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Your signs	--
Our signs	--
Date	27.04.00

### **Test Contract for PROFIBUS-DP/DPV1/PA Master and Slave Devices**

#### **Some hints for quick processing this application**

Please complete in full and send the following sheets immediately to your Siemens contact person at the local branch office. In case that you do not know your Siemens contact person please let us know. We'll help quickly.

Best regards

M.Popp

Siemens AG, Würzburger Str. 121, 90766 Fürth

**To PNO- Testlab for  
DP-Masters and Slaves**  
Dept: E73  
Hr. Popp / Hr. Götz A&D SE  
Würzburger Straße 121  
90766 Füh  
Germany

**from**

**input remarks**

**contact person**

**phone**

**fax**

**your signs**

**our signs**

**location/date**



**Siemens contact person:  
Please complete in full and return to the testlab  
(address see above)**

For the attached contract kindly  
use the the following order  
number:

Company (of the customer)

Local branch office from  
Siemens

Name

Department

Phone

Fax

e-mail

best regards

# Test application / Test contract V 1.2

**for certification of  
PROFIBUS - DP/DPV1/PA  
master and slave products  
acc. to IEC 61158**

Applicant please fill out

**Application for Testing a PROFIBUS-DP/PA Master and Slave Product**

Please complete in full and return with legally binding signature to:

Siemens AG  
PROFIBUS DP - Prüflabor  
Dept: A&D SE E73 (ComDeC)  
Würzburger Straße 121

90766 Fürth  
Germany

We,

Company : \_\_\_\_\_

Dept. : \_\_\_\_\_

Address : \_\_\_\_\_

: \_\_\_\_\_

Name of the applicant : \_\_\_\_\_

Telephone : \_\_\_\_\_

Telefax : \_\_\_\_\_

email : \_\_\_\_\_

requested date : \_\_\_\_\_ (if the requested date should be  
moved to a later date please inform us at least 1 week before)

hereby apply for approval of the product described in more detail on the next page. This approval is based on the test specifications for PROFIBUS-DP products of the PROFIBUS Trading Organization (PNO).

The specified GSD/Type file is allowed to be announced in the mailbox for free. Mailbox number ++49 911 73 79 72.

The specified GSD/Type file is **not** allowed to be published in the mailbox free of charge.

**Technical Data of the Product:**

DP - Master                      Product description: \_\_\_\_\_  
 DP - Slave                        \_\_\_\_\_

DPV1 - Master                    Product description: \_\_\_\_\_  
 DPV1 - Slave                    \_\_\_\_\_  
 C1 Comm.supp.                    \_\_\_\_\_  
 C2-Comm. supp                    \_\_\_\_\_  
 Alarms supp.                      \_\_\_\_\_

PA - Slave                        Product description: \_\_\_\_\_  
 C1 Comm.supp.                    \_\_\_\_\_  
 C2-Comm. supp                    \_\_\_\_\_  
 Alarms supp.                      \_\_\_\_\_

HW release status                    : \_\_\_\_\_

SW release status                    : \_\_\_\_\_

FW release status                    : \_\_\_\_\_

Type of used ASIC/controller      : \_\_\_\_\_

Designation of the GSD-file        : \_\_\_\_\_

Release status                        : \_\_\_\_\_

Email                                    : \_\_\_\_\_

- Enclosed with application we need **(Submission of this information is essential.)**
- General description of the design
  - Description and explanations required to understand the product
  - GSD-file acc. To Revision 2.0 or higher for standard slaves and master class 1
  - GSD-file acc. To Revision 3.0 or higher for DPV1 slaves and master class 1
  - A copy of the assigned ident number from the PROFIBUS User Group
  - Manufacturer's statement that the test object meets safety and interference immunity standards applicable to the area of its application.

**Applying for a PROFIBUS-DP/DPV1 master device the customer has to regard the following:**

To avoid delays during the test procedure the customer has to place a person for commissioning purposes for about 1 day including development devices. The example for commissioning is regulated by the testlab.

Enclosure 1,2, and 3 are legally binding for handling of the test orders. The applicant agrees to the content of this test contract with his signature.

\_\_\_\_\_  
Signature of the applicant

\_\_\_\_\_  
Location and date

## **Enclosure 1 to the Test Contract:**

### **Handling of Test Orders**

The PNO-DP testing laboratory shall perform the tests in an unbiased manner in the order in which the orders are received. During the entire procedure from the time the product is received by the laboratory to the time it is returned to the orderer, it shall be ensured that unauthorized parties do not obtain access to the test object.

Both the orderer and the PNO representative appointed from the PNO advisory board by the managing board shall be authorized to be present as witnesses while testing is being carried out. The person responsible for testing shall ensure that their presence does not endanger either the confidential status of other customers, or security measures. All devices will be put into operation corresponding to the specification.

### **Processing the Test Orders**

The applicant shall provide the PNO-DP testing laboratory with the device to be tested and the technical documentation. Since the test is considered the type test, the test object shall correspond to the actual devices to be manufactured.

Immediately upon delivery, the test objects shall be transported to the premises of the PNO-DP testing laboratory. At this stage, the objects are usually still in their packaging. The packaging shall not be removed unless required and then only after coordination with the customer. The PNO-DP testing laboratory shall test and document the complete delivery.

During the incoming inspection, the scope and testability of the test object shall be determined and documented. The test order shall be rejected with appropriate justification if it should be determined that requirements of the orderer with respect to scope of testing and accuracy of measurement exceed the capabilities of the PNO-DP testing laboratory, or if the test object should fail to meet the technical prerequisites for testing in accordance with the basic testing methods and procedures. Furthermore, all orders shall be declined which would endanger objective test findings or are not of sufficient scope to provide meaningful statements.

### **Storage of the Test Object**

Should it not be possible to carry out testing of the test object immediately after the incoming inspection, said object shall be stored in an appropriate manner and kept under lock and key.

### **Testing**

Testing is performed exclusively in accordance with PNO guidelines on the operation of PNO-DP testing laboratories, and internal directives of the PNO-DP testing laboratory. Testing shall be performed by appropriately trained personnel who have been explicitly authorized by the head of the PNO-DP testing laboratory to perform this work. Testing shall be based on the testing methods of the PNO-DP testing laboratory recognized by the PNO, including testing directives and specifications. The testing procedure and the results obtained thereby shall be monitored by the head of the PNO-DP laboratory or his/her representative. The orderer shall be duly informed of discrepancies should they occur during testing. Corrective measures may only be initiated by the orderer.

After the entire test procedure has been completed, the PNO-DP testing laboratory shall prepare a report summarizing the results of the test. The testing object and all the records are held in the testing laboratory for 3 years.

The test report shall list all test procedures regardless of whether passed, failed or undecided. The test report shall state explicitly that testing only entails a one-time test of a single sample provided by the customer. Testing of the test object shall not be considered proof of conformity to standards. Statements concerning stability or quality thereof shall not be derived from the test. All listings recorded by the test system during testing may be made available to the customer should the customer so desire.

### **Objections**

The customer shall have the right to raise **objections** to the test results contained in the test report. Objections shall be filed in writing within 2 weeks of receipt of the report. If an agreement cannot be reached between customer and DP testing laboratory within an additional four weeks, the customer shall have the right to contact for arbitration the advisory board of the PROFIBUS Trading Organization (PNO) to which the PNO itself has assigned the task of mediation and arbitration, in accordance with the general conditions concerning testing and certification (FA1/PNO-PRZ/12.05.1992). For this reason, the PNO advisory board should first be contacted for the purpose of arranging a conciliatory meeting. Should these efforts fail, an expert acceptable to both parties may be appointed by the customer.

### **Shipment**

PNO guidelines on 'DP Testing' state that the testing system is to be continually expanded - technology permitting - by a wide range of DP products of various manufacturers and product types to ensure the interoperability of as many DP products as possible. Final disposition of the product or the return to its owner shall be agreed to in the test contract between manufacturer and DP testing laboratory. The test contract shall contain details of final disposition.

### **Shipment by the PNO-DP Testing Laboratory**

The following procedure shall be used when the tested product is to be returned to the customer. Within a reasonable amount of time after conclusion of testing, the PNO-DP testing laboratory shall arrange for appropriate packaging and suitable shipment of devices, data carriers and documents. The method of shipment and route shall be coordinated with the orderer in advance. Under all circumstances, the test object shall remain protected against damage and unauthorized access during storage, transportation and shipment. Both customer and PNO-DP testing laboratory shall receive copies of the shipping documents. Packaging costs shall be paid for by the customer.

### **Devices, Data Carriers and Documents Are Picked Up by the Customer.**

The customer (or his/her representative) shall be given reasonable opportunity and support to pack, load and transport the afore mentioned objects. Turnover shall be confirmed by the customer or his/her representative. Packaging costs shall be paid for by the customer.

## **Confidential Treatment of Customer-Related Information and Products**

The staff of the PNO-DP testing laboratory shall be obligated to handle customer-related information and products confidentially.

It is planned that several test contracts may be carried out simultaneously when PNO-DP testing laboratory capacity permits. To ensure confidential treatment of all customers, only one customer (or his/her representative) shall be permitted to be present in the PNO-DP testing laboratory at a time so that confidential information of other customers is not compromised. It can be agreed to that several customers (or their representatives) may be present at the same time. This must be approved by all customers.

The degree of confidential treatment shall be reduced in cases in which successfully tested DP devices become part of the testing system. Details shall be set forth in the test contract.

## **Rules Concerning the Interruption of Test Orders**

When processing of test orders must be interrupted, devices, data carriers and documents of the customer shall remain in the PNO-DP testing laboratory should such materials not be reclaimed by the customer.

Should the PNO-DP testing laboratory find it desirable to utilize its laboratory space for another test order (when a test order will be interrupted for a longer period of time), said laboratory shall not commence work on another test order until all customer materials have either been returned to the customer or stored at another location.

All customer-specific information on paper and data carriers related to the interrupted test order shall be removed from the premises of the PNO-DP testing laboratory and stored in the archives.

## **Documentation of the Test Results**

Documentation of the test results summarized in the test report shall ensure that the test can always be reproduced under identical conditions.

All documentation materials shall be unmistakably marked with a minimum of the three entries listed below:

- Designation of the document
- Unique test number
- Date

All test results shall be handled confidentially and suitably stored. They shall be retained for 3 years. They shall be archived in the document files of the PNO-DP testing laboratory and in the archives of department A&D SE (documentation and planning department). After expiration of this prescribed period of time, the documents shall be destroyed and/or data carriers erased.

Corrections or additions to the test report after said report has been issued shall be marked as annexes to the test report. Annexes shall be assigned a consecutive number, and shall be clearly related to the test report via its number. Layout structure of the annexes shall conform to that specified for test reports. The test reports shall not contain advice or recommendations ensuing from the test results.

## **Shifting of the test term**

To avoid delays in our schedule it is absolutely necessary that the customer cancels the test agreement via fax (fax ++49 (0)911 750 2100), email ... at least 7 days before the beginning of the test. If this is omitted by the customer the test lab is authorized to charge 10 % of the basic test fee. The customer will receive a new test term.



## **Enclosure 2: To the Test Contract**

### **Terms of Delivery and Payment**

The terms of delivery and payment of SIEMENS AG shall apply.

### **Warranty**

The contractor shall only guarantee that: testing shall be duly performed in adherence with the latest version (at the time the order was placed) of the PNO guidelines, and the respective test regulations agreed upon with the orderer; the data in the documents prepared concerning these tests shall correspond to the test results; and judgment of the tested product shall be made with the same care which the contractor would exercise in the handling of his own matters.

The warranty period shall be 12 months commencing on the date on which the contractor turned over the tested product to the orderer, or (in cases in which the tested product is to remain with the contractor for the purpose of expanding the test system) the date on which the contractor submitted the test report to the orderer.

Warranty claims shall be filed with an as exact a description of the fault as possible. Should a warranty claim be approved, all further claims shall be excluded, and the contractor shall be obligated to correct said deficiency at his own expense (by performing a new test if necessary) or to correct the inappropriate information in the test documents. Should it be determined that the claimed deficiency does not in fact exist, costs incurred by the new test shall be the responsibility of the orderer.

### **Liability**

The orderer shall be subject to unrestricted liability for personal injury for which he is responsible. The orderer shall be subject to liability for property damage for which he is responsible up to the amount of DM 1,000,000.-- per incident for restoration of damages.

Warranty claims and claims for damages of the orderer which are more extensive than those stated explicitly in this contract shall be excluded, regardless of legal foundation, in particular: claims for business interruption damages, loss of profit and loss of information and data to the extent that, for example, compelling liability for damages to privately used property or due to intent, gross negligence or lack of promised attributes are not involved. The orderer shall assume no responsibility for the PNO guidelines.

### **Place of Performance**

The place of performance is Fuerth, Germany.

## Hints for a rapid processing of the test procedure

To avoid any further clarifications which may lead to a delay during the test procedure additional informations are given here which cannot always be found in the available manuals or in the GSD-file. To minimize any kind of delays you're kindly asked to take care of the below described issues. The customer should supply the following information and necessary equipment for testing the device.

### **Slave supports extended diagnosis:**

The customer has to describe how the extended diagnosis can be set.

We also need the meaning of the used bytes and/or bits of the device specific diagnosis.

### **Slave supports static diagnosis:**

The customer has to describe how the static diagnosis can be set. The meaning of the used bytes and/or bits of the static specific diagnostic has to be described.

### **Adjustment of the PROFIBUS-address:**

During the test procedure the field device is addressed at address  $32_{Hex}$ . The customer has to ensure that the test address and also the lowest and highest address which is supported from the field device can be adjusted. The information of the supported address range has to be given to the test lab.

When using DIP-switches the customer has to describe how the address can be adjusted. If a special software tool is necessary for addressing the slave, that software has to be delivered on a 3,5" disc or on a CD-ROM. It has to work on MS-DOS or Windows 95/NT. Special equipment like RS232/RS485 cables or other input devices have to be delivered too.

If the slave supports the Set\_Slave\_Address telegram make sure that after setting the bit "No\_Add\_Chg" = True (which will be made when tested) the device can be reset to the original state. It has to be described how that can be made. The necessary tools are to be delivered.

### **Baudrate adjustment:**

If automatic baudsearch is not supported, the selection of the baudrate has to be described.

If a special software tool is necessary for setting the baudrate of the slave, that software has to be delivered on a 3,5" disc or on a CD-ROM. It has to work on MS-DOS or Windows 95/NT. If the device uses special cables (e.g. RS232/RS485) or hardware, this has to be delivered, too.

### **Input- and output data:**

During the test the inputs and outputs of the EUT need to be changed. When not using physical inputs - as used in I/O devices for example - a description of how to change the inputs is necessary. This applies also to special output data of the EUT.

During net data exchange for example internal memory or virtual address range the input data have to be mirrored to the output data.

### **User profiles:**

If a user profile for data exchange is used to control the EUT we need the complete information about these special PROFIBUS telegrams. It is not sufficient to deliver only the used function blocks for a PLC to the test lab.

### **Bus connector:**

If the EUT is not connected by the standard 9 pin D-Sub connector or by terminal block, the used connectors with the wiring diagram or premanufactured cables are to be delivered. Please take care of the correct wiring acc to EN 50170 Volume 2.

### **Wiring the input- and output channels:**

If special connectors or cables are used we also need this equipment.

**Enclosure 4: To the Test Contract**

**Schedule of Fees (valid until 09/30/2000)**

**Billing Rates**

Fees for performance of the tests shall be charged by the services actually used.

The basic fee for one simple standard slave shall be: DM 2,900.-- (1483 Euro)  
(This fee shall include 2 days of testing.)

The basic fee for one intelligent standard slave shall be: DM 4,635.-- (2370 Euro)  
(This fee shall include 3 days of testing.)

1.3 The basic fee for a standard class 1 master is DM 9,000.-- (4601 Euro)

1.3.1 Test of optional master class 2 functionality  
(depending on the supported functionality) on inquiry

1.3.2. Optional test of the slave-funtionality (standard) DM 2,900.-- (1483 Euro)  
(This is only be true of a master **and** slave device).

1.4. The basic fee for one DP/V1 Slave DM 4635.-- (2370 Euro)  
C1- Communication DM 1000.-- (512 Euro)  
C2- Communication DM 1000.-- (512 Euro)  
Alarms on inquiry

1.5. The basic fee for one PA-field device (Profile class A) on inquiry

1.5.1 The basic fee for one PA-field device (Profile class B) on inquiry

A charge of DM 1,540.-- ( 787 Euro ) shall be made for each additional day.

Service shall consist of testing and test report.