

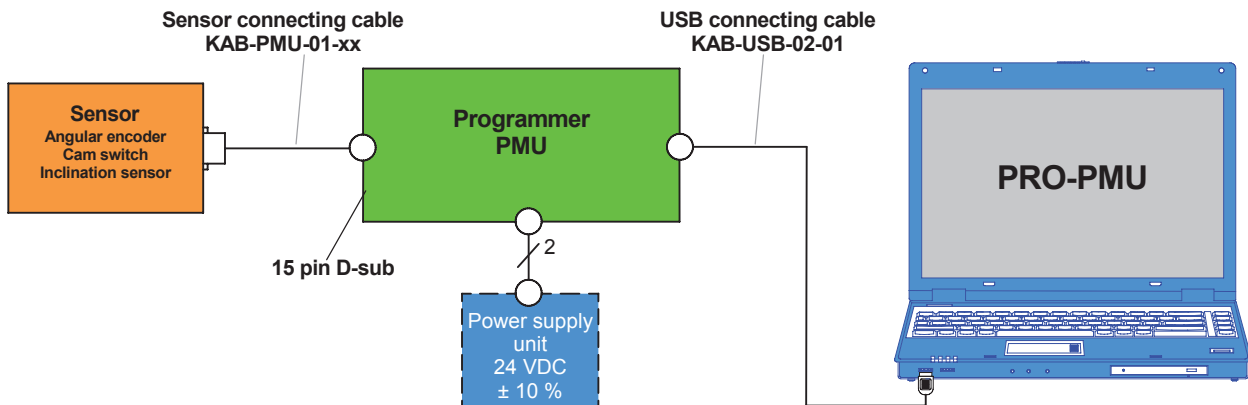
Universal-Programmer Model PMU

Document no.: PMU 12005 EE

Date: 21.09.2015



- For programming TWK sensors like angular encoder, switching cam encoder and inclination sensors with PC via USB bus (2.0)
- **Operating system requirements: Windows 8.1, 8 and 7**
- Voltage supply via USB port respectively external power supply unit
- **Interfaces supplied: CAN, I²C, analogue and UARTs**
- **Scope of delivery: Universal programmer set PMUS consisting of connecting cable to USB, connecting cable to sensor and software PRO-PMU**



Assembly and function

For programming TWK sensors like angular encoder, inclination sensors, switching cam encoder and others with a PC the programmer PMU is necessary. The connection to the PC is realized via USB interface (2.0) with a USB cable. The sensors are connected to the programmer with a connecting cable with a 15 pin D-sub (socket) connector on the programmer side and a plug as needed for the specific sensor on the sensor side. Thereby the selection occurs according to the table on page 6.

The power supply is realized via USB port or for higher power requirements with an external power supply unit. The USB port of the computer is galvanically isolated from the power supply of the sensor and the programming lines. As operating system for the PC Windows 8.1, 8 and 7. As software the program PRO-PMU is used.

The following interfaces are supported: CAN, I²C, analogue and UARTs. Additionally for CAN the connection of the terminating resistor of 120 Ω is realized on the front plate of the programmer.

Universal-Programmer PMU

Technical Data, Environmental data

Technical data

- Power supply voltage
 - via USB Port: 5 V, maximum 500 mA (2.5 W),
24 volts are generated via Stepup regulator
 - via external supply unit: 5 V to 30 V, 1 A, power depends on technical data of the supply unit
(fuse: 1 A, F)
 - Connection: 4 mm laboratory jacks or power supply plug (NES/J21)
- USB cable: length approx. 2 m
USB connection type B (programmer side) and USB connection type A (PC side)
- Connecting cable
Programmer to sensor: length approx. 1 m
sensor side: see table on page 8 respectively according to customer's specifications,
Programmer side: 15 pin D-sub, socket
- Housing: Aluminium
- Mass: approx. 0.25 kg

Environmental data

- Resistance:
 - To shock: 20 m/s²; 6 ms
DIN EN 60068-2-27
 - gegen Vibration: 10 mm Amplitude; 5 ... 16 Hz
10 m/s²; 16 ... 2000 Hz
DIN EN 60068-2-6
- EMC standards:
 - Emission: EN 61000-6-4
 - ESD: EN 61000-6-2
- Protection grade (DIN EN 60529): IP 20
- Operating temperature: 0 °C ... + 50 °C
- Storage temperature: - 20 °C ... + 60 °C
- Mounting: via top-hat rail (optional)

Version of software and hardware

Version of software and hardware PMU-xx

	Sensor	Active control mode	Status
PMU-02	Angular encoder CRP	no	
PMU-03	Angular encoder CRP, CRF, DAF, SRF, SAF		invalid
PMU-04	Angular encoder CRF, DAF, SRF, SAF	yes	

Universal-Programmer PMU

Scope of delivery

Universal programmer set PMUS

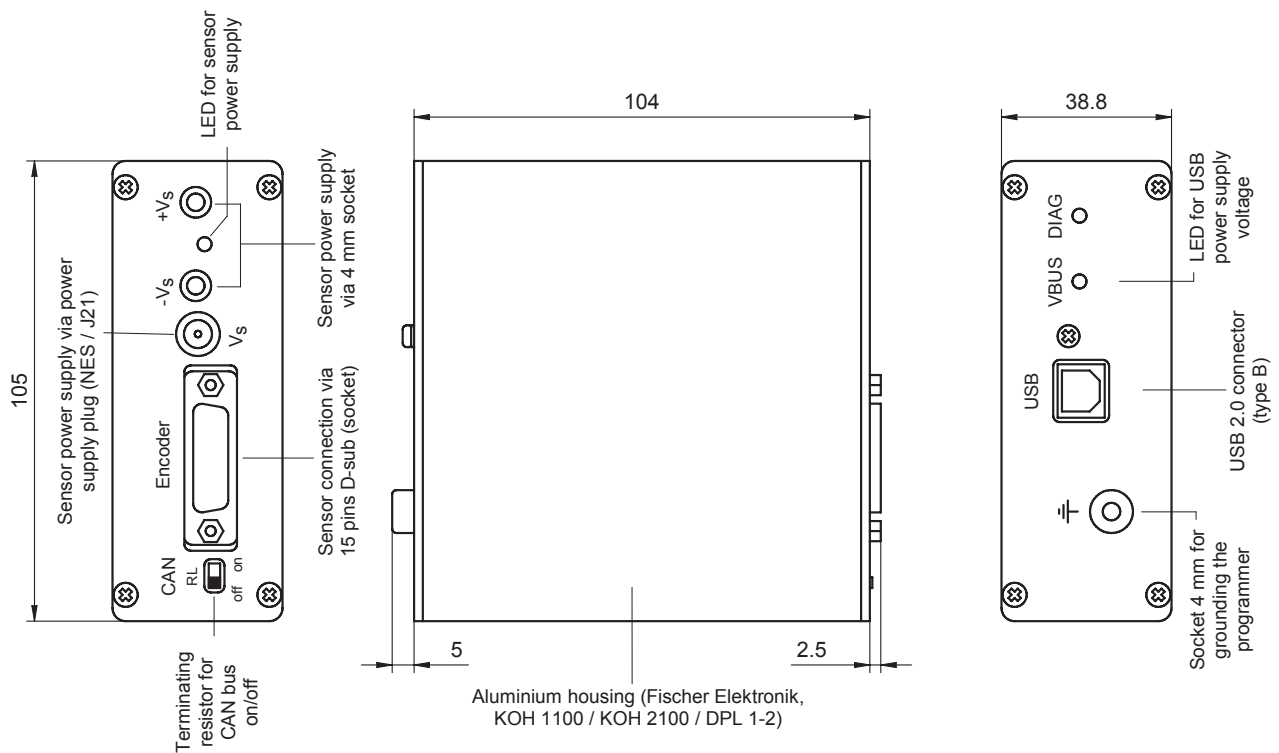
1	Connecting cable programmer PMU - PC (USB)	KAB-USB - 02 - 01
2	VConnecting cable programmer PMU - Sensor (Variations, see table on page 8)	KAB-PMU - 01 - xx
3	Programmer PMU	PMU - 04
4	Software programmer PMU (CD)	PRO-PMU - 04 - 01

Remark

The programmer PMU inclusively the software PRO-PMU replace completely the programmer MC for encoders of model CRP as well as the converter module PF-K9UM00 (PF10713) for encoders of models CRF and DAF.

Drawing

Dimensions in mm



Universal-Programmer PMU

Order code format

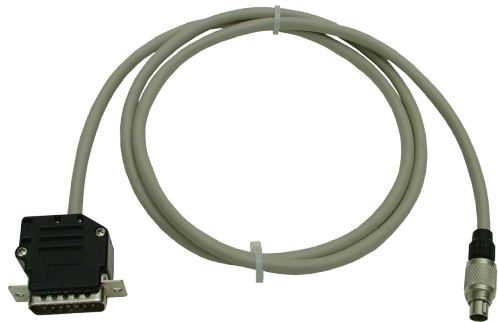
Connecting cable programmer PMU - PC (USB)

KAB-USB - 02 - 01	
	01 Electrical and mechanical variants *
	02 Length in m
KAB-USB	Connecting cable programmer PMU to PC (USB-interface)



Connecting cable programmer PMU - Sensor

KAB-PMU- 01- 00	
	Overview of variants on table on page 8, e.g.
	00 CRF/ DAF open cable ends
	08 CRP 58/65/66 (parallel)
	01 Length in m
KAB-PMU	Connecting cable programmer PMU to Sensor



Programmer PMU

PMU - 04	
	Electrical and mechanical variants *
	02 Angular encoder CRP
	04 Angular encoder CRF, SRF, DAF, SAF, with active control mode
PMU	Programmer PMU



* The basic versions in accordance with the data sheet bear the code number 01. Variations from the basic version are indicated with a consecutive number and are documented in our factory.

Universal-Programmer PMU

Bestellbezeichnungen

Software for programmer PMU (CD)

PRO-PMU	04 - 01
	01 Electrical and mechanical variants *
	02 Software for programmer PMU-02
	04 Software for programmer PMU-04
Pro-PMU	Software Programmer PMU



Universal Programmer Set PMUS

PMUS	- 04 - 00 - A01
	01 Electrical and mechanical variants *
	Overview of variants on table on page 8, e.g
	00 Connecting cable programmer PMU to sensor KAB-PMU - 01 - 00
	08 Connecting cable programmer PMU to sensor KAB-PMU - 01 - 08
	02 Programmer PMU-02
	04 Programmer PMU-04
Pro-PMU	Universal programmer Set



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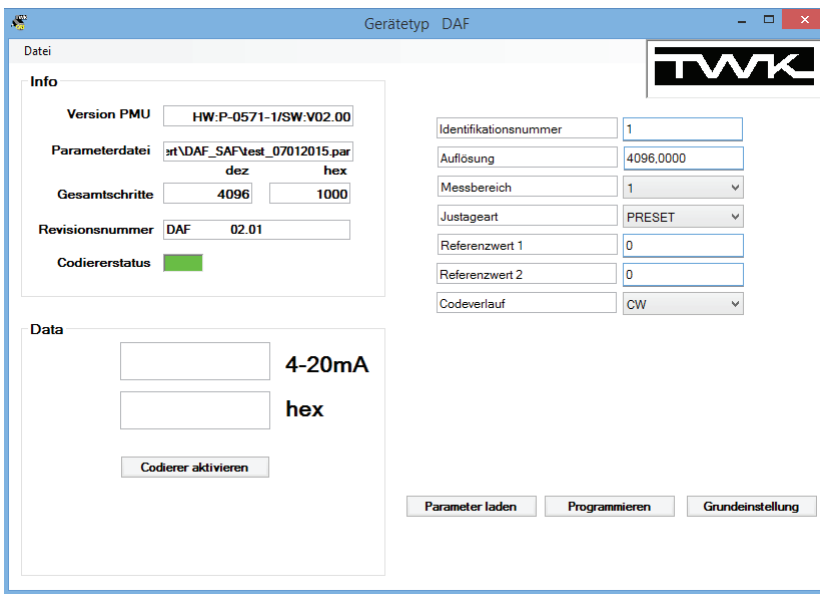
Universal-Programmer PMU

Software

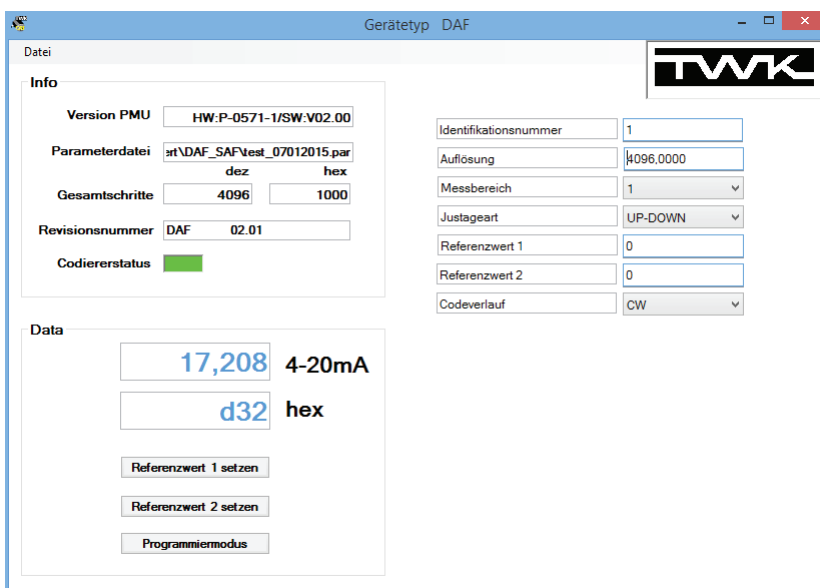
Software PRO-PMU



Home screen



Main window



See image control mode

Universal-Programmer PMU

With the universal programmer PMU programmable sensors

The following TWK sensors can be programmed with the universal programmer PMU.

Sensors	Data sheets	Interfaces
CRP	CRP10113	Parallel, SSI, ASA
CRF	CRF10266	Parallel, SSI, ASA
DAF	DAF10286	Analog
TBA 36 / 42 / 50	TBX11713 / TBX11930 / TBX11294	Analog
TMA 42 / 50	TMX11931 / TMX11451	Analog
TRA 42 / 50	TRX 11916 / TRX 11820	Analog
TSA 42 / 50	/ TSX 11851	Analog
TBE 36 /42 / 50	TBX 11713 / TBX11930 / TBX11294	SSI
TME 42 / 50	TMX11931 / TMX11451	SSI
TRE 42 / 50	TRX 11916 / TRX 11820	SSI
TSE 42 / 50	/ TSX 11851	SSI
TBN 36 / 42/ 50	TBX 11713 / TBX11930 / TBX11294	CANopen
TMN 42 / 50	TMX11931 / TMX11451	CANopen
TRN 42 / 50	TRX 11916 / TRX 11820	CANopen
TSN 42 / 50	/ TSX 11851	CANopen
NKA 55 / NBA 65	NKX 11874 / NBX 11918	Analog
NKN 55 / NBN 65	NKX 11874 / NBX 11918	CANopen
NOC 75	NOC 11998	SSI, CANopen, Analog

Connection assignment

The connection assignment is enclosed with each universal programmer PMU.

Universal-Programmer PMU

Name of the connecting cable

								Order code format		
USB connecting cable								KAB-USB-02-01		
Sensor connecting cable								▼		
Programmer side 15 pin D-sub, socket										
Sensor: CRF/ DAF										
	Type of plug	No. of Pins	+UB	-UB	PR+	PR-				
	open cable ends		brown	white	green	yellow			KAB-PMU-1-00 (PF-K9UM00)*	
	Bi 423	12	L	M	F	E			KAB-PMU-1-01 (PF-K9UM01)*	
	RS 25	12	11	12	6	5			KAB-PMU-1-02 (PF-K9UM02)*	
	DC 37	37	36	37	26	25			KAB-PMU-1-03 (PF-K9UM03)*	
	HAN 40	40	D9	D10	C6	C5			KAB-PMU-1-04 (PF-K9UM04)*	
	DC 37**	37	36	37	26	25			KAB-PMU-1-05 (PF-K9UM05)*	
	Bi 723	14	T	U	L	J			KAB-PMU-1-06 (PF-K9UM06)*	
	HAN32ES	32	31	32	26	25			KAB-PMU-1-07 (PF-K9UM07)*	
Sensor: CRP 58/ 65/ 66, parallel										
	Set plug, 5 pins/ plug angle encoder	5/2	Set plug SET-01 and plug DC 37 S							KAB-PMU-1-08
Sensor: CRP 105, parallel										
	Set plug, 5 pins/ plug angle encoder	5/2	Set plug SET-01 and plug DC 37 S + adapter**							KAB-PMU-1-09
Sensor: CRP, SSI										
	Set plug, 5 pins/ plug angle encoder	5/2	Set plug SET-01 and Bi 423							KAB-PMU-1-xx
Sensor: CRP, ASA										
	Set plug, 5 pins/ plug angle encoder	5/2	Set plug SET-01 and Bi 423							KAB-PMU-1-xx
Sensor: T series, analogue										
	Plug	No. of Pins	+UB	-UB	IA/UA	Common				
Bridge between xx-xx	M12	4	1	2	3	4			KAB-PMU-1-xx	
Bridge between xx-xx	M12	8	1	2	3	4			KAB-PMU-1-xx	
Sensor: T series, CANopen										
	Plug	No. of Pins	+UB	-UB	CAN+	CAN-	CAN-GND			
	M12	5	2	3	4	5			KAB-PMU-1-xx	
	M12	8	1	2	3	4	5		KAB-PMU-1-xx	
Sensor: T series, SSI										
	Plug	No. of Pins	+UB	-UB	TxD	RxD				
Bridge between xx-xx	M12	8	not yet defined							KAB-PMU-1-xx
Interface: I ² C										
	Plug	No. of Pins	+UB	-UB	SCL	SDA				
	not yet defined								KAB-PMU-1-xx	

* Old order code format of converter module PF-K9UMxx (see PF10713).

** With adapter for angular encoder and angular transducer of mounting form 105.