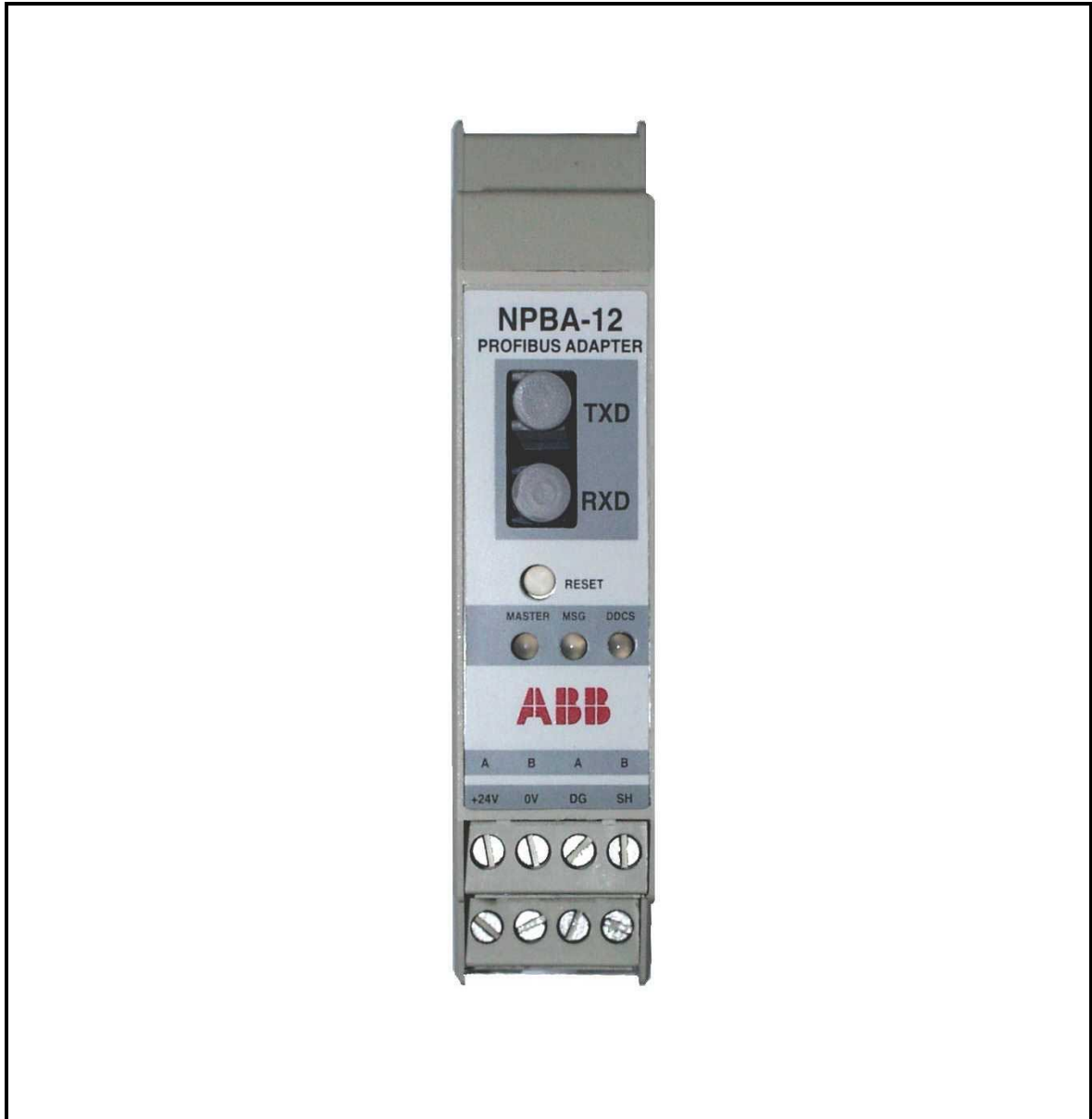


Fieldbus Adapter with DC-Drives


DCS 400, DCS 500B, DCS 600

PROFIBUS Adapter Module

NPBA-12



| | | |
|--------------------------------|-------|---|
| Contents of the package | 1 pc | PROFIBUS Adapter Module, Type NPBA-12 |
| | 2 pcs | Fibre optic cables (2m) for connecting the adapter to the drive |
| | 1 pc | Fieldbus adapter with DC-Drives (this document) |

 **STOP!** Take into account the **Safety Instructions** in the appropriate documentations!

Related Documentation There are two parts of documentation.

The documentation is available via internet :

www.abb.com/motors&drives

after selecting **DC-Drives**, then **Downloads**
and then the converter type (DCS 400, DCS 500 or DCS 600) you will find “**Serial communication**”.

Fieldbus specific documentation

Description of the fieldbus adapter.
Please see also the chapter “Specific hints for the operation with DC-Drives” of this document.

**Installation and Start-up Guide
PROFIBUS Adapter Module
NPBA-12
3BFE 64341588 R0125 Rev. A**

Drive specific documentation

Description of available fieldbus adapters concerning DCS 400, DCS 500 or DCS 600

DCS 400 Manual
3ADW 000 095 R0501

DCS 500 Description of the drive-specific serial link connection
3ADW 000 086 R0101

DCS 600 Description of the drive-specific serial link connection
3ADW 000 097 R0101

Adapter Connection

For more detail please see the documentation “Installation and Start-up Guide PROFIBUS Adapter Module NPBA-12”

| X1: | | |
|-----|---|--|
| 1 | A | Data Negative (Conductor 2 in twisted pair) |
| 2 | B | Data Positive (Conductor 1 in twisted pair) |
| 3 | A | Data Negative (Conductor 2 in twisted pair) |
| 4 | B | Data Positive (Conductor 1 in twisted pair) |

| X2: | | |
|-----|------|---|
| 5 | +24V | Power supply for the module : (24V d.c. ±10%) |
| 6 | 0V | |
| 7 | DG | PROFIBUS cable data ground |
| 8 | SH | PROFIBUS cable shield |

Specific hints for the operation with DC-Drives

The following table relates to the “**Installation and Start-up Guide**”, which is indicated in chapter “Related documentation” of this document.

The column **Page** shows the page number of the documentation "Installation and Start-up Guide".

| Page | Rem. |
|------|--|
| 2-3 | <p>Compatibility</p> <ul style="list-style-type: none"> also compatible for DCS600 <p>Delivery Check (different content for DC-Drives) The option package for the NPBA-12 PROFIBUS Adapter Module contains:</p> <ul style="list-style-type: none"> PROFIBUS Adapter Module, Type NPBA-12 Two pieces of fibre optic cables (2m) for connecting the adapter to the drive This document : „Fieldbus adapter with DC-Drives“ |
| 4-3 | <p>Drive Connections Fibre optic link connecting the NPBA-12 to the drive. DCS 400 : Fibre optic link connector V800 on the SDCS-CON-3(A) board DCS 500 : Fibre optic link connector V260 on the SDCS-CON-2 board DCS 600 : Fibre optic link connector CH0 on the AMC-DC Classic board</p> |
| 5-1 | <p>Configuring the System GSD File : ABB-6012.GSD (Please look also at internet www.abb.com/motors&drives)</p> |
| ... | ... Please see the next page. |

| Page | Rem. | | | | | | | | |
|------|--|-------------------|----------------|-------------------|----------------|------|---------|-------------------|-------------|
| 5-2 | <p>Table 5-1 The NPBA-12 configuration parameters (and the description after this tabel)</p> <hr/> <p>Fieldbus Par.No. : 1 MODULE TYPE DCS 400 : Select "Fieldbus" in parameter 8.01 When a fieldbus communication is selected the character string „Fieldbus“ is displayed. DCS 500 : Select "Fieldbus" in parameter 40.01 After initialisation the string NPBA-12 Vx.x instead of "Fieldbus" can be read by using the CDP312 panel. DCS 600 : Select "Fieldbus" in parameter 98.02. This selection will open the fieldbus group 51. After the initialisation the string NPBA-12 Vx.x can be read in 51.01.</p> <hr/> <p>Fieldbus Par.No. : 2 PROTOCOL The DPV1 protocol is not supported by the adapter with this software version. It is prepared for future use.</p> <hr/> <p>Fieldbus Par.No. : 5 NO. OF DATA SETS Max. 2 datasets can be used with DCS 400 and DCS 500.</p> | | | | | | | | |
| 5-3 | <p>COMM PROFILE (table)</p> <table border="1"> <thead> <tr> <th></th> <th>Drive Type</th> <th>Drive Sw. Version</th> <th>Setting to Use</th> </tr> </thead> <tbody> <tr> <td>also</td> <td>DCS 600</td> <td>DC15x603 or later</td> <td>Transparent</td> </tr> </tbody> </table> | | Drive Type | Drive Sw. Version | Setting to Use | also | DCS 600 | DC15x603 or later | Transparent |
| | Drive Type | Drive Sw. Version | Setting to Use | | | | | | |
| also | DCS 600 | DC15x603 or later | Transparent | | | | | | |
| 6-7 | Table 6-1 The Control Word ... | | | | | | | | |
| 6-8 | Table 6-2 The Status Word ... Please see the drive specific documentation. Some bits slightly differ in function from this description. | | | | | | | | |
| 6-10 | Table Request Labels Request 4 up to request 9 also not supported by SW version V1.1. | | | | | | | | |
| 6-12 | Example Write : Save to FLASH memory Not possible with DCS 400 and DCS 500 | | | | | | | | |
| A-1 | PROFIBUS Par.No. 971 Not possible with DCS 400 and DCS 500 | | | | | | | | |
| C-1 | DDCS-Link Compatible Devices also for DCS 600 | | | | | | | | |

**Upgrade of the adapter
NPBA-02 V2.x
to
NPBA-12 V1.x**

Please note : Before connecting the new adapter please write down the fieldbus parameters (see table Parameter settings), if the parameter setting was correct for the NPBA-02 adapter. After connecting with the DC drive and switching on the electronic supply the new adapter will set its default values into the fieldbus group. After this action the “new values” can be set.
Please note : The protocol FMS is not supported by the NPBA-12.

Wiring connection :

| NPBA-02 | | from | to | NPBA-12 | |
|---------|-------------|------|----|---------|-------------|
| X2:1 | D(P) | → | | X1:2 | A |
| X2:2 | D(N) | → | | X1:1 | B |
| X2:3 | DG | → | | X2:7 | DG |
| X2:4 | SHF | → *1 | | | |
| X2:5 | SH | → | | X2:8 | SH |
| X2:6 | 0V | → | | X2:6 | 0V |
| X2:7 | +24V | → | | X2:5 | +24V |
| X2:8 | PE | | | | |
| Off | Termination | | | Off | Termination |
| On | | | | On | (inside) |

*1 The terminal SHF (X2:4 of NPBA-02) has a capacitive-ohmic load to earth. Please check the whole shield wiring, if it is possible to connect on SH (X2:8 of NPBA-12).

Parameter settings :

with x = 8 for DCS 400
= 40 for DCS 500B
= 51 for DCS 600

| NPBA-02 | | | NPBA-12 | | |
|-----------|--------------|---|-------------------|-----------------|-----------|
| para. no. | actual value | | name | new value | para. no. |
| x.01 | NPBA-02 | | Module Type | NPBA-12 | x.01 |
| | -- | | Protocol | 0 | x.02 |
| x.02 | value | ⇒ | PPO Type | value -1 | x.03 |
| x.03 | value | ⇒ | Node Number | value | x.04 |
| x.04 | value | | | -- | |
| x.05 | value | ⇒ | No. of Datasets | value | x.05 |
| x.06 | value | ⇒ | Data Set Index | value | x.06 |
| x.07 | value | ⇒ | Cut-off Timeout | value | x.07 |
| x.08 | value | ⇒ | Comm Profile | value | x.08 |
| x.09 | value | ⇒ | Control zero mode | value | x.09 |



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