Nols Muller

DC drives

Upgrade Kits DCV700/DCS500/DCS600 → DCS800

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Power and productivity
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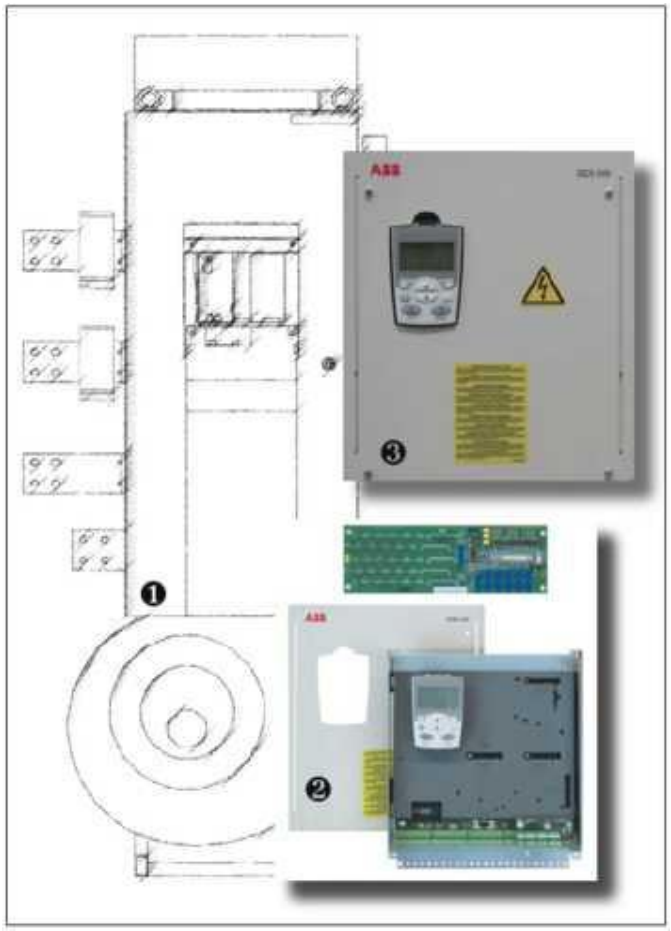
DCS800-R Upgrade Kits
Upgrade solutions for DCS500 / DCS800 drives



- Upgrade of DCS500 / DCS500B / DCS600 to DCS800
- Available for modules
  - DCS500 / DCV700 (based on SDCS-CON-1)
    - 680A … 5150A
    - Sizes: C2b, C3, C4
  - DCS500B / DCS600 (based on SDCS-CON-2)
    - 900A … 5200A
    - Sizes: A5, A6, A7
- Content of an Upgrade Kit (Standard)
  - Control board SDCS-CON-4 with SDCS-DSL-4
  - Electronics power supply board SDCS-POW-4
  - Measuring board SDCS-PIN-51 (only when needed)
  - DCS800 Control Panel
  - Cables
  - Mechanical parts for assembling

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DCS800-R Upgrade Kits
Availability overview for DCS500/DCV700

Converter type	Dimensions H x W x D [mm]	Weight [kg]	Clearances top/bottom/side [mm]	Construct. type	Power loss at 500V P_V [kW]	Fan connection	Semiconductor Fuses
DCS50x-0025-y1	420x273x195	7.1	150x100x5	C1	< 0.2	230 V/1 ph	extern
DCS50x-0050-y1	420x273x195	7.2	150x100x5	C1	< 0.2	230 V/1 ph	extern
DCS50x-0050-61	420x273x195	7.6	150x100x5	C1	-	230 V/1 ph	extern
DCS50x-0075-y1	420x273x195	7.6	150x100x5	C1	< 0.3	230 V/1 ph	extern
DCS50x-0100-y1	469x273x228	11.5	250x150x5	C1	< 0.5	230 V/1 ph	extern
DCS50x-0110-61	469x273x228	11.5	250x150x5	C1	-	230 V/1 ph	extern
DCS50x-0140-y1	469x273x228	11.5	250x150x5	C1	< 0.6	230 V/1 ph	extern
DCS50x-0200-y1	505x273x361	22.3	250x150x5	C2	< 0.8	230 V/1 ph	extern
DCS50x-0250-y1	505x273x361	22.3	250x150x5	C2	< 1.0	230 V/1 ph	extern
DCS50x-0270-61	505x273x361	22.8	250x150x5	C2	-	230 V/1 ph	extern
DCS50x-0350-y1	505x273x361	22.8	250x150x5	C2	< 1.3	230 V/1 ph	extern
DCS50x-0450-y1	505x273x361	28.9	250x150x10	C2	< 1.5	230 V/1 ph	extern
DCS50x-0520-y1	505x273x361	28.9	250x150x10	C2	< 1.8	230 V/1 ph	extern
DCS50x-0700-y1	652x273x384	57	250x150x10	C2	< 2.5	230 V/1 ph	extern
DCS50x-0900-y1	1493x548x447	150	300x100x20	C3	< 4.8	400/690 V/3 ph	intern
DCS50x-1200-y1	1493x548x447	150	300x100x20	C3	< 6.2	400/690 V/3 ph	intern
DCS50x-1500-y1	1493x548x447	150	300x100x20	C3	< 6.3	400/690 V/3 ph	intern
DCS50x-2000-y1	1493x548x447	150	300x100x20	C3	< 8.2	400/690 V/3 ph	intern
DCS50x-2050-y1	2330x820x624	350	to be installed in cubicle	C4	-	400/690 V/3 ph	intern
DCS50x-2500-y1	2330x820x624	350		C4	< 12	400/690 V/3 ph	intern
DCS50x-2650-y1	2330x820x624	350		C4	-	400/690 V/3 ph	intern
DCS50x-3200-y1	2330x820x624	350		C4	-	400/690 V/3 ph	intern
DCS50x-3300-y1	2330x820x624	350		C4	< 15	400/690 V/3 ph	intern
DCS50x-4000-y1	2330x820x624	350		C4	< 16	400/690 V/3 ph	intern
DCS50x-4750-y1	2330x820x624	350		C4	-	400/690 V/3 ph	intern
DCS50x-5150-y1	2330x820x624	350		C4	< 20	400/690 V/3 ph	intern

DCS800-R Upgrade kits are only available for yellow highlighted converter types

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DCS800-R Upgrade Kits
Availability overview for DCS500B/DCS600

Converter type	Dimensions H x W x D [mm]	Weight [kg]	Clearances top/bottom/side [mm]	Construct. type	Power loss at 500V P_V [kW]	Fan connection	Semiconductor Fuses
DCS50xB0025-y1	420x273x195	7.1	150x100x5	C1a	< 0.2	230 V/1 ph	external
DCS50xB0050-y1	420x273x195	7.2	150x100x5	C1a	< 0.2	230 V/1 ph	external
DCS50xB0050-61	420x273x195	7.6	150x100x5	C1a	-	230 V/1 ph	external
DCS50xB0075-y1	420x273x195	7.6	150x100x5	C1a	< 0.3	230 V/1 ph	external
DCS50xB0100-y1	469x273x228	11.5	250x150x5	C1b	< 0.5	230 V/1 ph	external
DCS50xB0110-61	469x273x228	11.5	250x150x5	C1b	-	230 V/1 ph	external
DCS50xB0140-y1	469x273x228	11.5	250x150x5	C1b	< 0.6	230 V/1 ph	external
DCS50xB0200-y1	505x273x361	22.3	250x150x5	C2a	< 0.8	230 V/1 ph	external
DCS50xB0250-y1	505x273x361	22.3	250x150x5	C2a	< 1.0	230 V/1 ph	external
DCS50xB0270-61	505x273x361	22.8	250x150x5	C2a	-	230 V/1 ph	external
DCS50xB0350-y1	505x273x361	22.8	250x150x5	C2a	< 1.3	230 V/1 ph	external
DCS50xB0450-y1	505x273x361	28.9	250x150x10	C2a	< 1.5	230 V/1 ph	external
DCS50xB0520-y1	505x273x361	28.9	250x150x10	C2a	< 1.8	230 V/1 ph	external
DCS50xB0680-y1	652x273x384	42	250x150x10	C2b	< 1.6	230 V/1 ph	external
DCS50xB0820-y1	652x273x384	42	250x150x10	C2b	< 2.0	230 V/1 ph	external
DCS50xB1000-y1	652x273x384	42	250x150x10	C2b	< 2.5	230 V/1 ph	external
DCS50xB0903-y1	1050x510x410	110	300x100x20	A5	-	230 V/1-ph	internal
DCS50xB1203-y1	1050x510x410	110	300x100x20	A5	< 5.2	230 V/1-ph	internal
DCS50xB1503-y1	1050x510x410	110	300x100x20	A5	< 5.5	230 V/1-ph	internal
DCS50xB2003-y1	1050x510x410	110	300x100x20	A5	< 6.6	230 V/1-ph	internal
DCS50xB1903-81	1750x460x410	180	③ x0x50	A6	-	400...500 V/3-ph	
DCS50xB2053-y1	1750x460x410	180	③ x0x50	A6	< 7.9	at y = 4, 5, 8	internal
DCS50xB2503-y1	1750x460x410	180	③ x0x50	A6	< 9.3	500...690 V/3-ph	
DCS50xB3003-y1	1750x460x410	180	③ x0x50	A6	< 11.9	at y = 6, 7	
DCS50xB2053-y1L①	1750x770x570	315	to be installed in cubicle	A7	-	400/690 V/3-ph	
DCS50xB2603-y1L①	1750x770x570	315		A7	-	400/690 V/3-ph	internal
DCS50xB3203-y1L①	1750x770x570	315		A7	-	400/690 V/3-ph	
DCS50xB3303-y1L①	1750x770x570	315		A7	< 15	400/690 V/3-ph	
DCS50xB4003-y1L①	1750x770x570	315		A7	< 16	400/690 V/3-ph	
DCS50xB4803-y1L①	1750x770x570	315		A7	-	400/690 V/3-ph	
DCS50xB5203-y1L①	1750x770x570	315		A7	< 20	400/690 V/3-ph	

DCS800-R Upgrade kits are only available for yellow highlighted converter types

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DCS800-R Upgrade Kits
Requirements and Design conditions for Upgrades

Requirements

- Converter modules DCS500, DCS500B (except Unitrol), DCS600
- DC Voltage 400VAC up to 1000 VAC
- Nominal current 680A up to 5200A
- Sufficient physical condition of the existing module

Design conditions

- Max. 24VDC control voltage for SDCS-CON-4 instead of 48VDC
- Upgrades DCS600 -> DCS800 require SDCS-COM-8x board for fiber optic connections
- Old field exciters have to be exchanged due to DCSLink Communication.
- Line chokes can be reused if field settings remain unchanged
- I/O extension board SDCS-IOE-1 has to be exchanged by RDIO-01 and RAIO-01
- New commissioning tool DriveWindow 2.2 or higher is needed

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DCS800-R Upgrade Kits
Supported and not supported parts

Supported parts

- I/O board SDCS-IOB-2x
- I/O board SDCS-IOB-3,
- control panel CDP 312 xx via SDCS-COM-81 or SDCS-COM-82 and
- Nxxx fieldbus adapter used with DCS 500B or DCS 600 via SDCS-COM-82

Not supported parts

- all old field exciters for DCS 500, DCS 500B and DCS 600,
- DCS-IOE-1
- control panels CDP 310 and CDP 311
- Nxxx fieldbus adapter used with DCS 500
- APC1 used for DCV 700
- Reuse of APC2 requires modifications in the control logic and additional hardware
- All old tools like DDCTool, CMTTool, DriveWindow 1.x and DriveWindow 2.1

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DCS800-R Upgrade Kits
Conditions caused by the application

- In case of an additional application three scenarios are possible
  - Application program located in the APC1 or APC2 of a DCV 700.
    - APC1: No interface available
    - APC2: Optical connection board YPQ112 is to add between APC2 and SDCS-COM-81 and control logic is to modify
  - The application program is as function blocks in the DCS 500 or DCS 500B. → DriveAP Programmimg or CoDeSys Programming
  - The application program is located in the AMC board of a DCS 600 see APPLIC NAME (4.03) → CoDeSys Programming
- Master-follower configurations
  - Master-follower via SDCS-COM-8 should be used for upgrading a DCS 600. The fiber optic cable can be reused.
  - Master-follower via DCSLink should be used for upgrading a DCS 500 or DCS 500B.
- Hard-Parallel configuration
  - Additional engineering is needed. Please contact your local ABB .

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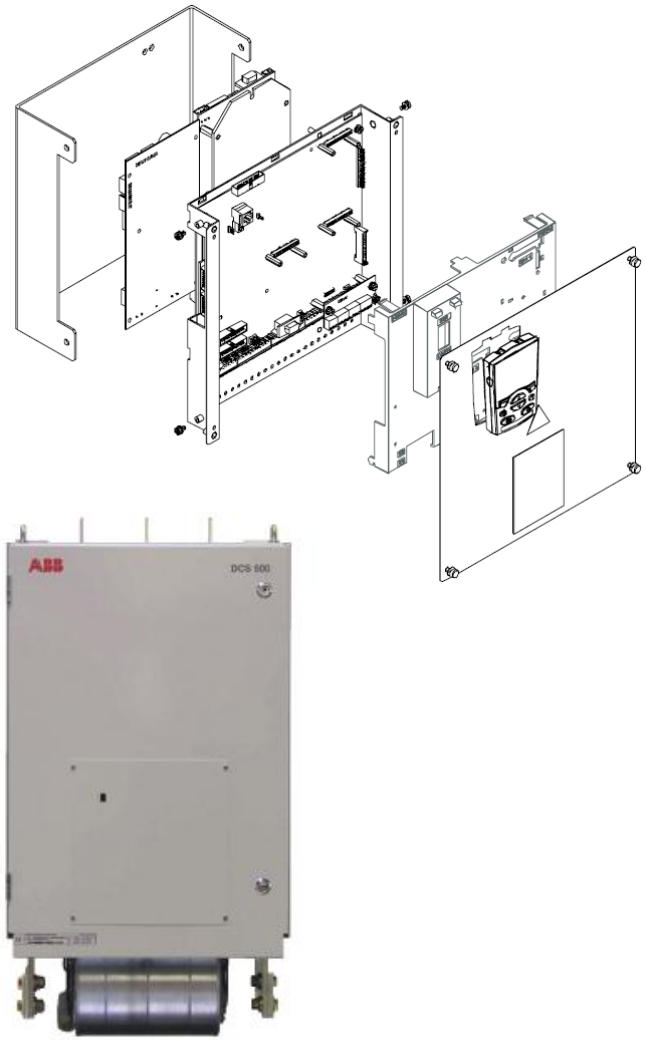
DCS800-R Upgrade Kits
Upgrade size A5 to D5



Article Codes

DCS800-R00-9305

DCS800-R00-9306 (with field exciter)

Included parts

- SDCS-POW-4
- FEX-425-Int (only DCS800-R00-9306)
- electronic tray
- SDCS-CON-4 with SDCS-DSL-4
- covers
- DCS800 Control Panel
- SDCS-PIN-51
- all boards are coated

Affected modules:

Converter type DCS 500B	Converter type DCS 600
DCS50xB0903-y1	DCS60x-0903-y1
DCS50xB1203-y1	DCS60x-1203-y1
DCS50xB1503-y1	DCS60x-1503-y1
DCS50xB2003-y1	DCS60x-2003-y1

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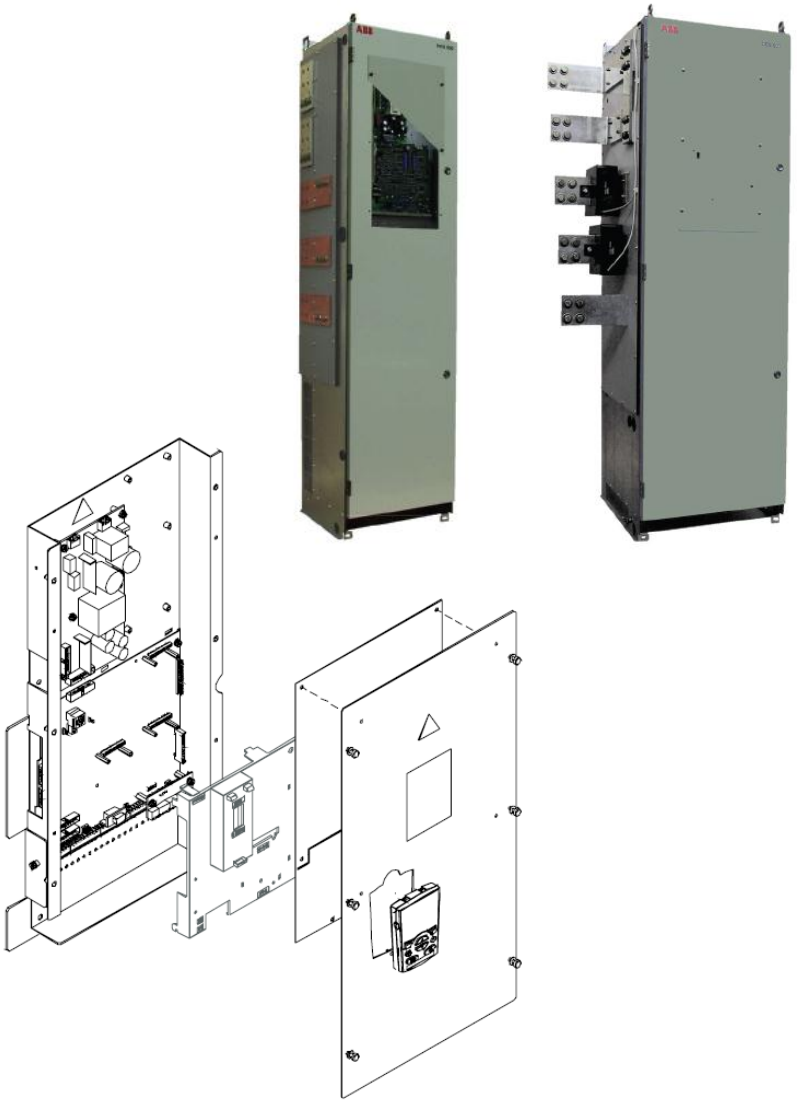
DCS800-R Upgrade Kits
Upgrade size A6/A7 to D6/D7



Article Code

DCS800-R00-9405

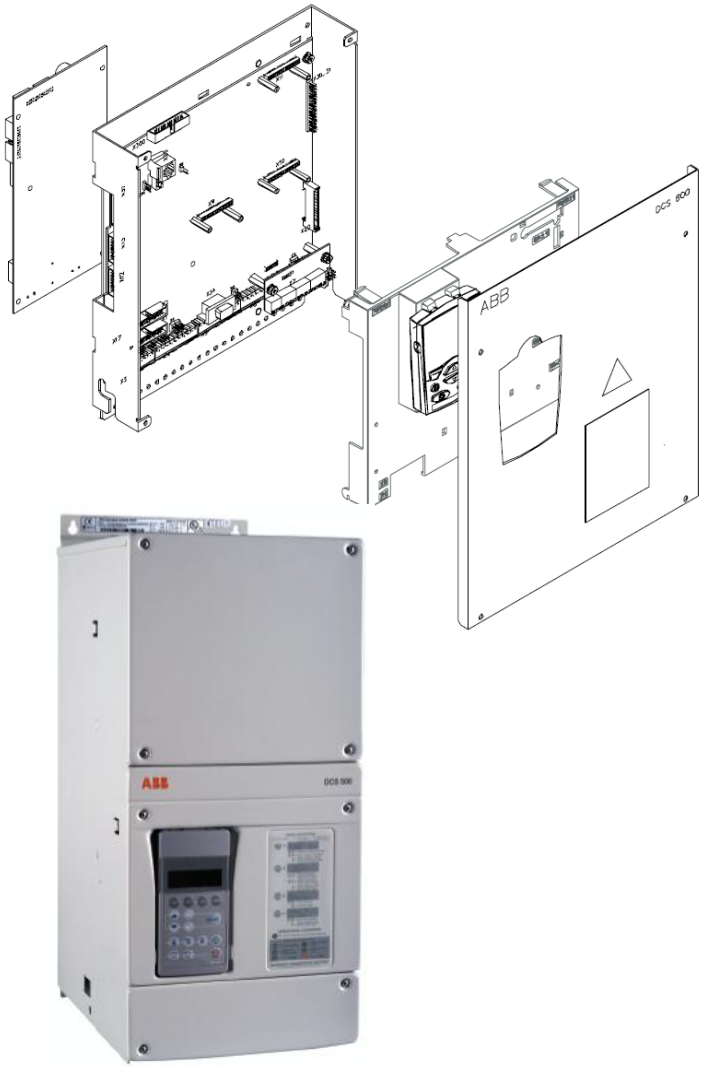
Included parts

- SDCS-POW-4
- electronic tray
- SDCS-CON-4 with SDCS-DSL-4
- SDCS-PIN-51
- covers
- DCS800 Control Panel
- all boards are coated

Affected modules:

Converter type DCS 500B	Converter type DCS 600
DCS50xB1903-y1	DCS60x-1903-y1
DCS50xB2053-y1	DCS60x-2053-y1
DCS50xB2503-y1	DCS60x-2503-y1
DCS50xB3003-y1	DCS60x-3003-y1
DCS50xB2053-y1	DCS60x-2053-y1
DCS50xB2603-y1	DCS60x-2603-y1
DCS50xB3203-y1	DCS60x-3203-y1
DCS50xB3303-y1	DCS60x-3303-y1
DCS50xB4003-y1	DCS60x-4003-y1
DCS50xB4803-y1	DCS60x-4803-y1
DCS50xB5203-y1	DCS50x-5203-y1

DCS800-R Upgrade Kits
Upgrade size C2b to D5



Article Code

DCS800-R00-9005

Included parts

- SDCS-POW-4
- electronic tray
- SDCS-CON-4 with SDCS-DSL-4
- covers
- DCS800 Control Panel
- all boards are coated

Affected modules:

Converter type DCS 500B	Converter type DCS 600
DCS50x-0680-y1	DCS60x-0680-y1
DCS50x-0820-y1	DCS60x-0820-y1
DCS50x-1000-y1	DCS60x-1000-y1

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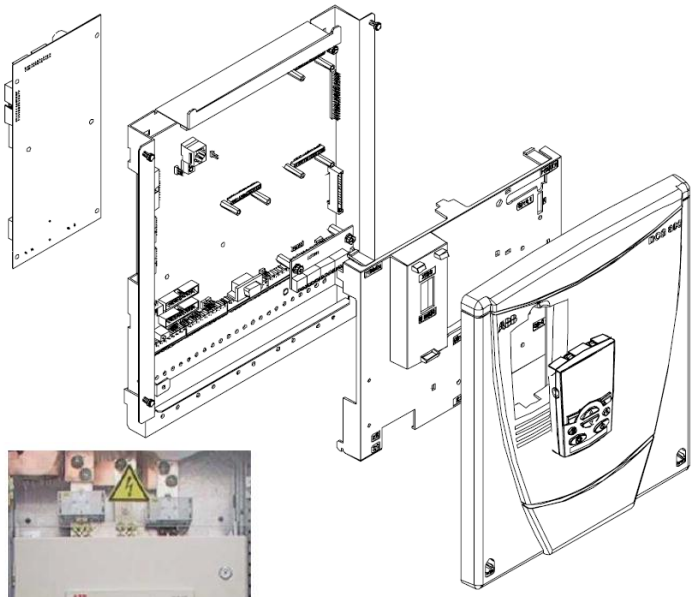
DCS800-R Upgrade Kits
Upgrade size C3 to D6



Article Code

DCS800-R00-9205

Included parts

- SDCS-POW-4
- electronic tray
- SDCS-CON-4 with SDCS-DSL-4
- SDCS-PIN-51
- covers
- DCS800 Control Panel
- all boards are coated

Affected modules:

Converter type DCS 500B	Converter type DCS 600
DCS50xB0900-y1	DCS60x-0900-y1
DCS50xB1200-y1	DCS60x-1200-y1
DCS50xB1500-y1	DCS60x-1500-y1
DCS50xB2000-y1	DCS60x-2000-y1

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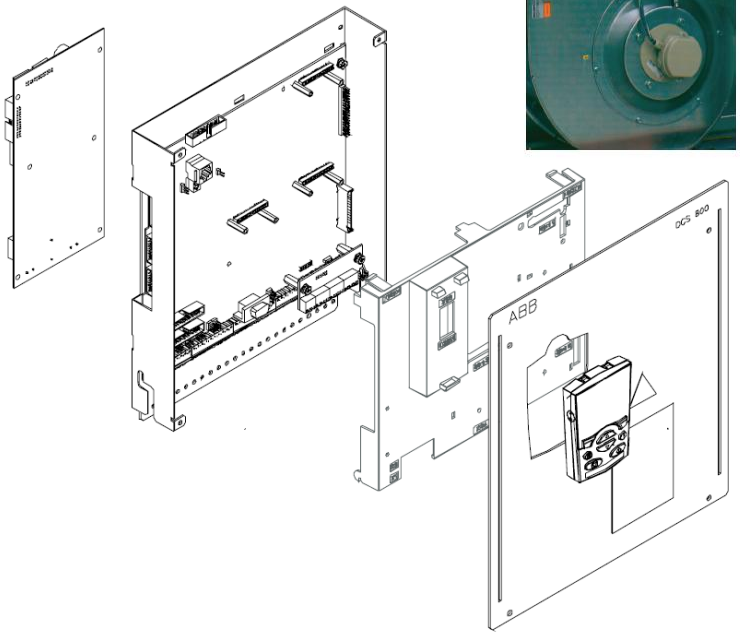
DCS800-R Upgrade Kits
Upgrade size C4 to D7



Article Code

DCS800-R00-9105

Included parts

- SDCS-POW-4
- electronic tray
- SDCS-CON-4 with SDCS-DSL-4
- SDCS-PIN-51
- covers
- DCS800 Control Panel
- all boards are coated

Affected modules:

Converter type DCS 500B	Converter type DCS 600
DCS50xB2050-y1	DCS60x-2050-y1
DCS50xB2500-y1	DCS60x-2500-y1
DCS50xB2650-y1	DCS60x-2650-y1
DCS50xB3200-y1	DCS60x-3200-y1
DCS50xB3300-y1	DCS60x-3300-y1
DCS50xB4000-y1	DCS60x-4000-y1
DCS50xB4750-y1	DCS60x-4750-y1
DCS50xB5150-y1	DCS50x-5150-y1

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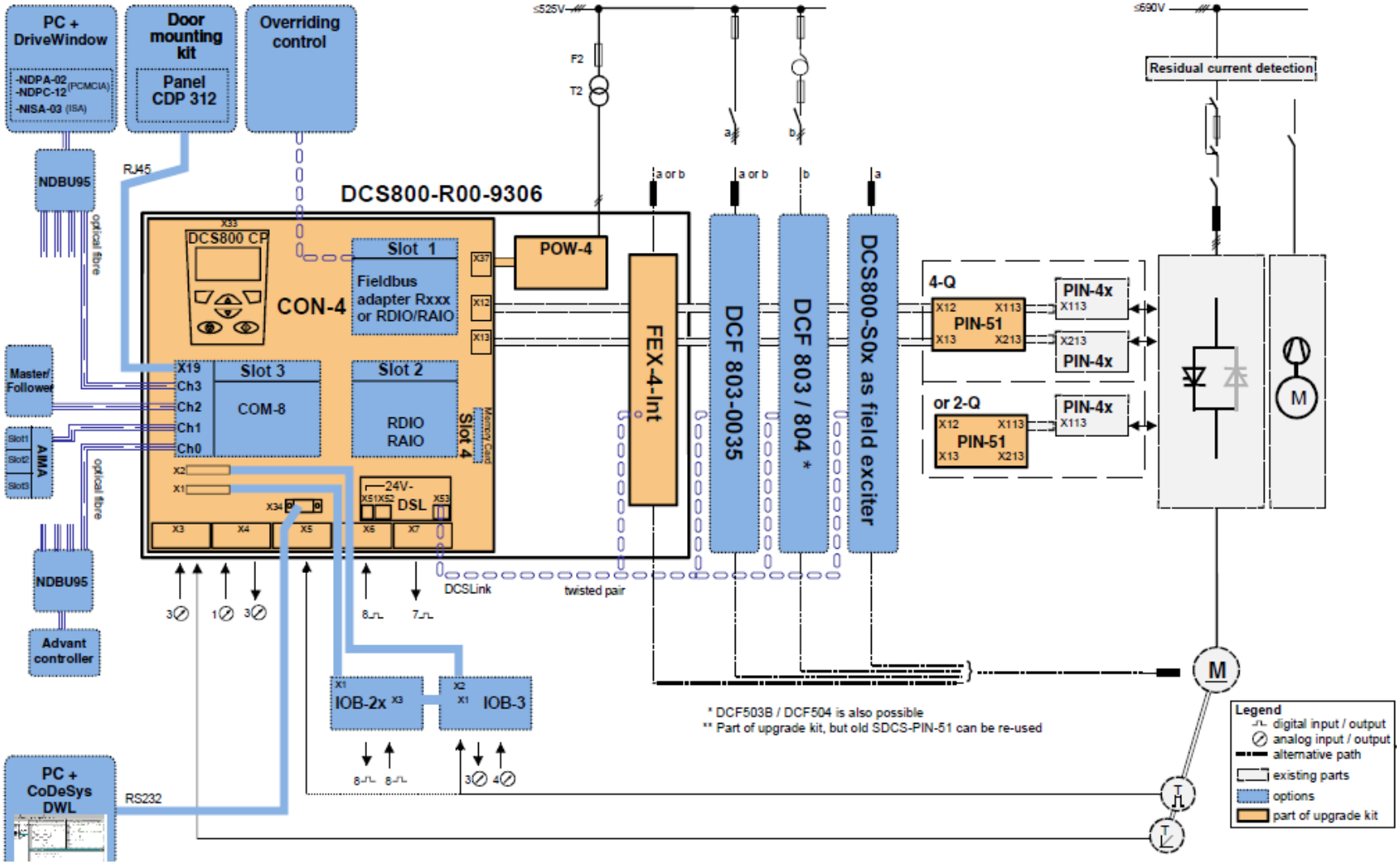
DCS800-R Upgrade Kits
Overview Parts Upgrade Kit



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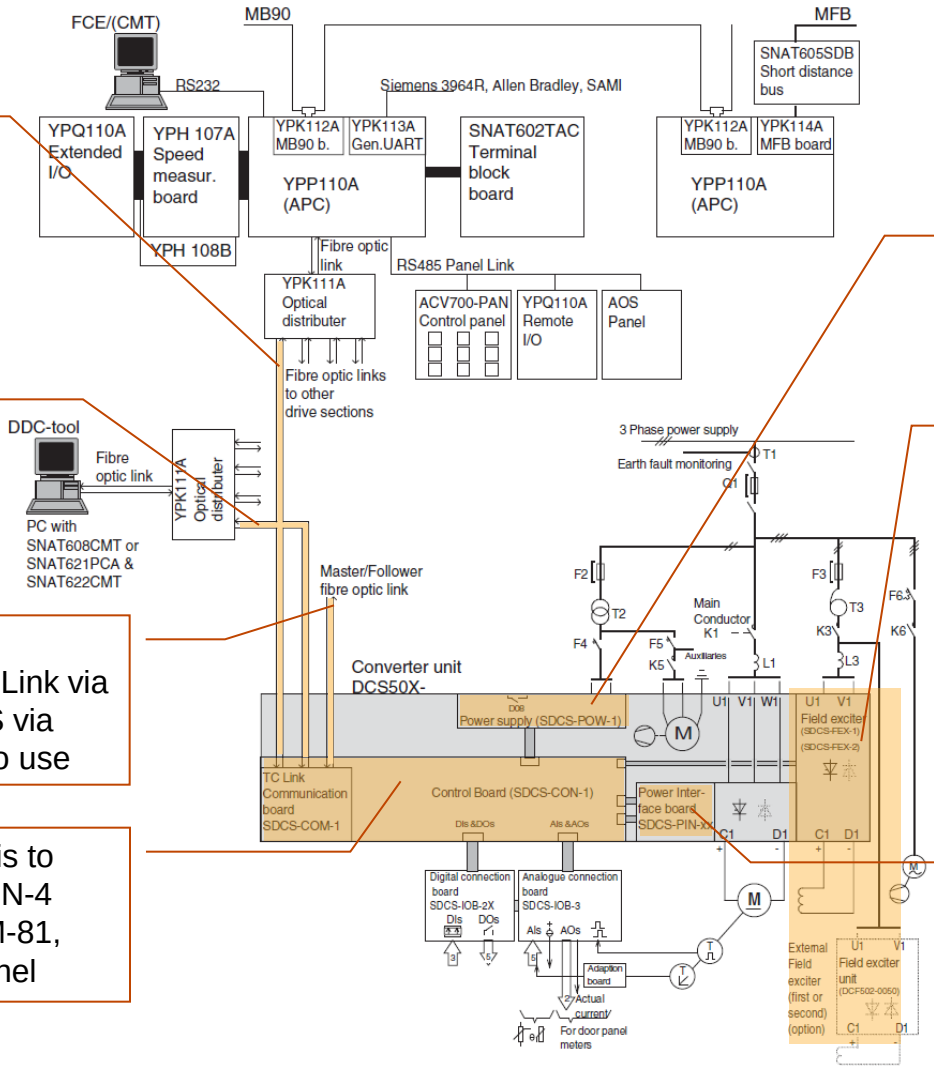
DCS800-R Upgrade Kits
DCV700 System Structure

For the communication with overriding control system additional interface devices are to implement.
→See next slides

For drive diagnostic SDCS-COM-81 with DriveWindow is to use

For Master-Follower communication DCS-Link via DCS-DSL-4 or DDCS via SDCS-COM-81 are to use

SDCS-CON-1 board is to replace by SDCS-CON-4 including SDCS-COM-81, SDCS-DSL-4 and panel



SDCS-POW-1 is to be replaced by SDCS-POW-4

To be replaced by a new field exciter like:

DCF503B, DCF803, FEX4-Int

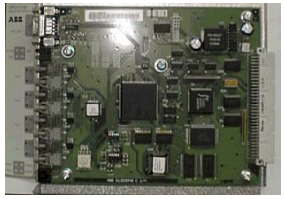
In case of frame size C3 the existing SDCS-PIN-51 is to be replaced by a new SDCS-PIN-51

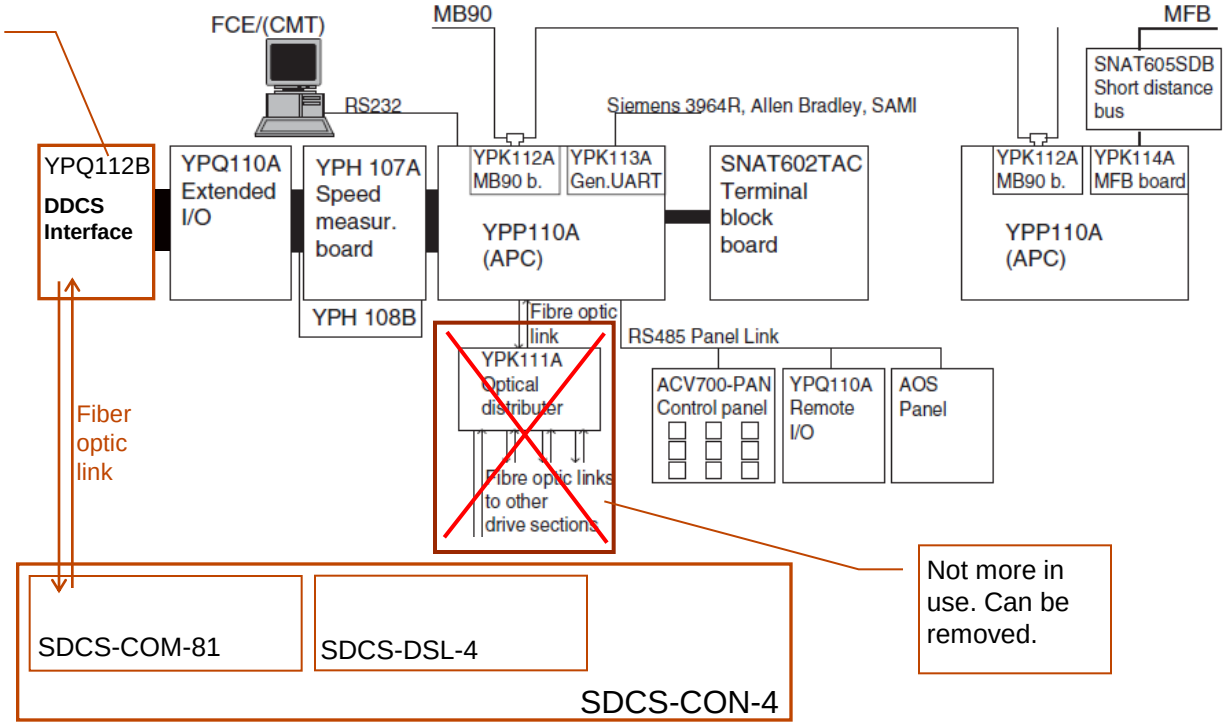
DCS800-R Upgrade Kits

How to connect existing control system to SDCS-CON-4 (1/3)

Extension of APC2 controller with a DDCS interface adapter.

New interface board YPQ112B to install into the existing APC rack.





Please note:

Installation of the YPQ112B interface adapter requires small modifications in the APC control program. Availability of the right software tools and programming skills for APC controller are to ensure.

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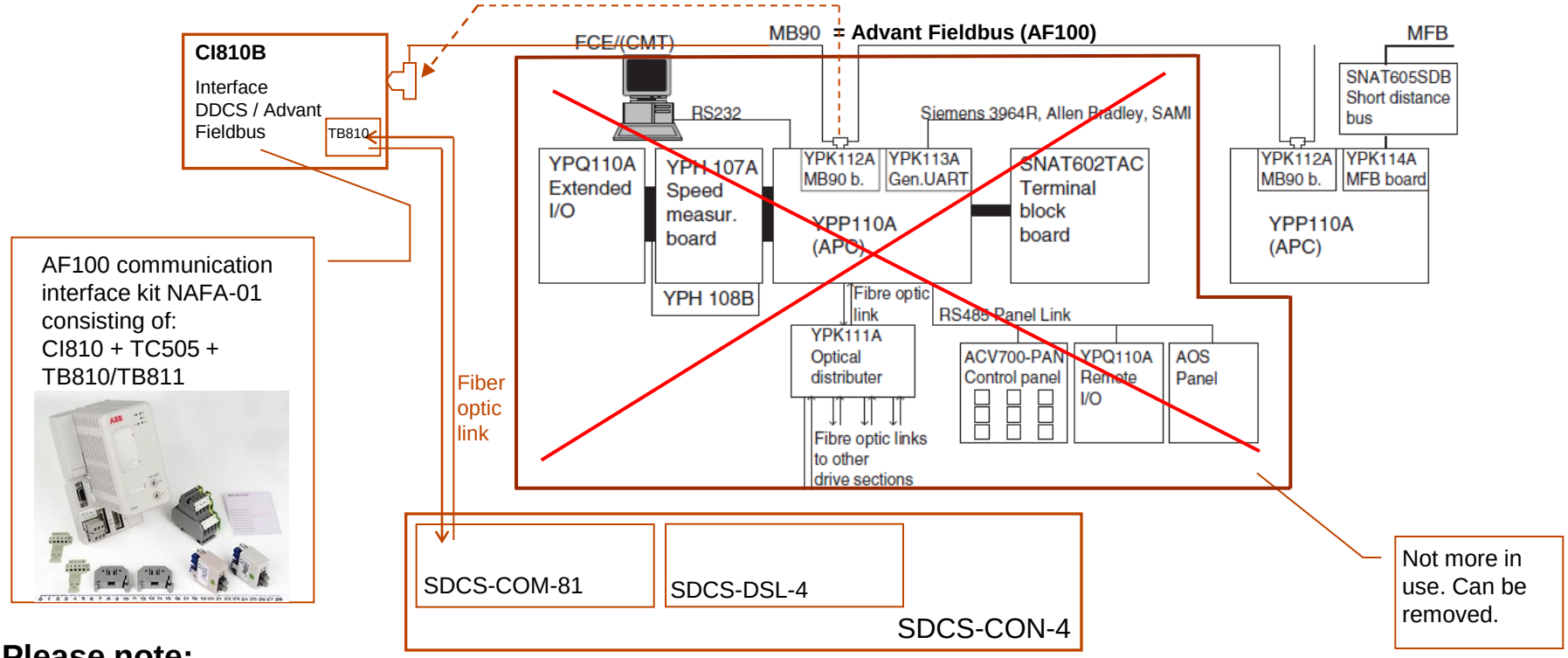
DCS800-R Upgrade Kits

How to connect existing control system to SDCS-CON-4 (2/3)

Removal of APC2 and direct connection to the overriding system via AF100 (MB90)



Please note:

Installation of the CI810B communication interface requires small modifications in the overriding control system e.g. AC450. Furthermore the removal of the APC controller requires adaption of the existing APC software program either into the overriding system or into the drive via DriveAP or CoDeSys. Availability of the right software tools and programming skills are to ensure.

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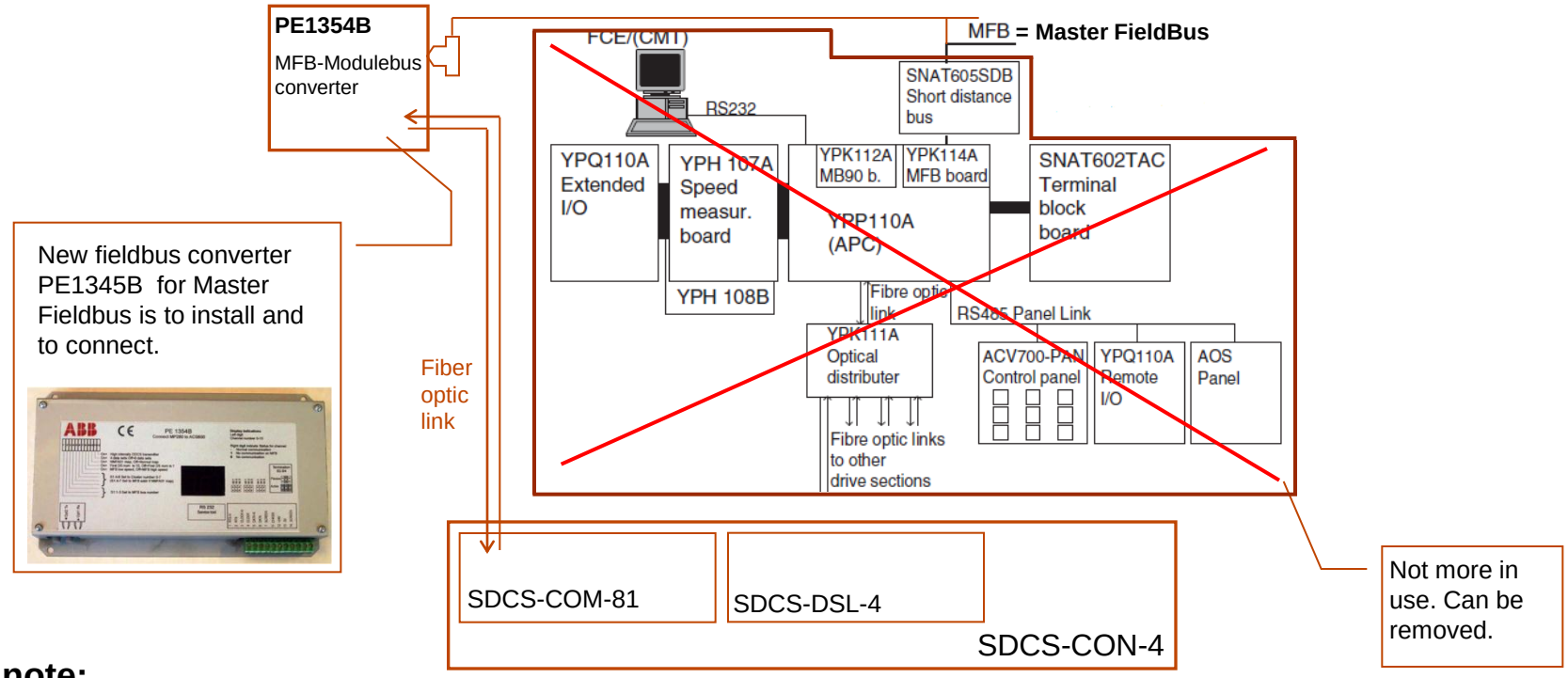
DCS800-R Upgrade Kits
How to connect existing control system to SDCS-CON-4 (3/3)

Removal of APC2 and direct connection to the overriding system via MFB (MasterFieldbus)



Please note:

Installation of the PE1354B fieldbus converter requires small modifications in the overriding control system e.g. MP200. Furthermore the removal of the APC controller requires adaption of the existing APC software program either into the overriding system or into the drive via DriveAP or CoDeSys. Availability of the right software tools and programming skills are to ensure.

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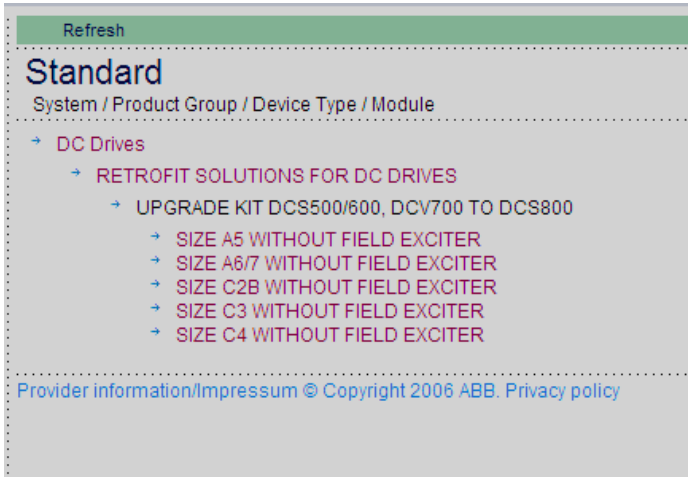
DCS800-R Upgrade Kits
Upgrade Kits - Additional Information

- Manual with detailed information
  - For further information regarding hardware, assembling and commissioning see Manual 3ADW00256R0101
- Parameter settings
  - After upgrading parameters have to be adjusted due to different parameter groups in DCS500/DCS600 and DCS800.
  - For parameter comparison see document 3ADW000405R0201
- Sales Chanel
  - Product Sales and PartsOnline



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