



Preamble

The changeover from older to newer device series (see affected series in the table below) can lead to a certain number of complications regarding the remote control via a digital interface in custom software. Even if SCPI language is used, the changeover cannot be done without further actions.

This application note is intended to show the differences and similarities and what to do for the changeover.

Note: A list of digital interfaces supported by the particular device series can be found in the various device manuals.

Overview

FAQ	Old series	New series
Which newer series replaces an older one?	PSI 9000 (models up to 2012)	PSI 9000 2U
	PS 8000 DT	PSI 9000 DT
	PS 8000 T	PS 9000 T
	PSI 8000 DT	PSI 9000 DT
	PSI 8000 T	PSI 9000 T
	PSI 800 R	-
	PS 8000 3U	PS 9000 3U or PSE 9000 3U
	PSI 8000 3U	PSI 9000 3U
	PS 8000 2U	PS 9000 2U
	PSI 8000 2U	PSI 9000 2U
	EL 3000	EL 3000 B
	PS 3000 B	PS 3000 C
	Which interface supported by the newer series can replace an interface supported by the older series?	CAN (IF-C1 or IF-C2)
-		CANopen (IF-AB-CANO)
USB (IF-U1 or IF-U2)		USB (equipped as standard) or optional as IF-KE4 or IF-KE5
RS 232 (IF-R1 or IF-R2)		RS 232 (IF-AB-RS232)
GPIB (IF-G1)		3W (option, installed)
Ethernet (IF-E1B or IF-E2B)		Ethernet 1-Port (IF-AB-ETH1P) Ethernet 2-Port (IF-AB-ETH2P) ModBus TCP 1-Port (IF-AB-MBUS1P) ModBus TCP 2-Port (IF-AB-MBUS2P) IF-KE4 (USB/LAN/ANALOG) IF-KE5 (USB/LAN)
Profibus (IF-PB1)		Profibus (IF-AB-PBUS)
-		ModBus TCP 1-Port (IF-AB-MBUS1P) ModBus TCP 2-Port (IF-AB-MBUS2P)
Which communication protocols are supported by the device series?	Custom binary telegram	ModBus RTU (all) / ModBus TCP *
	SCPI (all series, but not with all interfaces)	SCPI (all)

(* Series with Ethernet port, may require a firmware update to get ModBus TCP functionality)



Conclusion

From all the supported communication protocols, SCPI is the only one which is generally compatible between older and newer series. When using bus systems like Profibus, the incompatibility reduces to the actual data to transfer.

Changeover

What is required to do after an older device has been replaced by the corresponding one from a newer series, given the same interface has been selected? The required effort primarily depends on the interface and secondarily from the communication protocol. Hence it's recommend not to use a different interface than before, or at least switch only in case another interface supports the same communication protocol as before.

Protocol or interface	Requirements, similarities or differences	
	Old series	New series
SCPI	Different commands to activate remote control. Both systems would not react to the other command.	
	LOCK ON	SYSTEM:LOCK ON
	Basically less commands available	Significantly more commands available
		Set values could be rejected due to adjustable "Limits", which basically means that more commands are required to configure the device
	Different termination characters (end token) supported for GPIB. With SCPI over Ethernet, the termination character is tolerated but ignored, because not required.	Only termination character 0xA (line feed) supported for GPIB (3W option). With SCPI, the termination character is tolerated but ignored, because not required.
CAN	No compatibility of data in the telegram	
	CAN 2.0 A	CAN 2.0 A or CAN 2.0B
	DBC files available	DBC files available
	Custom binary protocol	Modified ModBus RTU
Profibus	Use of SFBs, SFCs and GSD/GSE are the same, but different slot configuration in the GSD/GSE. Translation of actual and set values slightly different.	
	Low number of objects	High number of objects
RS232 / USB	Binary protocols: No compatibility of data in the telegram	
	SCPI: not supported	SCPI: supported

EA



Elektro-Automatik

 support@elektroautomatik.com