DIGITAL DISPLAY
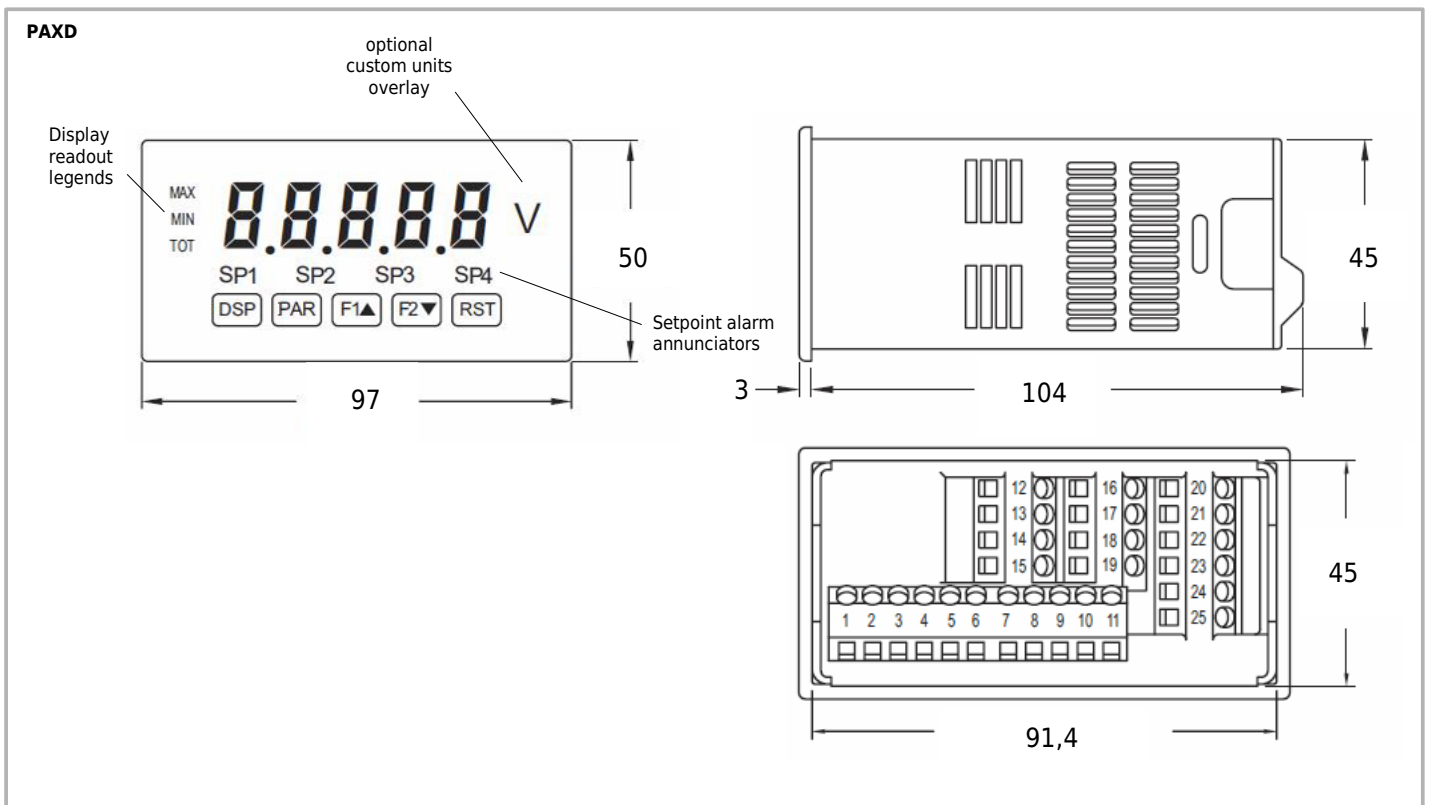## for industrial applications

Series PAXD

Key-Features:

- *5 digits, 14 mm high LEDs, annunciators*
- *for potentiometer inputs*
- *20 measurements per second*
- *3 programmable user inputs*
- *Protection class IP65 (front side)*
- *Working temperature 0 to 50 °C,*
- *Easy programming directly, or via PC*
- *Plug-in output-cards: analog, USB, RS485, Relay (thresholds), Transistor, RS232, Profibus*
- *Summation, min-/max value display*
- *16 point linearisation*

Content:

TECHNICAL DATA PAXD

|	
Display	5 digits, 14 mm high, red LEDs
Panel cut-out	92 mm x 45 mm
Annunciators	MAX, MIN, TOT (sum), SP1, SP2, SP3, SP4 (the respective output SP is active)
Programmable user inputs	3, logic state: jumper selectable for sink/source logic
	PNP: active V_{in} >3.6 VDC, inactive V_{in} <0.9 VDC, NPN: active V_{in} <0.9 VDC, inactive V_{in} >3.6 VDC
Input signal	Potentiometer (R_{min}=1kΩ)
Output signal (via plug-in cards)	Relay output, transistor output, analog output
Serial Interfaces (via plug-in cards)	USB port (programmable), RS485, RS232, Profibus
Update rate	200 ms to within 99% of final readout value, max. 700 ms
Supply voltage	PAXD001B: 11…36 VDC/24 VCA, PAXD000B: 85…250 VAC
Measurement rate	20 readings/sec, 16 Bit resolution
Sensor supply	24 VDC, ±5%, regulated, max. 50 mA
Protection class	IP65 (face only)
Humidity	max. 85%, no condensation
Working temperature	0…+50°C, unit supplier with 3 plug-in cards: 0…+45°C
Housing	Plastics, 97 mm x 50 mm x 104 mm
Weight	300 g, unit only without plug-in cards
Electromagnetic compatibility	conform to CE , EN61326:2006, UL certificate
Delivery	Display, mounting material, sealing, manual

TECHNICAL DRAWING

PAXD

optional custom units overlay

Display readout legends

MAX
MIN
TOT

SP1 SP2 SP3 SP4

DSP PAR F1▲ F2▼ RST

Setpoint alarm annunciators

50

97

3

104

45

45

91,4

ELECTRICAL CONNECTION PAXD

Connection

| 1	AC	Power Supply
		PAXD0000: 85 to 250 VAC
		PAXD0010: 11 to 36 VDC
2	AC	Power Supply
		PAXD0000: 85 to 250 VAC
		PAXD0010: 11 to 36 VDC
3	VOLT/OHM	Signal input+: Voltage/Resistance
4	CURRENT	Signal Input+: Current
5	COMM.	Signal Input GND
6	+EXCITATION	Sensor Supply 24 VDC/50 mA
7	USER COMM	GND User Input
8	USER 1	User Input 1
9	USER 2	User Input 2
10	USER 3	User Input 3
11		not connected
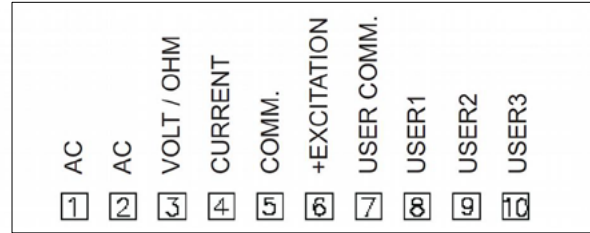
Caution:
Sensor input common is NOT isolated from user input common. In order to preserve the safety of the meter application, the sensor input common must be suitably isolated from hazardous live earth referenced voltages.

JUMPER SETTINGS

Before putting the meter into operation the jumper settings have to be checked and if needed adjusted
The following points have to be set by the jumpers:

• Input range jumper (factory setting +/-300 V)
• Excitation output jumper (factory setting 24 V)
• User input logic jumper (factory setting NPN)
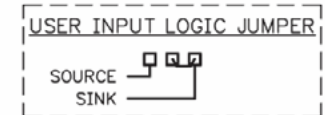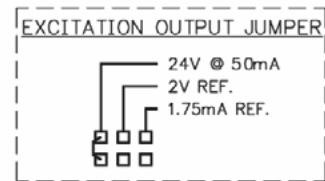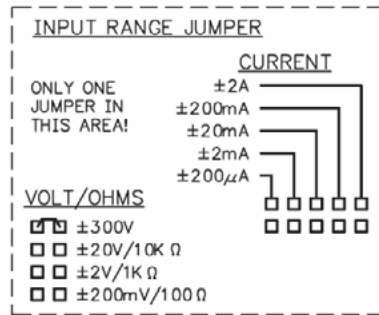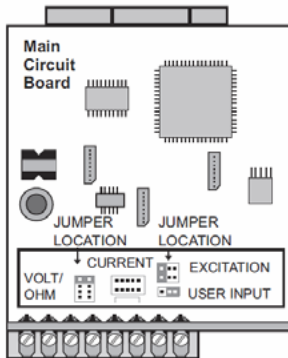
Indication of the jumper factory settings.

PAXD CONNECTION TO A POTENTIOMETER

Wiring diagram potentiometer (3 wires)

• Terminal 3: Wiper/cursor
• Terminal 5: Low end of pot.
• Terminal 6: High end of pot.
• Excitation Jumper: 2 V REF.
• Input Range Jumper: 2 V
• Programming Module 1 Input Range: 2 Volt

Note: The Apply signal scaling style should be used because the signal will be in volts.
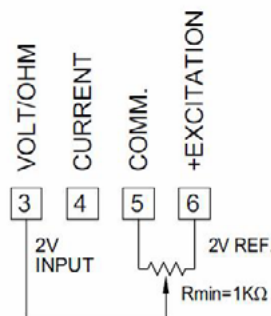
PLUG-IN CARDS

The display can be fitted with up to three optional plug-in cards. The details for each plug-in card can be reviewed in the specification section below. Only one card from each function type can be installed at one time. The plug-in cards can be installed initially or at a later date.

Analog Output Card (retransmitted linear DC output): PAXCDL10

• Types: 0 to 20 mA, 4 to 20 mA, or 0 to 10 VDC.

• Isolation to sensor + user input commons: 500 Vrms for 1 min., working range 50V, not isolated from all other commons.

• Accuracy: 0.17 % of FS (10 to 28 degree Celsius), 0.4% (0 to 50 degree Celsius)

• Resolution 1/3500

• Compliance: 10 VDC, 10 kOhm load min., 20 mA, 500 Ohm max. load

Setpoint Alarm Output Cards

Quad sourcing open collector card: PAXCDS40

• 4 isolated sourcing x PNP transistors

• Internal suppy: 24 VDC +/- 10%, 30 mA max. total

• Isolation to sensor + user input commons: 500 Vrms for 1 min., working range 50V, not isolated from all other commons.

• External supply: 30 VDC max., 100 mA max. each output

Quad sinking open collector card: PAXCDS30

• 4 isolated sinking x NPN transistors

• Isolation to sensor + user input commons: 500 Vrms for 1 min., working range 50V, not isolated from all other commons.

• Rating: 100mA max. at V_{sat}=0,7 V_{max},, V_{max}: 30V

Dual relay card: PAXCDS10

• 2 x FORM-C relays, 5 A at 120/240 VAC or 28 VDC (Ohm load) at 120 VAC (80 VA inductive load)

• Life expectancy: 100.000 cycles min. at full load.

Quad relay card: PAXCDS20

• 4 x FORM-A relays, 3 A at 250 VAC or 30 VDC (Ohm load) at 120 VAC (80 VA inductive load)

• Life expectancy: 100.000 cycles min. at full load.

Interface Cards:

• RS232, programmable, version with Sub-D connector: PAXCDC2C or with terminal: PAXCDC20

• Multipoint RS485, programmable: PAXCDC10

• DeviceNet, programmable: PAXCDC30

• Profibus-DP: PAXCDC50

Isolation 500V, not isolated from all other commons.

USB CARD: PAXUSB00

• only suited for slow measurement (for high dynamic measurement please use the RS232 card).

• USB virtual COM Port

• Connection: type mini B

Installing plug-in cards:

• With the display removed from the case, locate the plug-in card connector for the card type to be installed.
 The types are keyed by position with different main circuit board connector locations. When installing the
 card, hold the display by the rear terminals and not by the front display board. If installing
 the Quad sourcing card, set the jumper for internal or external supply operation before continuing.

• Install the card by aligning the card terminals with the slot bay in the rear cover.

• Slide the display back into the case. Be sure the rear cover latches fully into the case.

• Apply the plug-in card label to the bottom side of the display in the designated area.
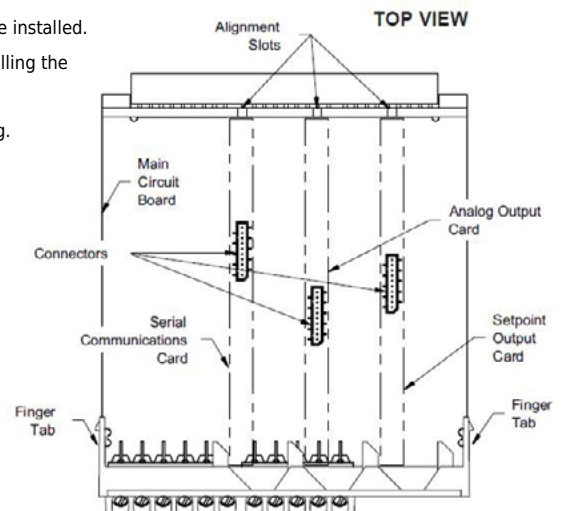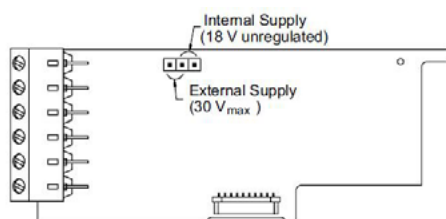
PROGRAMMING

Directly by the display keys

DISPLAY MODE:
The meter normally operates in the Display Mode. In this mode, the meter displays can be viewed consecutively by pressing the DSP key. The annunciators to the left of the display indicate which display is currently shown; Max Value (MAX), Min Value (MIN), or Totalizer Value (TOT). Each of these displays can be locked from view through programming. (See Module 3) The Input Display Value is shown with no annunciator.

PROGRAMMING MODE:
Two programming modes are available:

Full Programming
Mode permits all parameters to be viewed and modified. Upon entering this mode, the front panel keys change to Programming Mode operations. This mode should not be entered while a process is running, since the meter functions and User Input response may not operate properly while in Full Programming Mode.

Quick Programming Mode
permits only certain parameters to be viewed and/or modified. When entering this mode, the front panel keys change to Programming Mode operations, and all meter functions continue to operate properly. Quick Programming Mode is configured in Module 3. The Display Intensity Level d-LEu parameter is available in the Quick Programming Mode only when the security code is non-zero. For a description, see Module 9—Factory Service Operations. Throughout this document, Programming Mode (without Quick in front) always refers to "Full" Programming Mode

By Software

Additionally, the meters have a feature that allows a remote computer to directly control the outputs of the meter. With an RS232 or RS485 card installed, it is possible to configure the meter using a Windows® based program. The configuration data can be saved to a file for later recall.

You will find a detailed description of the programming in the manual that is included in the delivery.

PACKAGE FOR THE CONNECTION PAX TO PC

SFCRUSB1

Package for the connection of PAX displays to the USB interface of a PC:
• includes USB plug-in card PAXUSB00
• USB interface cable
• Software Crimson 2: The Crimson software is a Windows based program that allows configuration of the PAX display from a PC. Crimson offers standard drop-down menu commands, that make it easy to program the meter. The meter's program can then be saved in a PC file for future use. A PAX serial plug-in card or PAX USB programming card is required to program the meter using the software.

Please keep in mind that the USB interface is limited in its speed of data transfer. In fast applications data might get lost. In such cases the faster RS232 interface should be chosen.

Note: the USB interface is restricted in its ability to communicate with the Software ProLOG.

ProLOG

Analysis- and Visualisation software for Windows-based Systems

Visualisation of the measurement data on a Windows PC, with the option of storing the data in a CSV file.

HOUSING

Aluminium housing GEH0IP65

• black powder coating
• internal grounding terminal.
• protection class: IP65
• dimensions: (W x H x D) 168 mm x 83 mm x 220 mm
• delivery: housing, mounting material
• without cable passages (must be drilled individually)

Table housing TG9648

• The housing is suited for all displays with front dimensions 96 x 48 mm
• self assembly
• dimensions: (W x H x D) 114 mm x 62 mm x 176 mm
• delivery: housing, mounting material
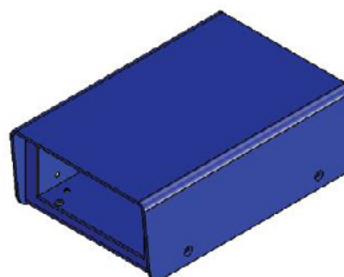
ORDER CODES

PAXD0000	Voltage supply: 85 to 250 VAC
PAXD0010	Voltage supply: 11 to 36 VDC/24 VAC

ACCESSORIES

Plug-in cards

PAXCDC10	Serial communication card RS485
PAXCDC20	Serial communication card RS232, terminal
PAXUSB00	Interface card USB
PAXCDC50	Interface card PROFIBUS-DP
PAXCDL10	Analog output card
PAXCDS10	Dual relay, Form-C, normally open & closed
PAXCDS20	Quad relay, Form-A, normally open only
PAXCDS30	Quad sinking NPN open collector
PAXCDS40	Quad sourcing PNP open collector
PAXCDC2C	Serial communication card RS232, 9 pole SUB-D connector

Miscellaneous

PAXLBK10	Units label kit
Einstellung	Pre-adjustment according to customer demands

Software

Crimson 2	on request
ProLOG	on request

Packages

SFCRUSB1	includes USB plug-in card PAXUSB00
	USB interface cable
	Software Crimson 2

Housings

GEH0IP65	Aluminium housing, IP65
TG9648	Table housing