

PROFIBUS-DP Slave Interface Modules

proficonn[®]

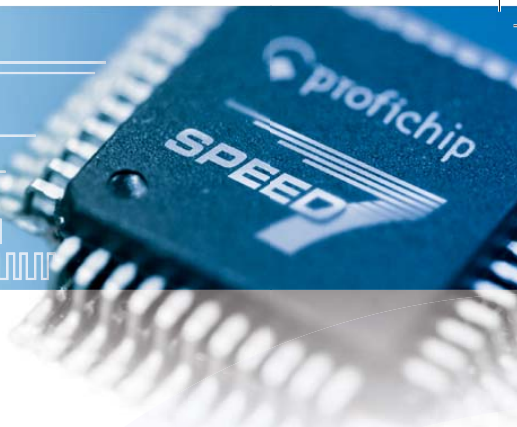
- SPI interface (up to 6 MBit/s)
- Isolated RS485 Interface up to 12 MBit/s
- Status LEDs for Power and DataExchange
- Vcc 3.3V
- Supporting PROFIBUS-DP-V0, DP-V1 and DP-V2
- 4kB communication RAM
- Software stack

proficonn-DSUB

- With 9-pin DSUB-connector for direct enclosure mounting
- Flat cable connector for SPI communication and power supply
- Dimensions: 58 x 31 x 16 mm

proficonn-DIP28

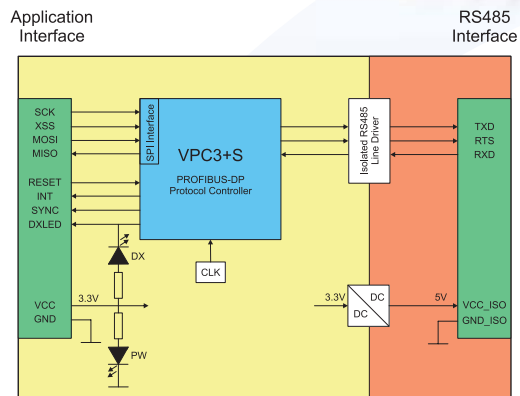
- 28 pin Dual-Inline-Package format
- for mounting on PCB via standard IC socket
- Dimensions: 36 x 18 x 10 mm



Overview

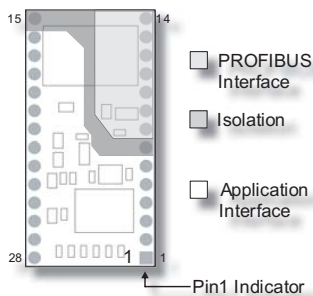
proficonn-DSUB and proficonn-DIP28 are very compact PROFIBUS-DP slave interface modules based on profichip's VPC3+S protocol ASIC. Both modules provide a complete, PROFIBUS approved RS485 interface including DC/DC converter and isolated line driver.

Efficient and signal saving communication with the customer application is accomplished by means of a serial SPI channel. For more details please refer to the VPC3+S User Manual.



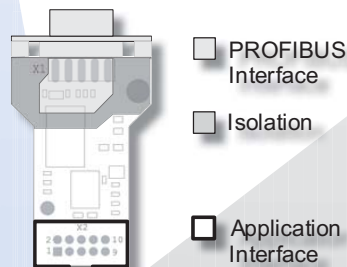
proficonn DIP28

The proficonn-DIP28 module is based on a standard DIP28 footprint. The module can be mounted on the PCB directly or plugged into a standard IC socket.



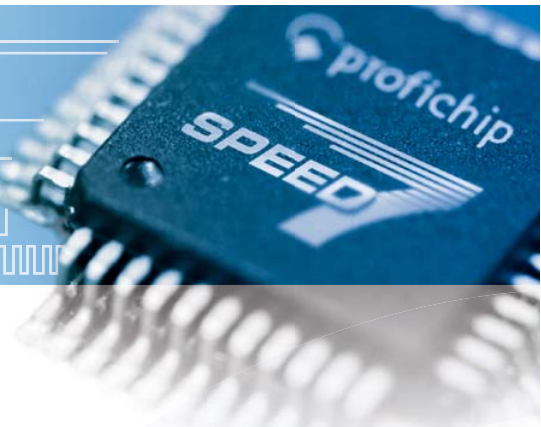
proficonn DSUB

The proficonn-DSUB module is suited for direct enclosure mounting via shielded 9-pin DSUB female connector (X1). A 10-pin 2.54 mm male socket (X2) is provided to connect to the device electronic via flat ribbon cable.



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EasyConn PB

Profibus Connector



EasyConn PB:

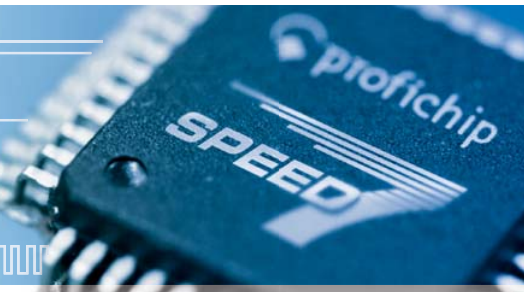
The bus connector EasyConn PB is used for the connection of Profibus participants to the bus line. The fully visible diagnostic LEDs facilitate the installation considerably. Users can immediately check the status of bus activity, termination resistors, power supply and bus status. The integrated controller supports transmission rate of up to 12MBit/s.

Features:

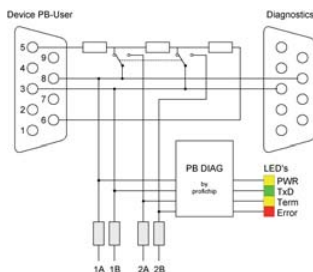
- Cable slots with transparent covers for high visibility (wiring, position of screen and cable)
- Full metal construction for noise immunity and harsh environment
- State monitoring via integrated LEDs for bus diagnosis
- Comfortable IDC technology for fast and reliable wire connection
- Captive single-screw-mounting system - no loose parts
- Integrated switchable termination resistor
- Integrated programming / diagnostic port
- Supporting stranded wire types:
LAPP Art. No. 2170222, 2170822, 2170322

Standard bus line for fixed and flexible wiring Features:

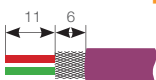
- Bus line according to DIN 19245 and EN 50170
- Two wires stranded (Red/Green)
- Sheathing PVC mixture (violet, RAL4001)
- Flame-retardant according to VDE 0472, part 804, Test procedure B (IEC 332.1)
- Use of stranded wire
(Lapp Cable Art. No. 2170222, 2170822, 2170322)



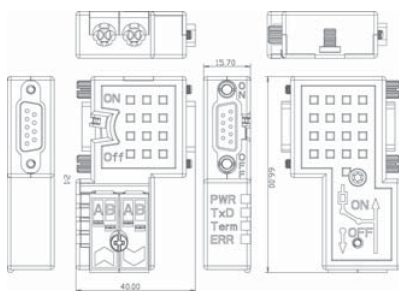
Wiring diagramm - Connector 90°



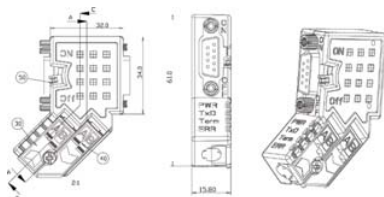
Insulation Stripping



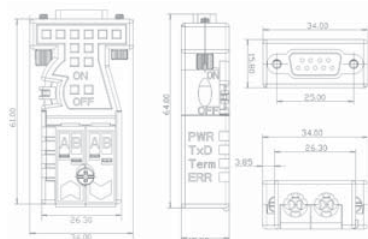
PA003135 - 90°



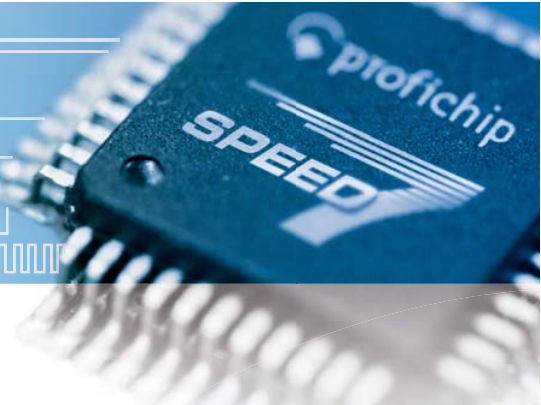
PA003121 - 45°



PA003122 - 0°



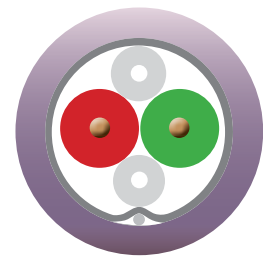
Technical Data		EasyConn PB		
Connections				
Profibus		9pole SubD pin headers		
PG/diagnostics		9pole SubD socket*		
Insertion (withdraw.) cycle		mind. 200		
Cable diameter		8mm		
Fixing screws/max. tightening torque		4-40 UNC/0.4Nm		
Enclosure				
Material		die-cast zinc		
Protection		IP 20		
Voltage supply				
Power input		DC 4.75 bis 5.25 V (Supply comes from the terminal max. 30mA)		
Temperature range		-20°C bis +75°C		
Insulation stripping lengths		incomming bus line outgoing bus line		
Outer sheath		17mm	17mm	
Shield		11mm	11mm	
Connection technology		IDC technology		
Bus line		fixed wire Type A (EN 50 170)		
		stranded wire (f. Lapp) Type A (EN 50 170)		
Linear expansion				
Transmission speed in kBit/s		max. segment lengths in m		
9,6/19,2/45,45/93,75		1200		
187,5		1000		
500		400		
1500		200		
3000/6000/12000		100		
Name	Color	LED off	LED on	LED blinking (5Hz)
PWR	green	No Power (<4V)	Self-test finished, Power OK (4...5,5V)	Short-circuit of bus wire possible. Blinks simultaneously with ERR LED.
TxD	green	No bus activity	-	Data transfer active
Term	green	No termination	Termination active	Internal terminating resistor faulty. Blinks simultaneously with ERR LED.
ERR	yellow	No errors detected	Signal levels out of defined range, possibly termination failure in bus line.	Short-circuit of bus wire possible respectively internal resistor faulty.
The LED flashes sporadically/asymmetrically: The Profibus device is near the reference level, which is defined in the Profibus connector. Appearing differences were compensated by the protocol.				
Standard bus line				
Flame retardant		VDE 0472, Teil 804		
Test procedure		B (IEC332.1)		
Pair number/wire diameter		1x2x0.64mm		
External diameter		7.8mm		
Copper number		26kg/km		
Weight ca.		57kg/km		
Surge impedance		150 ±15Ω		
Op. capacitance (800 Hz)		max.30nF/km		
Operating peak voltage		250V (not for heavy current usage)		
Test voltage core/core U _{eff}		1500V		
Wire resistance (loop)		max.110Ω/km		
Mind. bend radius		75mm		
Temperature range		-40°C bis +70°C		
Ordering information				
EasyConn PB 90°		PA003135 PA003125 (without integrated diagnosis)		
EasyConn PB 45°		PA003121		
EasyConn PB 0°		PA003122		
Bus line (25m to 1000m)		PA00315x		
EasyStrip (Stripping tool)		PA003160		



Technical Data Sheet

Profibus-Cable

System Interface	
Bare copper wire (22 AWG)	Ø 0,65 mm
Insulation of foamed Polyethylen (PE) with skin	Ø 2,55 mm
System Interface	
2 wires, RD and GN twisted to a pair with fillers in gaps	
Alulaminat foil overlapped, Alu outside	
Shield braiding of tinned copper wires 0.15 mm dia	
Coverage about 55%	
Slitting cord under jacket	
Jacket	
Polyvinylchloride (PVC) VT	
Wall thickness about 1.0 mm	ø (8.0 ±0.4) mm
Printing: „sequential length in metres“ profichip PROFIBUS PLUS L2 * 22AWG (SHIELDED) (UL) E119100, CMG 75 °C or PLTC or AWM 20201 600V FT4 SUN RES *„internal lot number“	
Textintervals about 1000 mm	
Electrical data at 20°C	
Loop resistance	≤ 110 Ohm/km
Insulation resistance	≥ 16000 MOhm*km
Characteristic Impedance	
3 - 20 MHz	(150 ± 15) Ohm
31.25 - 38.4 kHz	(185 ± 18.5) Ohm
9.6 kHz	(270 ± 27) Ohm
Attenuation	
16 MHz	< 42 dB/km
4 MHz	< 22 dB/km
38,4 MHz	< 4 dB/km
9,6 MHz	< 2,5 dB/km
Inductance 31,25 kHz	≈ 750 µH/km
Capacitance 1 kHz	≈ 28 nF/km
Capacitance unbalance to ground	≤ 1500 pF/km
Operating Voltage (Peak)	≤ 100 V
UL-Rating	600 V
Test voltage (50Hz, 1min)	2000 V DC





Mechanical and thermal characteristics	
Conductor material acc. to DIN EN 13602 Cu-ETP-A...	
Screen material acc. to DIN EN 13602 Cu-ETP-A...-B	
Insulating material acc. to DIN EN 50290-2-23 (VDE 0819), table 2/A (HD 624.3)	
Jacket material acc. to DIN EN 50290-2-22 (VDE 0819), compoundtype TM52 (HD 624.2)	
Cold bend test acc. DIN IEC 60811-1-4 -40° C	
Flame retardant acc. to UL 1685 (CSA FT 4)	
UL-File E119100 Vol.1 Sec.16 Page 7	
UL-File E116441 Vol.1 Sec.6 Page 7	
UL-Style 20201	
Other characteristics	
Limited mineral oil and fats resistance	
Flame retardant acc. to IEC 60332-3-24 (Cat. C)	
Sunlight resistant acc. to UL 1581 Sec.1200	
Permissible temperature range	-40 °C up to + 80°C
Bending Diameter	≥ 150 mm
Pulling force with	≤ 100 N
PVC weight with Phthalate	32.1 kg/km
PVC weight without Phthalate	0.0 kg/km
Weight about	63 kg/km
Designation of order	
L45467-G 16-C425	1.000 meter on non-returnable reel
L45467-G 16-C425-F2	100 meter ring
L45467-G 16-C425-F4	200 meter ring
L45467-G 16-C425-L6	500 meter on non-returnable reel
02YS(ST)CY	1X2X0.64/2.55-150 VI KF40 FR



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