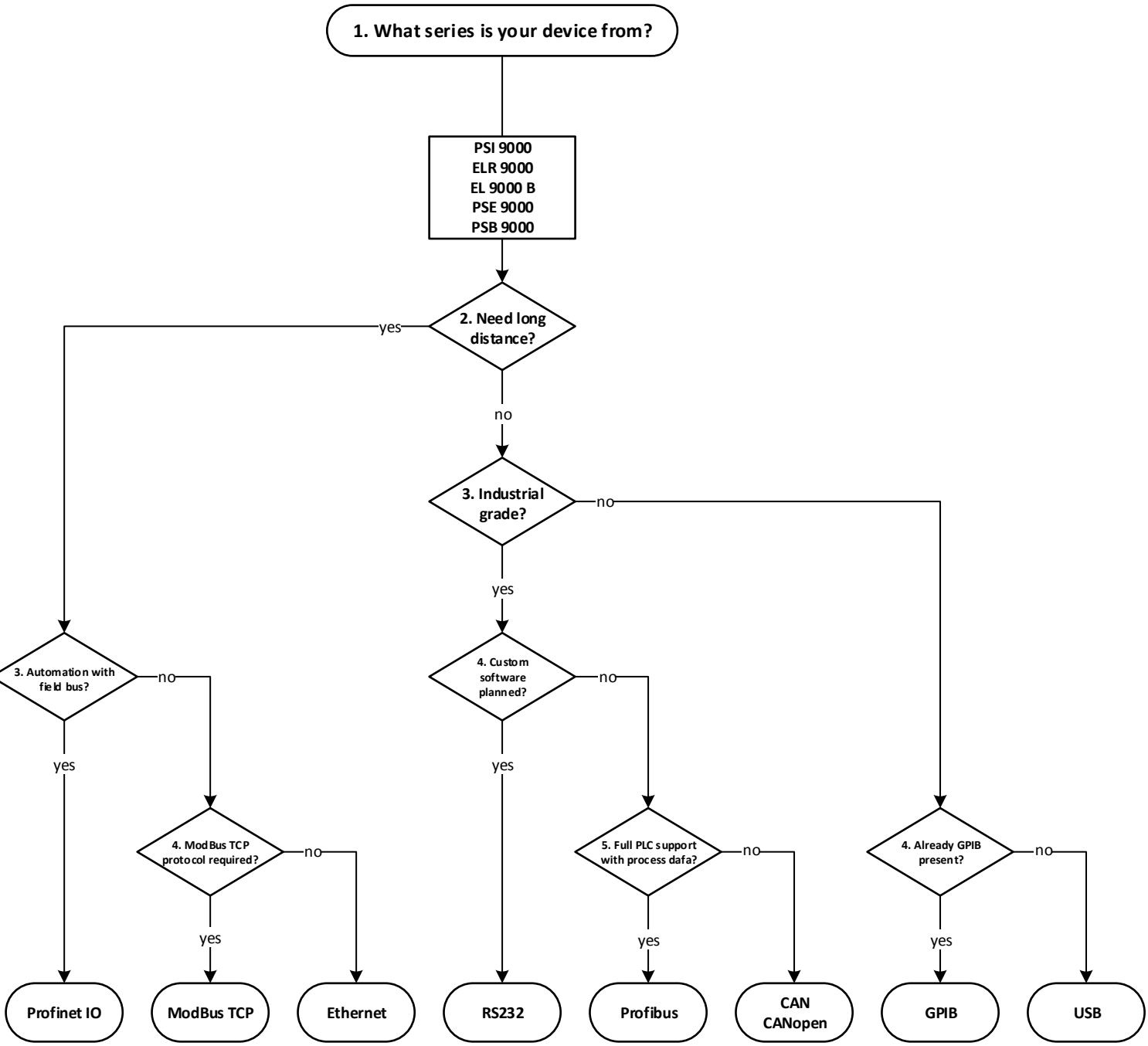
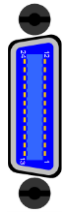
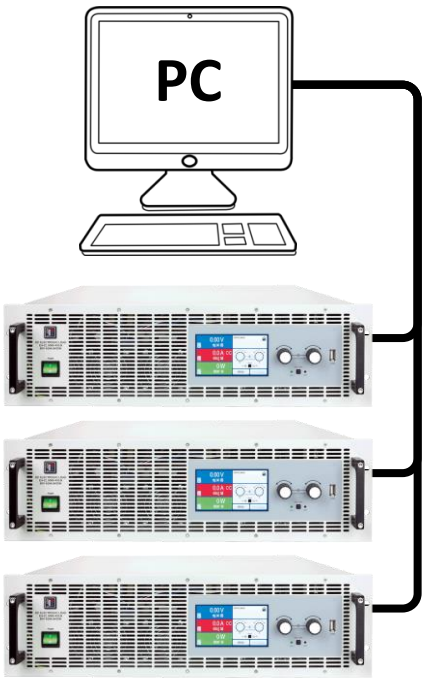
How to find the best remote control interface for your application?



	CAN	CANopen	Ethernet	ModBus TCP	Profibus Profinet IO	RS232	GPIB
Face							
Specs	• Type: Bus • 10 kBit – 1 MBit • CAN 2.0 A & 2.0 B • Integrated bus termination • DBC files • Cyclic data	• Type: Bus • 10 kBit – 1 MBit • CANopen standard • EDS/XDD file • Customisable database	• Type: Network • 10/100 MBit • TCPIP, HTTP, ICMP • Website with control functions • 1 or 2 port version • Integrated switch (2 port version)	• Type: Network • 10/100 MBit • TCPIP, HTTP, ICMP • Website with control functions • Supports ModBus TCP frame • 1 or 2 port version • Integrated switch (2 port version)	Profinet: • Type: Network • 1 or 2 port version • Integrated switch (2 port version) Profibus: • Type: Bus • Up to 12 Mbit	• Type: P2P • 9600 – 115200 Bd • No handshaking	• Type: P2P • Parallel bus • IEE 488 standard • Built-in
Pro	• Industrial grade • High data speed • Medium distance • Bus topology • Exchangeable with other interfaces	• Industrial grade • High data speed • Medium distance • Bus topology • Exchangeable with other interfaces	• High data speed • Long distance • Network topology • Exchangeable with other interfaces • SCPI supported • LabView supported • Plug ’n play	• High data speed • Long distance • Network topology • Exchangeable with other interfaces • Easy ModBus network integration • Plug ’n play	• Industrial grade • High data speed • Medium distance • Bus topology • Exchangeable with other interfaces • PLC compatible	• Medium distance • Exchangeable with other interfaces • SCPI supported • LabView supported • Low costs	• SCPI supported • Very easy setup and integration • Unified support of different devices
Contra	• No plug ’n play on PC side • CAN software required • High overall costs	• No plug ’n play on PC side • CANopen software required • High overall costs	• Typical network issues • Complicated setup	• ModBus TCP software required • Typical network issues • Complicated setup	• No plug ’n play on PC side • Extra software required • High overall costs	• Low data speed • One RS232 port required per device • No bus, no network	• Short distance • Very high costs • Built-in • Complicated cable system

Digital communication topologies

Bus



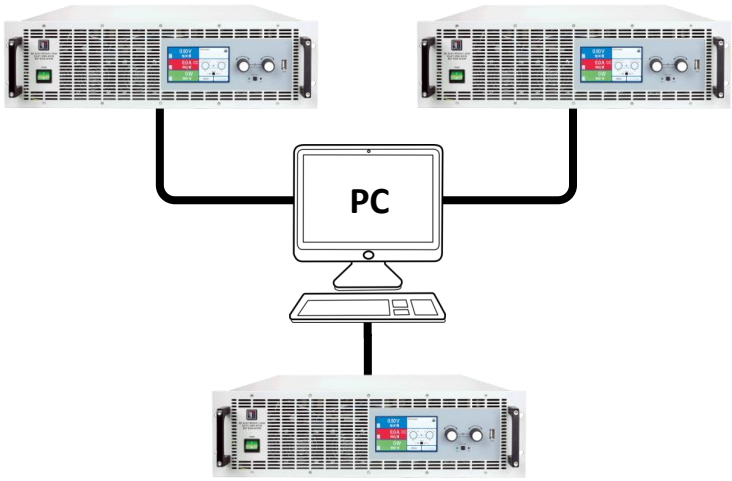
Pro:
- Separate communication channels realisable
- Short cables
- Broadcast messages (one command to all bus members) possible

Contra:
- If the connection from the PC to the first units is interrupted, all other units are offline as well

Typical area of use:
- Parallel connection of multiple identical models

Which of our interfaces use a bus connection:
- CAN, CANopen, Profibus, GPIB

Point-to-point



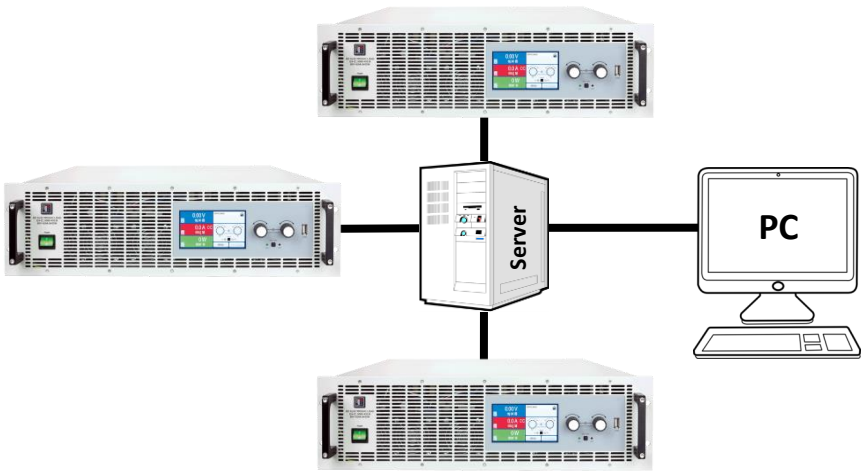
Pro:
- Every target device has its separate communication line

Contra:
- Much cabling required, one line for every device
-

Typical area of use:
- Connection to only one device or a few devices or situations where it is required to change the setup very often
- Laboratory and on-desk test applications

Which of our interfaces use a point-to-point connection:
- USB, RS232

Network



Pro:
- Very long distances
- Many devices easily integrateable
- Low costs

Contra:
- Very much cabling
- Communication and reliability is very much depending on network hardware like switches or patch panels

Typical area of use:
- Parallel connection of multiple identical models or test applications of single devices with direct connection to PC or local network switch

Which of our interfaces use a network connection:
- Ethernet, Profinet IO, ModBus TCP

Note: Ethernet interfaces with 2 port incorporate a network switch and can turn a network line into a bus with open end or, for higher dropout safety, into a ring. No matter how many devices are connected in that bus/ring, at the point where they are connected to the network, it requires a max. of two ports on a higher level switch.