500 A or 1900 A, exact adaptation to the customer data is essential.
Control voltage transformer for motor fan supply	<b>V40</b>	A control voltage transformer must be supplied for the motor fan since the customer cannot provide a 3-ph. 400 V control voltage. The probability is very high with this option that an additional cabinet will be necessary. With a system voltage of 830 V and a direct current of 1500 A or 1900 A, exact adaptation to the customer data is essential.
Control option for a rated input voltage of 3-ph. 460 V 50 Hz	<b>V46</b> <sup>1)</sup>	SIMOREG cabinet units with drive converters for a rated input voltage of 575 V are used. Rated DC voltage: For SIMOREG cabinet units, single-/two-quadrant operation, 550 V For SIMOREG cabinet units, four-quadrant operation, 480 V
Control option for a rated input voltage of 3-ph. 575 V 50 Hz	<b>V47</b>	SIMOREG cabinets with drive converters for a rated input voltage of 575 V are used. Rated DC voltage: For SIMOREG cabinet units, single-/two-quadrant operation, 690 V For SIMOREG cabinet units, four-quadrant operation, 600 V
Control option for a rated input voltage as specified in plain text (including the tolerance range) in the range between 3-ph. 90 V and 830 V 50 Hz ±10 %	<b>V48</b>	SIMOREG cabinet units with drive converters for the next higher rated input voltage are used. Rated DC voltage: For SIMOREG cabinet units, for single-/two-quadrant operation Rated unit input voltage x 1.35 x cos 5° x 0.9 For SIMOREG cabinet units for four-quadrant operation Rated unit input voltage x 1.35 x cos 30° x 0.9 Rated unit input voltage = phase-to-phase rated line supply voltage
Control option for a rated line supply frequency of 60 Hz	<b>V60</b>	

1) Retained for compatibility reasons.  
A SIMOREG cabinet unit 6RM70...6F.02-0 should be selected.  
These units are designed for operation with 460 V/60 Hz.

	Code	Description
<b>Freely-assignable function blocks</b>		
	<b>S00</b>	PIN code to enable freely-assignable function blocks in accordance with the Operating Instructions (refer to Catalog DA 21.1).
<b>Supplementary modules</b>		
T400 technology module 6DD1606-0AD0	<b>D30</b> <b>D31</b> <b>D32</b> <b>D45</b>	Technology module T400 installed. 1x local bus adapter LBA is also required in the drive converter. Without software, can be configured by the customer under SIMADYN® D with CFC With standard "axial winder" software <sup>1)</sup> With standard "angular synchronous control" software <sup>1)</sup> With standard "cross-cutter/shearing control" software See also Catalogs DA 99 and DA 21.1 for further information on the T400 technology board.
Technology module T300	<b>D33</b>	T300 technology module installed. 1x local bus adapter LBA is also required in the drive converter (refer to Catalog DA 21.1).
Technology module T100 + MS100	<b>D35</b>	Technology module T100 installed, including hardware description, EPROM MS100 including Manual in German is included in the scope of supply. 1x local bus adapter LBA is additionally required in the drive converter Manual is available in English/French/Italian/Spanish. (also refer to Catalog DA 21.1).
PROFIBUS interface (max. 2 per unit) <sup>2)</sup>	<b>D36</b>	CBP2 module for PROFIBUS installed, one PROFIBUS connector is included in the scope of supply. 1x local bus adapter LBA and adapter board ADB also required in the drive converter (also refer to Catalog DA 21.1).
CAN bus interface (max. 2 per unit) <sup>2)</sup>	<b>D37</b>	CBC board for CAN bus installed. 1x local bus adapter LBA and adapter board ADB additionally required (also refer to Catalog DA 21.1).
DeviceNet interface (max. 2 per unit) <sup>2)</sup>	<b>D38</b>	CBD board for DeviceNet installed. 1x local bus adapter LBA and adapter board ADB additionally required in the drive converter.
SIMOLINK® interface	<b>D39</b>	SLB board for SIMOLINK installed. 1x local bus adapter LBA and adapter board ADB additionally required in the drive converter (also refer to Catalog DA 21.1) <sup>3)</sup> .
EB1 terminal expansion module (max. 2 per unit) <sup>2)</sup>	<b>D40</b>	Expansion module EB1 for additional digital and analog inputs and outputs installed. 1x local bus adapter LBA and adapter board ADB additionally required in the drive converter (refer to Catalog DA 21.1) <sup>3)</sup> .
EB2 terminal expansion module (max. 2 per unit) <sup>2)</sup>	<b>D41</b>	Expansion module EB2 for additional digital and analog inputs and outputs installed. 1x local bus adapter LBA and adapter board ADB additionally required in the drive converter (refer to Catalog DA 21.1) <sup>3)</sup> .
LBA local bus adapter	<b>D42</b>	Backplane bus for the electronics bus installed. 1x required if the technology, communications or expansion modules are used (refer to Catalog DA 21.1).
ADB adapter board	<b>D43</b>	Adapter board to accept max. two communications and expansion modules installed (refer to Catalog DA 21.1).
SBP board	<b>D44</b>	SBP board for evaluation of a second pulse encoder installed. 1x local bus adapter LBA and adapter board ADB additionally required in the drive converter (also refer to Catalog DA 21.1) <sup>3)</sup> .
<b>Included in the scope of supply</b>		
K00	–	CUD2 terminal expansion board
D64	–	CD-ROM with Operating Instructions and DriveMonitor program in German, English, French, Italian, Spanish
OP1S	–	Operator panel mounted in cabinet door

1) Manual in line with the defined language option X..  
In the case of Spanish and Italian, the English manual is supplied.

2) Only one terminal expansion board can be used when using a technology board.

3) Cannot be used when using a technology board (T100, T300, T400).