DCS800 Demo Unit

DCS800
The next generation

ABB

Commissioning instructions using DriveWindow or DriveWindow Light

General

The mains must be connect to phase L1 and L2.
The displayed line voltage is 70% of the actual line voltage.
The overspeed relay trips at 2400 rpm with fault message **F512 MainsLowVolt**.

Set default (factory) settings

Before starting all parameters **must** be set to default (factory):

Parameter	Value
ApplMacro (99.08)	**Factory** and then
ApplRestore (99.07)	**Yes**

Adapt the drive

M1MotNomVolt (99.02)*	60 V or 80 V depending on the used motor
M1NomCur (99.03)*	4 A
M1BaseSpeed (99.04)	1500 rpm
NomMainsVolt (99.10)*	150 V (for 230 VAC single phase) or 75 V (for 115 VAC single phase)
M1NomFldCur (99.11)	0.31 A
Ref1Sel (11.03)	**AI1**
IndexAO1 (15.01)	104
IndexAO2 (15.06)	117
USI Sel (16.09)	**Extended**
M1SpeedMin (20.01)	-1500 rpm
M1SpeedMax (20.02)	1500 rpm
M1CurLimBrdg1 (20.12)*	50 %
M1CurLimBrdg2 (20.13)*	-50 %
ArmAlphaMax (20.14)*	165° el
ArmAlphaMin (20.15)*	0° el
AccTime1 (22.01)	5 s
DecTime1 (22.02)	5 s
KpS (24.03)	1
TiS (24.09)	1000 ms
ArmOvrVoltLev (30.08)*	160 %
ArmOvrCurLev (30.09)*	120 %
M1OvrSpeed (30.16)	2000 rpm
DispParam1Sel (34.01)	104
CtrlModeSel (43.05)	**FeedFwdRef**
RevDly (43.14)*	2 ms
RevMode (43.16)*	**Hard**
M1OperModeFex4 (45.22)*	**1-phase**
ZeroCurTimeOut (97.19)*	30 ms
HW FiltUDC (97.26)*	**FilterOn**

Autotunings

For all autotunings use ServiceMode (99.06)

* this setting is required for a single-phase demo unit.

Commissioning instructions using DriveWindow Light and Startup Assistant

General

The mains must be connect to phase L1 and L2.
The displayed line voltage is 70% of the actual line voltage.
The overspeed relay trips at 2400 rpm with fault message **F512 MainsLowVolt**.

Set default (factory) settings

Before starting all parameters **must** be set to default (factory):

Parameter	Value
ApplMacro (99.08)	**Factory** and then
ApplRestore (99.07)	**Yes**

Adapt the drive using DriveWindow Light

Ref1Sel (11.03)	**AI1**
USI Sel (16.09)	**Extended**
ArmAlphaMax (20.14)*	165° el
ArmAlphaMin (20.15)*	0° el
KpS (24.03)	1
TiS (24.09)	1000 ms
ArmOvrVoltLev (30.08)*	160 %
DispParam1Sel (34.01)	104
CtrlModeSel (43.05)	**FeedFwdRef**
RevDly (43.14)*	2 ms
RevMode (43.16)*	**Hard**
M1OperModeFex4 (45.22)*	**1-phase**
ZeroCurTimeOut (97.19)*	30 ms
HW FiltUDC (97.26)*	**FilterOn**

Continue adapting the drive using the Startup Assistant

Start the Startup Assistant by pressing the *Wizard* button in DriveWindow Light.

Assistant menu

Press the *Start* button to run the basic assistants.

1. Name plate data

M1MotNomVolt (99.02)*	60 V or 80 V depending on the used motor
M1NomCur (99.03)*	4 A
M1BaseSpeed (99.04)	1500 rpm
NomMainsVolt (99.10)*	150 V (for 230 VAC single phase) or 75 V (for 115 VAC single phase)
M1NomFldCur (99.11)	0.31 A
M1SpeedMin (20.01)	-1500 rpm
M1SpeedMax (20.02)	1500 rpm
ArmOvrCurLev (30.09)*	120 %
M1OvrSpeed (30.16)	2000 rpm

2. Macro assistant

Press the *Advanced* and *Edit parameters* buttons to change the I/O settings.

AO settings

IndexAO1 (15.01)	104
IndexAO2 (15.06)	117

* this setting is required for a single-phase demo unit.

3. Autotuning field current controller

Press the *Start* button, the results of the tuning will be shown in *Changed parameters*.

4. Autotuning armature current controller

M1CurLimBrdg1 (20.12)*	50 %
M1CurLimBrdg2 (20.13)*	-50 %

Press the *Start* button, the results of the tuning will be shown in *Changed parameters*.

5. Speed feedback assistant

Press the *Start* button and follow the instructions.
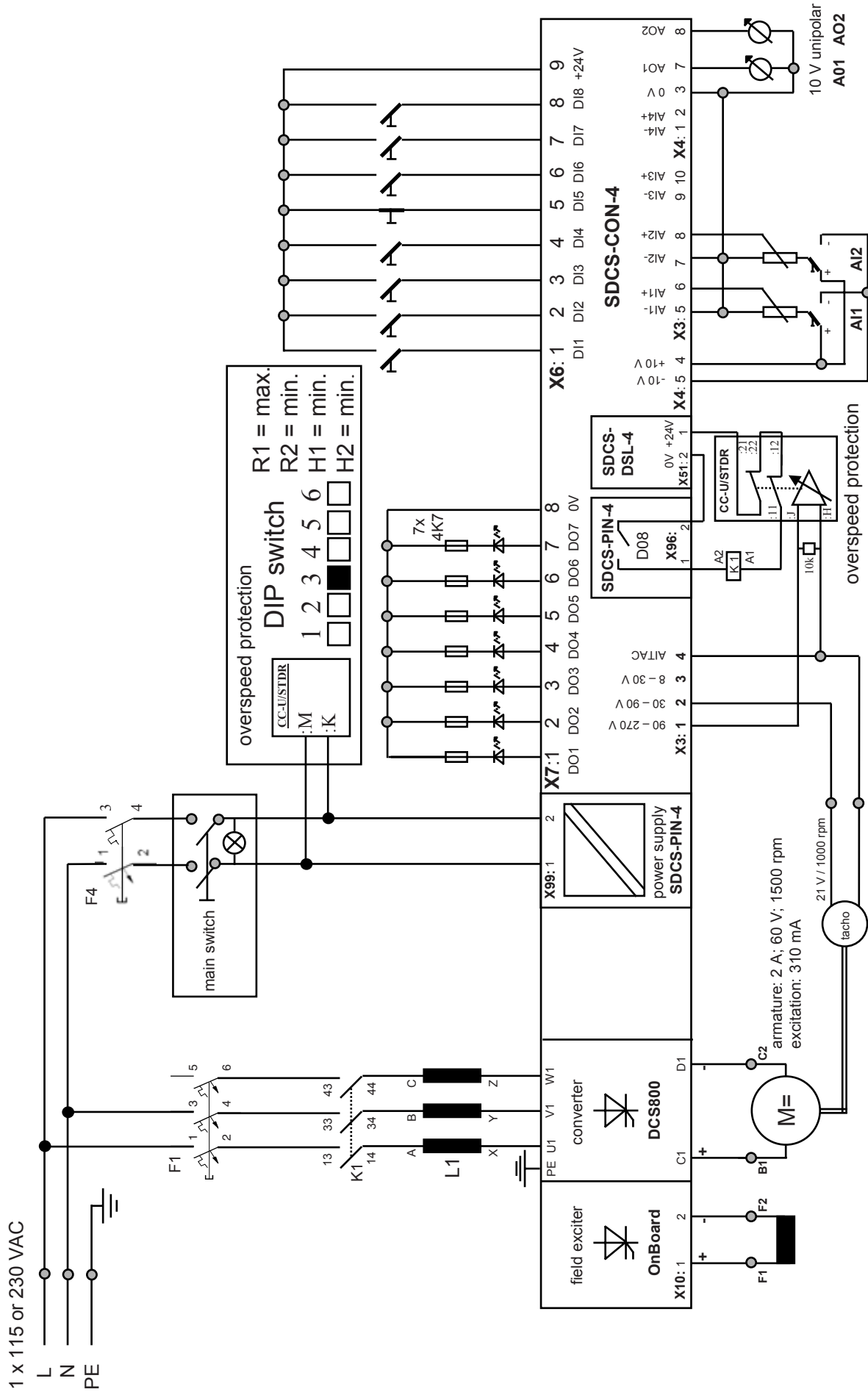
6. Autotuning speed controller

AccTime1 (22.01)	5 s
DecTime1 (22.02)	5 s

Use the slider to adjust the step response and press the *Start* button, the results of the tuning will be shown in *Changed parameters*.

7. Field weakening assistant

Press the *Start* button, the results of the tuning will be shown in *Changed parameters*.

DCS800 Demo Unit single-phase

DCS800 Demo Unit Dimensions and Weight

Dimensions		
H	W	D
680	360	350 mm
25.1	14.2	13.7 inch
Weight: 36 kg / 79.2 lbs		

DCS800 family

DCS800-S Modules
The versatile drive for any application

20 … 5,200 A_{DC}
0 … 1,160 V_{DC}
230 … 1,000 V_{AC}
IP00

- Compact
- Highest power ability
- Simple operation
- Comfortable assistants, e.g. for commissioning or fault tracing
- Scalable to all applications
- Free programmable by means of integrated IEC61131-PLC

DCS800-A Enclosed Converters
Complete drive solutions

20 … 20,000 A_{DC}
0 … 1,500 V_{DC}
230 … 1,200 V_{AC}
IP21 – IP54

- Individually adaptable to customer requirements
- User-defined accessories like external PLC or auto-mation systems can be included
- High power solutions in 6- und 12-pulse up to 20,000 A, 1,500 V
- In accordance to usual standards
- Individually factory load tested
- Detailed documentation

DCS800-E Series
Pre-assembled drive-kits

20 … 2,000 A_{DC}
0 … 700 V_{DC}
230 … 600 V_{AC}
IP00

- DCS800 Module with all necessary accessories mounted and fully cabled on a panel
- Very fast installation and commissioning
- Squeezes shut-down-times in revamp projects to a minimum
- Fits into Rittal cabinets
- Compact Version up to 450 A and Vario Version up to 2,000 A

DCS800-R Rebuild Kit
Digital control-kit for existing powerstacks

20 … 20,000 A_{DC}
0 … 1,160 V_{DC}
230 … 1,200 V_{AC}
IP00

- Proven long life components are re-used, such as power stacks, (main) contactors, cabinets and cabling / busbars, cooling systems
- Use of up-to-date communication facilities
- Increase of production and quality
- Very cost-effective solution
- Open Rebuild Kits for nearly all existing DC-drives
- tailor-made solutions for…
  - BBC PxD
  - ASEA Tyrak
  - BBC SZxD
  - other manufacturers

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