PSC Series Multi-Channel Pressure Scanner Overview

PSC

Multi-Channel Pressure Scanner

- Simultaneous acquisition of multiple pressure signals
- Easy configuration via USB
- Includes software and LabVIEW driver

PSC series: small housing: PSC4, PSC5 (-CAN)

large housing: PSC8, PSC16, PSC24 (-CAN/

-USB/-LAN/-RS232)



Description

The PSC pressure scanners can acquire multiple pressure signals simultaneously. Temperature-compensated transducers offer high accuracy and minimal offset drift. Due to the extremely high test pressures, the sensors can withstand overloads.

Depending on the type, the PSC multi-channel pressure scanners are equipped with up to 24 pressure channels. The reference pressure lines of all sensors are connected to a single pressure port in standard configuration. A dedicated differential pressure version with reference ports for each line is available as well.

The measuring range of each sensor can be chosen individually with various pressure ranges available. We offer unidirectional sensor types as well as bidirectional ones, whereby all channels of a pressure scanner must be equipped with equal sensor types.

Attained data is transmitted as ASCII text in the unit Pascal [Pa]. The transmission rate can be set in the range between 1 and 50/100 Hz (depending on the type of PSC).

PSC-USB and CAN devices are both equipped with a USB interface to be easily configurable. When connected via USB the pressure scanner identifies itself to the host PC as a virtual COM port. Thus, any software supporting serial protocols can be used for communication. The LAN-version sends the data using the TCP-IP protocol. A direct connection can be set up via Telnet (Port 10001).

A recording software and an example program in LabVIEW (source code) are delivered with the pressure scanner. A DBC file is supplied for PSC-CAN devices.

Customer-specific adaptations are possible on request and all PSC systems are optionally available with CAN (M8), LAN (RJ45) or RS232 (D-Sub) connectors.

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Technical Data

Number of pressure channels				
PSC4	4 uni- or bidirectional			
PSC5	5 uni- or bidirectional			
PSC8	8 uni- or bidirectional			
PSC16	16 uni- or bidirectional			
PSC24	24 uni- or bidirectional			
Measuring range				
All versions	125 Pa – 15 kPa (1,25 – 150 mbar) uni- and bidirectional (Other sensors available on request)			
Accuracy and sample rates				
Non-linearity & hysteresis	max ±0.25% FSS (typical ±0.1 %)			
Sample rate per channel	1-100 Hz (PSC4, PSC5) 1-50 Hz (PSC8, PSC16, PSC24)			
Power supply				
PSC4-CAN	CAN 7-24 V, 50 mA			
PSC5-CAN	CAN 7-24 V, 50 mA			
PSC8-CAN/-LAN PSC8-USB PSC8-MV	7-24 V, 1 A via USB 7-24 V, 1 A (MV = version with built in magnetic valves)			
PSC16-CAN/-LAN PSC16-USB	7-24 V, 1 A über USB			
PSC24-CAN/-LAN PSC24-USB	7-24 V, 1 A via USB			
Environmental conditions				
Temperatur	5° C50° C			
Luftfeuchtigkeit	095%, non-condensing			
Betriebsmedium	Luft und nicht-korrosive Gase			
Dimensions				
Housing PSC4, PSC5	60 x 30 x 80 mm³ (w x h x d)			
Housing PSC8, PSC16, PSC24	130 x 55 x 170 mm³ (w x h x d)			
Pressure connections	Hose barb d = 2.0 mm			
Recommended tubes	Soft-PE and silicone tubes 1.5 x 3.5 mm			

Driver and software		
Virtual COM-Port-Driver		
Configuration software		
LabVIEW-example program as source code		
Supported operating systems		
Windows XP, 7, 8, 10, Linux		

Serial Interface

The virtual COM port can be operated at any baud rate. We recommend 19200, 8 data bits, no parity, 1 stop bit. DTR (Data Terminal Ready) must be asserted.

Command	Function	Answer
CAL a x	Set scaling factor for sensor a to value x	#Scaler= Offset=
CAL? A	Read scaling factors for sensor a	#Scaler= Offset=
EE_LOAD	Load calibration data from EEPROM	#EEPROM:loaded
EE_SAVE	Save calibration data to EEPROM	#EEPROM:saved
*IDN?	Read device ID	#PSC24-LAN 2.4.0 #SN35000
RATE x	Define sample rate range x = 205000 [ms] → 1 [Hz]	#Rate=x ms #Error: Rate-Range
RATE 0	Activate request and trigger mode actual values are read only after manual command "?" is sent	#Request-Mode active
?	Read actual value (request-mode only)	0.00 0.00 0.00 0.00
*RST	Load default settings	#RESET
SCAN_A x SCAN_B x SCAN_C x	Defines a scanlist (channel selection) binary, each bit represents one channel	
TARA	Zero adjustment for all sensors	#TARA
FILTER x	Activate exponential filter x = 0: deactivated; x > 0: filter ranage in ms	#FILTER=x

Every command is terminated by a line break (CR, LF or CR+LF). The sensor enumeration of all devices starts at 1.

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Additional commands for PSC-CAN Versions:

Command	Function	Answer
CAN_ID x	Set CAN-ID	#OK
_	Set interface x = 0: normal (11 bit, CAN 2.0A) x = 1 extended 23 bit (23 bit, CAN 2.0B)	#OK
CAN?	Request CAN configuration	#ID:0x[]_Speed:[baud]_IDT: [0,1]
	Set CAN bus rate x = 0: 125 kBaud x = 1: 250 kBaud x = 2: 500 kBaud x = 3: 1 MBaud	#OK