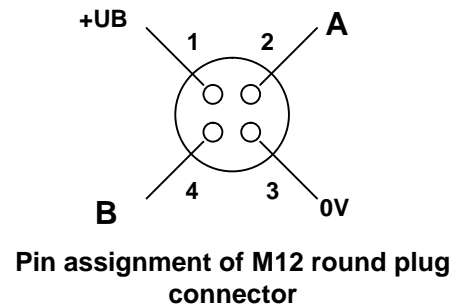
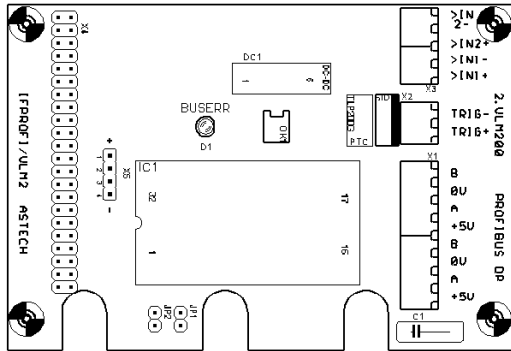


# IFPROFI

## Profibus- DP for VLM-Series, Version 5.2

**ASTECH**

Angewandte Sensortechnik



### Applications

- Profibus DP interface card for VLM-series
- Output of **velocity and measuring rate**, length (optional), illumination and exposure to Profibus master, output of **VLM error numbers for diagnosis** (see manual error codes)
- Measuring device can be set to **standby mode** by Profibus master
- Control of the inputs IN1 (direction) and IN2 (trigger) by the master; the outputs IN1+ to IN2- are to be connected to the corresponding inputs. When using an AB3 or AB4 connection card, the DIL switch must be changed over from standard to IFPROFI.
- Optically coupled TRIG output for the trigger signal for the synchronisation of additional VLM200/250 of the S series and all VLM320 (synchronous operation for difference measurement for master without sync and freeze mode)

### Functional description

The IFPROFI interface card allows for the connection of measuring devices of the VLM-series to a Profibus-DP master. The card supports bus rates up to 12 MBaud (autodetect).

**The slave address is set through the bus** (e.g. Siemens PG or any other master with SET\_SLAVE\_ADD\_REQ).

The delivery includes a terminating resistor. The last device at the bus is equipped with a terminating resistor. The connection is established through two standard M12 B-coded round plug connectors (IEC 60947-5-2, e.g. from Binder).

The **VLM measuring device is parameterised through the serial RS232 interface** (connection 1). For details, please refer to the VLM parameter table overleaf.

### Configuration

The IF-PROFI interface card is configured as a **DP standard slave**. Through the initial parameterisation completed after the VLM is switched on, the IFPROFI determines the mode used, based on the number of Profibus input bytes. Modes 1 to 5 put out binary data to the Profibus. Mode 7 acts as a transparent output. It transfers the ASCII values as generated by the VLM.

Special care must be taken to ensure that the parameterisation of the VLM is in line with the mode used (see table overleaf).

The interface card behaves like a DP standard slave. The data is always read in blocks by the master (e.g. Siemens S7: SFC 14 "DPRD\_DAT", read consistent data, out a DP-normslave).

### User Diagnosis

Output of **VLM Error Code as 2 Byte user diagnosis** in case of a VLM error (length and error code, meaning see user manual VLM). In the case of errors in the interface card IFPROFI 4 bytes diagnosis output are available (length, error code VLM, error code IFPROFI und system error code IFPROFI).

### Technical data

Field bus ID	Set via bus (stored on card)
ID number	<b>0x2079 (8313)</b>
Field bus baud rate	up to 12 MBaud (autodetect)
Bus termination	External, via pluggable terminating resistor
Field bus connection	2x M12x1 B-coded round plug connectors, IEC 60947-5-2, e.g. from Binder

### ASTECH Angewandte Sensortechnik GmbH

Non-contact measuring technology for length, width, distance, position, velocity, Laser and CCD cameras

CTG Center for Technology and Trade, Schonenfahrerstr. 5, D-18057 Rostock, Germany

Telephone +49 (0)381 / 44073-0 fax +49 (0)381 / 44073-20 e-mail info@astech.de Internet www.astech.de

# IFPROFI

## Profibus DP for VLM-Series



Mode <sup>1)</sup>	Profibus IN (IFPROFI output)	VLM parameter S2FORMAT	VLM parameter S2TIME <sup>3)</sup>	Profibus configuration	Profibus configuration bytes	Comments
<b>M1</b>	16-bit counter, 32-bit velocity, 16-bit measuring rate <sup>2)</sup>	S2FORMAT Z	≥ 12 ms	8 bytes IN, 1 byte OUT	151 32 (0x97 0x20)	Standard for F and S series
<b>M2</b>	16-bit counter, 32-bit velocity, 16-bit measuring rate, 32-bit velocity integral, 32-bit 1 ms timer <sup>2)</sup>	S2FORMAT Z	≥ 17 ms	16 bytes IN, 1 byte OUT	215 32 (0xD7 0x20)	Only for F and S series
<b>M3</b>	16-bit counter, 32-bit velocity, 16-bit measuring rate, 8-bit lamp, 8-bit exposure <sup>2)</sup>	S2FORMAT Z I:H:2 E:H:2	≥ 17 ms	10 bytes IN, 1 byte OUT	153 32 (0x99 0x20)	-
<b>M4</b>	16-bit counter, 32-bit velocity, 16-bit measuring rate, 32-bit length <sup>2)</sup>	S2FORMAT Z L:H	≥ 15 ms	12 bytes IN, 1 byte OUT	155 32 (0x9B 0x20)	Standard for internal length measuring; Not for F and S series
<b>M5</b>	16-bit counter, 32-bit velocity, 16-bit measuring rate, 32-bit length, 8-bit lamp, 8-bit exposure <sup>2)</sup>	S2FORMAT Z L:H I:H:2 E:H:2	≥ 20 ms	14 bytes IN, 1 byte OUT	157 32 (0x9D 0x20)	Not for F and S series
<b>M6</b>	Reserved	-	-	22 bytes IN, 1 byte OUT	218 32 (0xDA 0x20)	Do not use
<b>M7</b>	16-bit counter, 8-bit length, reception string, 29-character ASCII	S2FORMAT,#'...	≥ 20 ms	32 bytes IN, 1 byte OUT	223 32 (0xDF 0x20)	Free ASCII output

- 1) Compatible with B modes of previous versions; from version 5: clear error with bit 4 Profibus OUT and error number for user diagnostics (not with M7)  
 2) Scaling: velocity in steps of 0.00001 m/s; length in steps of 0.0001 m; rate in steps of 0.1%; all values without sign!  
 3) For every change of the byte Profibus OUT additional 3 ms are needed. Example: synchronously output (S2OUT 1) for every flank of IN2 +3 ms, i.e. +6 ms.

### Profibus OUT <sup>3)</sup>

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Reserved	Reserved	Reserved	Clear <sup>4)</sup>	Standby <sup>5)</sup>	Reset <sup>6)</sup>	IN2	IN1

- 4) Change from 0 to 1 deletes error and diagnostic data (see manual ERROR)  
 5) If standby is set to 1, the VLM is in standby mode (see manual \*STANDBY)  
 6) Only in **M2** mode: Bit2= 1 resets the counter, the velocity integral and the timer to zero

### Version

IFPROFI hardware from V3.0 / Rev. H; IFPROFI script version 5.2;  
 GSD file revision 2.0; VLM200/250 firmware from V7.3; VLM320 Firmware from V1.00

### Parameters for VLM

S2ON 1 (necessary)  
 S2INTERFACE 57600 N (necessary)  
 S2FORMAT Z (e.g. mode **M1**, see table)  
 S2OUTPUT 0 (e.g. time-synchronised)  
 S2TIME 20 (e.g. 20 ms, see table)  
 AVERAGE (normally same as S2TIME; F and S series S2TIME/WINDOWS)

Version 5.2b, last modified 2010-12-20, file name IFPROFI52\_E.doc

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 CTG Center for Technology and Trade, Schonenfahrerstr. 5, D-18057 Rostock, Germany  
 Telephone +49 (0)381 / 44073-0 fax +49 (0)381 / 44073-20 e-mail info@astech.de Internet www.astech.de