



PCM-Decoder

HG 17100-A

English, Revision 01	Dev. by: L.M.
Date: 12.09.2013	Author(s): RAD / A.F.
Götting KG, Celler Str. 5, D-31275 Lehrte - Röddensen (Germany), Tel.: +49 (0) 51 36 / 80 96 -0, Fax: +49 (0) 51 36 / 80 96 -80, eMail: info@goetting.de, Internet: www.goetting.de	

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1 General Device Description

The PCM-Decoder HG 17100-A provides the following features:

1. Reception and decoding of net-synchronous PCM- signals of control line 1.
2. Evaluation of positive and negative half waves on signal line 1 and 2.
3. Output of positive resp. negative half waves on signal line 1 and 2.
4. Communication with a control system as a Profibus- slave DP- V0.
5. Serial communication with other components via RS 232 or RS 485 (optional).

The following figure illustrates the interfaces currently available.

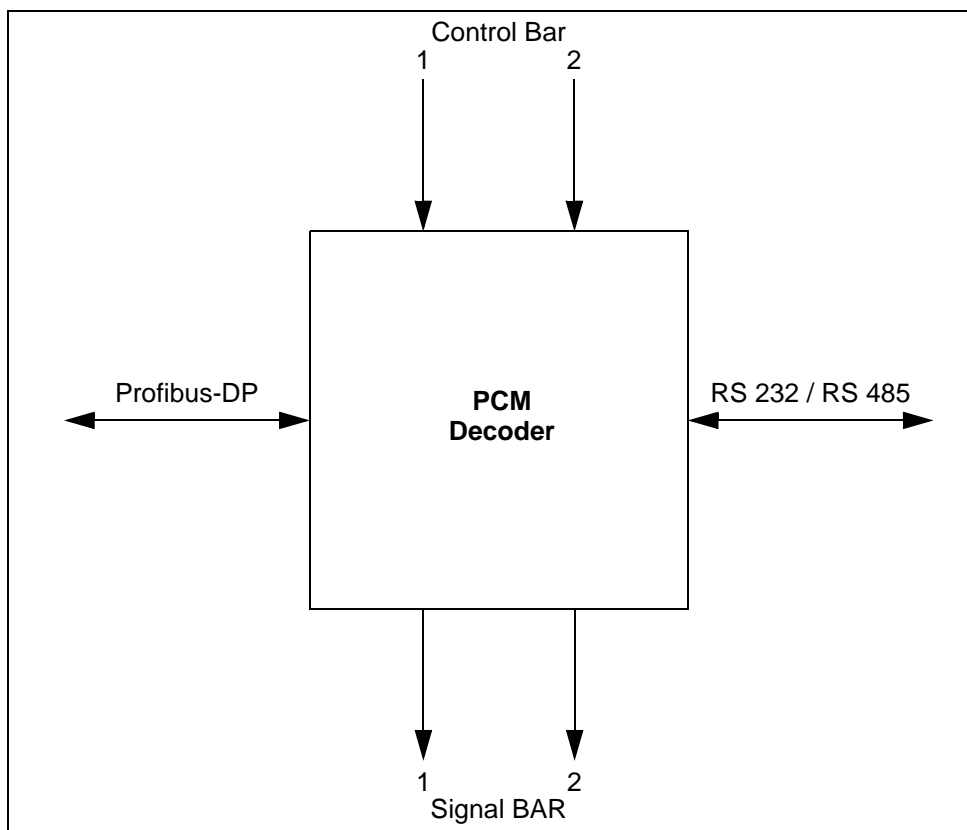


Figure 1 Interfaces (Block Diagram)

2 Hardware

2.1 Casing

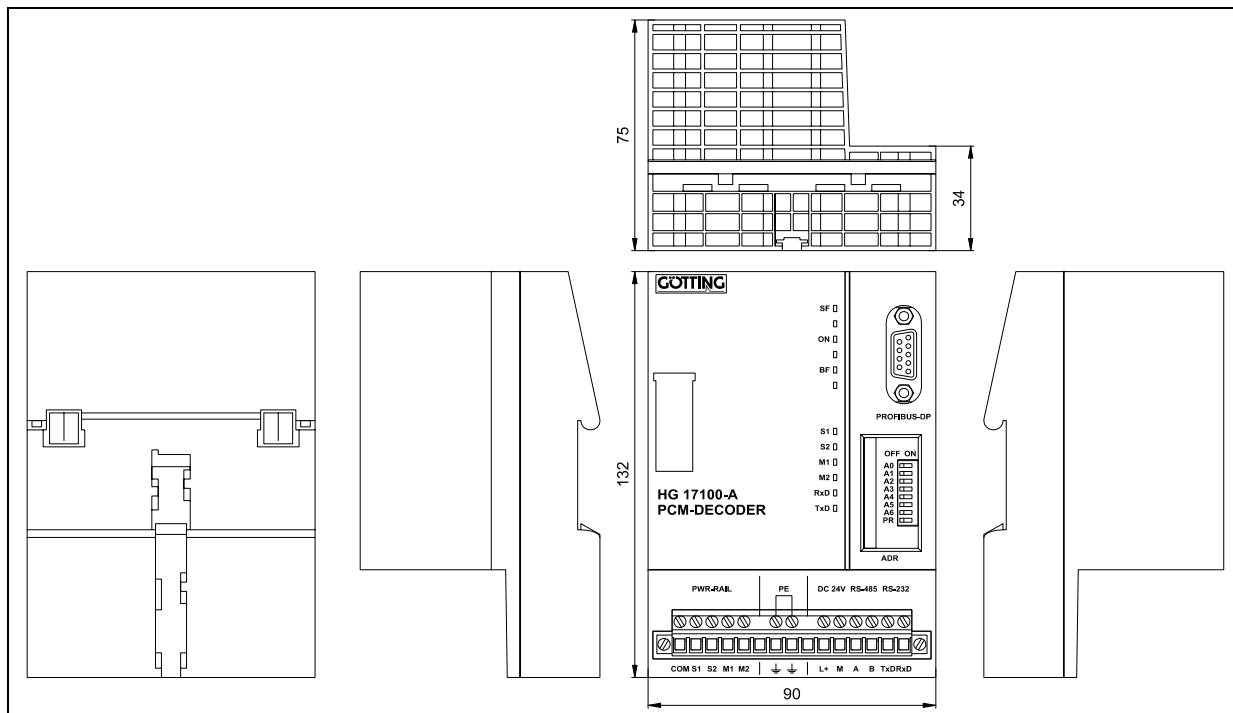


Figure 2 Casing of the PCM decoder

The casing has an IP20 rating.

2.2 Mounting

The PCM- Decoder is intended for installation on a 35 mm mounting rail. The connection to protective ground is carried out with contacts at the casing to the mounting rail. The protective earth connection to the mounting rail is carried out via housing contacts.

2.3 Pin Assignments

2.3.1 ST1: 15-pin plug (Phoenix)

Pin No.	Description	Function
1	RxD	Reception line RS 232
2	TxD	Transmission line RS 232
3	B	Line B RS 485
4	A	Line A RS 485

Table 1 Pin allocation ST1 (part 1 of 2)

Pin No.	Description	Function
5	M	Power supply ground
6	L+	+24 Volt supply
7		
8	PE	Protective earth
9	PE	Protective earth
10		
11	M2	Signal line 2
12	M1	Signal line 1
13	S2	Control line 2
14	S1	Control line 1
15	COM	Reference phase for control line or signal line

Table 1 Pin allocation ST1 (part 2 of 2)

2.3.2 ST2: 9-pin SUB-D

Pin allocation corresponds to EN 50170 for Profibus.

Pin No.	Description	Function
1		
2		
3	A	Line A RS 485
4	RTS	Request To Send
5	GND	Ground supply (for terminating resistor)
6	+5V	+5 volt supply (for terminating resistor)
7		
8	B	Line B RS 485
9		

Table 2 Pin allocation ST2

2.4 Displays and Operating Controls

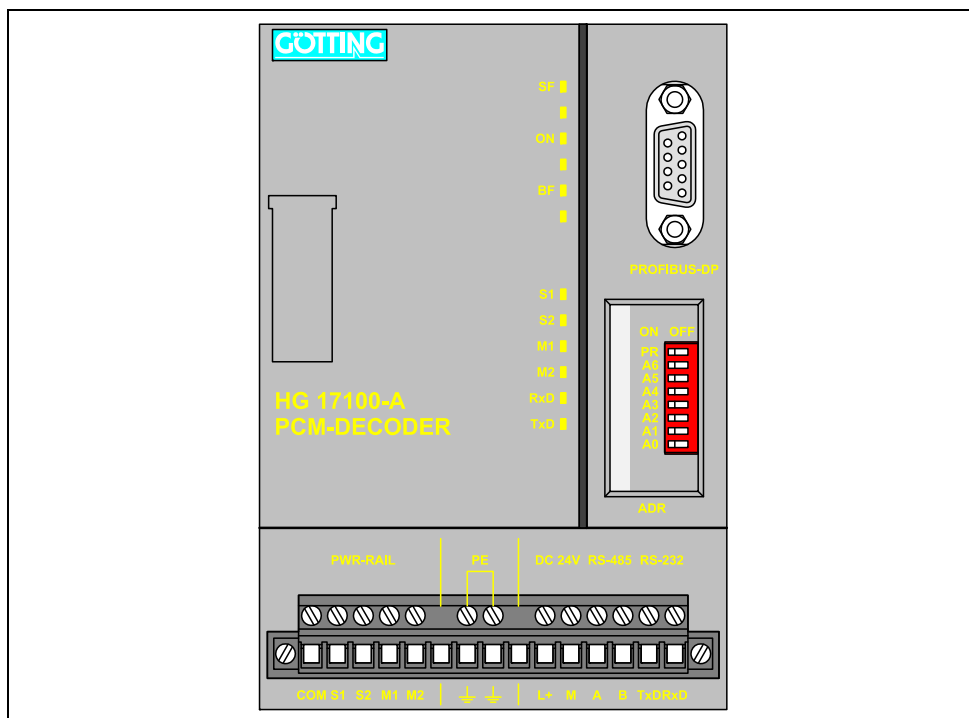


Figure 3 Operating controls

2.4.1 LEDs

Description	Color	Function
SF	Red	Device has detected a system error or is not ready for operation
ON	Green	Operating voltage display DC 24V
BF	Red	Bus error Profibus- DP, i.e. device not in data exchange
S1	Yellow	Signal detected on S1
S2	Yellow	Signal detected on S2
M1	Green	Signal relay control for signal line (bar) 1 activated
M2	Green	Signal relay control for signal line (bar) 2 activated
RxD	Yellow	Activity on reception line of the serial interface
TxD	Yellow	Activity on transmission line of the serial interface

Table 3 LEDs and its functions

2.4.2 DIL Switch

A0 – A6: Binary Adjustment of the Profibus user address / slave address

PR: Activates the programming mode for a software update.
For normal operation it has to be set to **OFF**.

2.5 Power Supply

The connections for the voltage supply L + M are reverse polarity protected, i.e. a unit protection against destruction due to reverse polarity will be ensured.

Nominal voltage: DC 24 V

Tolerance range: DC 18 to 36 V

Current consumption: ≤ 120 mA at 24 V

2.6 Further Versions

Type	Description	S1	S2	M1	M2	Other
1	HG 17100-A	PCM10	AC 230V	Pos. HW: NC Neg. HW: NO	Pos. HW: NO Neg. HW: NO	

Table 4 Overview of further versions

3 Software

3.1 Profibus-DP

- Configuration: 1 Byte Output, 2 Byte Input
- Parametrization: 2 Byte User Parameter
 1. Byte: reserved
 2. Byte: Type, see section 2.6 on page 7

3.2 User Data

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output byte					M2-	M2+	M1-	M1+
1. Input byte	PCM-Code on S1							
2. Input byte							S2-	S2+

Table 5 User Data

This means:

- M1+ output of positive half-wave on M1
- M1- output of negative half-wave on M1
- M2+ output of positive half-wave on M2
- M2- output of negative half-wave on M 2

- S2+ positive half-wave on S2 detected
- S2- negative half-wave on S2 detected

4 Climatic Conditions

Environmental condition	Transport and Storage	Operational Conditions
Temperature	From -40 °C to +70 °C	From 0 °C to +60 °C
Temperature change	20 K/h	10 K/h
Relative air humidity	From 5 to 95 %, without condensation	From 15 to 95 %, without condensation
Air pressure	From 1080 to 660 hPa (corresponds to a height of -1,000 to 3,500 m)	Von 1080 to 795 hPa (corresponds to a height of -1,000 to 2,000 m)
Pollutant concentrations	<ul style="list-style-type: none"> - SO₂: < 0,5 ppm; rel. humidity < 60 %, no condensation - H₂S: < 0,1 ppm; rel. humidity < 60 %, no condensation 	

Table 6 Climatic conditions

5 GSD File

You can download the latest version of the GSD file from our homepage at www.goetting-agv.com/components/17100. Alternatively you can enter the text below into a text editor and save it as HG17100A1.GSD. However, due to typing errors the file may not work properly, therefore we highly recommend to use the internet file.

```
;*****
*****
;***                                     ***
;***      Götting KG                     ***
;***      D-31275 Lehrte-Röddensen       ***
;***      Celler Straße 5                ***
;***      Tel: 05136/8096-0              ***
;***      Fax: 05136/8096-80            ***
;***                                     ***
;*****
*****
;***                                     ***
;***      Filename: HG17100A1.GSD        (c) 2003
;***
;***      GSD file version 1 from 22.07.2003
;***
;***                                     ***
;*****
*****
;
;      ATTENTION:
;      =====
;      Changes in this file can cause configuration or communication problems.
;      This file is compatible to the firmware of the device.

#Profibus_DP

GSD_Revision      = 1
Vendor_Name       = "Götting KG"
Model_Name        = "HG17100-A"
Revision          = "Version 1.00"
Ident_Number      = 0x3003
Protocol_Ident    = 0
Station_Type      = 0
Hardware_Release  = "HG17100"
Software_Release  = "17100A1 V1.00"
Implementation_Type = "SPC3"
9.6_supp          = 1
19.2_supp         = 1
93.75_supp        = 1
```

```
187.5_supp      = 1
500_supp        = 1
1.5M_supp       = 1
3M_supp         = 1
6M_supp         = 1
12M_supp        = 1
MaxTsdr_9.6     = 60
MaxTsdr_19.2    = 60
MaxTsdr_93.75   = 60
MaxTsdr_187.5   = 60
MaxTsdr_500     = 100
MaxTsdr_1.5M    = 150
MaxTsdr_3M      = 250
MaxTsdr_6M      = 450
MaxTsdr_12M     = 800
Redundancy      = 0
Repeater_Ctrl_Sig = 0
24V_Pins        = 0
Freeze_Mode_supp = 1
Sync_Mode_supp  = 1
Auto_Baud_supp  = 1
Set_Slave_Add_supp = 0
User_Prm_Data_Len = 2
User_Prm_Data    = 0x00,0x01
Min_Slave_Intervall = 11
Modular_Station = 0
Max_Diag_Data_Len = 244
Slave_Family     = 3

Module = "2 Byte Input/1 Byte Output" 0x11, 0x20
EndModule
```

Figure 4 Content of the GSD file

6 List of Figures

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8 Basic Information Regarding this Manual

In documentations of Götting KG the following symbols and assignments were used at the time of printing this manual:

- ◆ Security advices have the following symbols, depending on the emphasis and the degree of exposure:

NOTE!



ATTENTION!



CAUTION!



WARNING!



- ◆ Continuative information and tips are identified as follows:

Tip!



- ◆ Program texts and variables are highlighted by using the font 'Courier'.
- ◆ Whenever input of key combinations is required for the operation of programmes, the corresponding **K**ey combinations are **H**ighlighted (in Götting KG programs it is usually possible to use small and capitalized characters equally).
- ◆ Sections, figures and tables are automatically numbered consecutively throughout the entire document. In addition, each document has an index listed behind the front page, including pages and - whenever the document has more than 10 pages - following the actual system description a figure and table index in the back. In certain cases (for long and/or complicated documents) a subject index is added.
- ◆ Each document provides a table block with meta-information on the front page, indicating the system designer, author, revision and date of issue. In addition, the information regarding revision and date of issue are included within the footer of each page, enabling the exact allocation of the information with a date and certain a system revision.
- ◆ Online-Version (PDF) and printed manual are generated from the same source. Due to the consistent use of Adobe FrameMaker for the generation of documentation, all directory entries (including page numbers and subject index) and cross references in the PDF file can be clicked on with the mouse and will lead to the corresponding linked contents.



9 Copyright and Terms of Liability

9.1 Copyright

This manual is protected by copyright. All rights reserved. Violations are subject to penal legislation of the Copyright.

9.2 Exclusion of Liability

Any information given is to be understood as system description only, but is not to be taken as guaranteed features. Any values are reference values. The product characteristics are only valid if the systems are used according to the description.

This instruction manual has been drawn up to the best of our knowledge. Installation, setup and operation of the device will be on the customer's own risk. Liability for consequential defects is excluded. We reserve the right for changes encouraging technical improvements. We also reserve the right to change the contents of this manual without having to give notice to any third party.

9.3 Trade Marks and Company Names

Unless stated otherwise, the herein mentioned logos and product names are legally protected trade marks of Götting KG. All third party product or company names may be trade marks or registered trade marks of the corresponding companies.