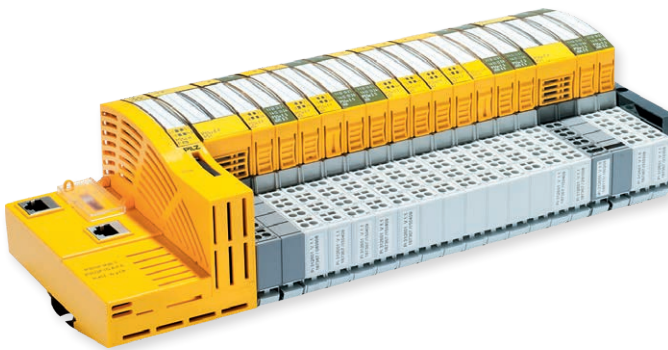


► Decentralised I/O system PSSUniversal

The decentralised I/O system PSSUniversal allows you to perform safety-related and automation functions at field level. Communication with the control level takes place via common fieldbus protocols. Here all sensor and actuator signals are connected to one module. This ensures clear cabling and avoids errors during installation.



Your benefits at a glance

- Processing of safety-related and automation functions decentrally at field level
- Reduction of switching times
- Optimum availability thanks to safe block switching
- Fast commissioning and easy configuration thanks to the independent periphery test

The decentralised I/O systems can be connected to different higher-level controllers as a cost-effective variant of a remote I/O system. The PSSUniversal system is therefore a solution for connecting periphery and safety-related functions to a central controller.

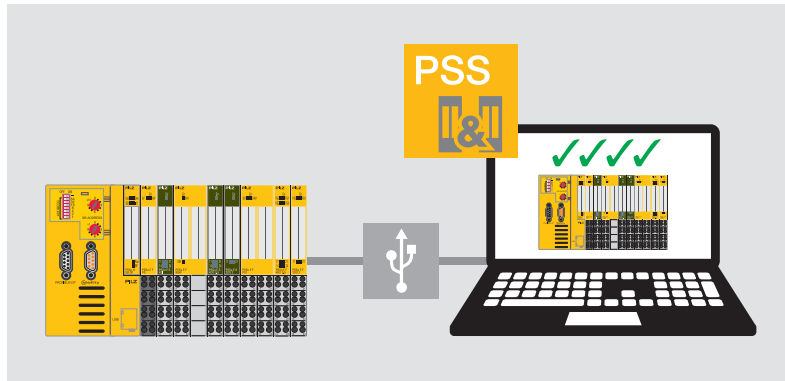
Safe block switching of individual plant sections

Safe block switching is used to shut down the supply voltage to a group of standard outputs (e.g. several motors) if a hazardous event occurs. When a hazardous event does occur (e.g. an E-STOP pushbutton is pressed), safe block switching ensures safe shutdown of a complete plant section while other sections can continue to operate.



Simple configuration, fast commissioning

The decentralised I/O systems are configured using the PSSUniversal Assistant. Thanks to the PSSUniversal Startup Tool, the system can be commissioned quickly. You can already perform the first cable and function tests before the plant or machine is set up. That way all of the periphery is already tested and functional when you come to commission the plant. Commissioning operations can be carried out independently and simultaneously – reducing dependencies and saving time!



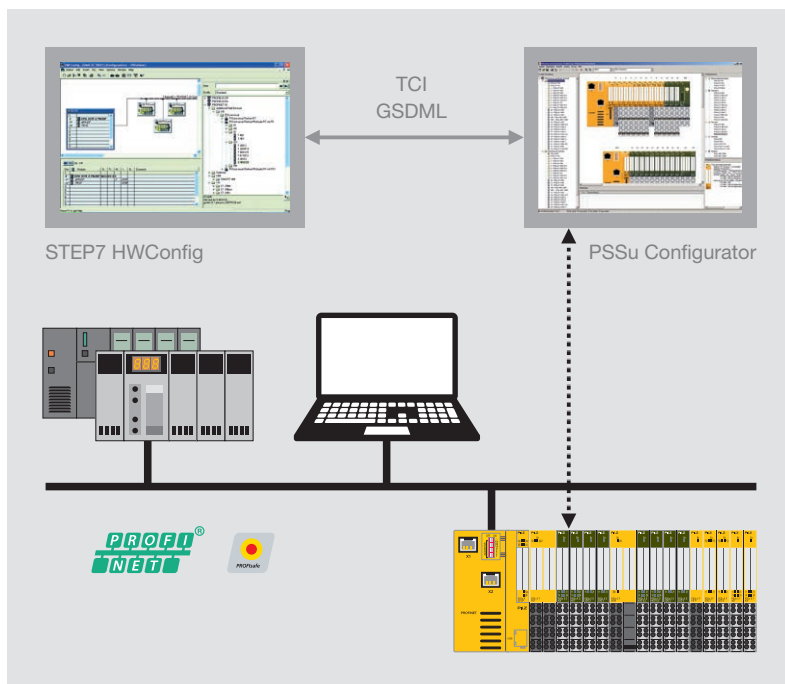
Cable and function tests performed easily via the USB port on the notebook.

PSSUniversal – also for PROFINET users

Optimised address management on the PROFINET versions of the decentralised I/O system is particularly convincing. The PROFINET/PROFIsafe address is only required once per decentralised station. This means, for example, that safety settings for each device only need to be made at a single point, i.e. in the head module. There is no need for address setting and management on each individual I/O module. As a result, the failsafe addresses are optimally utilized. This saves planning and management costs.

PSSu Configurator

- ▶ Called up via TCI
- ▶ Configures the system
- ▶ Generates station-specific GSDML files
- ▶ Manages all safety-related CRC sums



Comprehensive tool support for configuration, commissioning and diagnostics.

► Technical details – PLC controllers and I/O systems

Decentralised I/O system PSSUniversal – head modules



PSSu H F PN

Type	Application area		Communication interfaces
	Failsafe functions	Automation functions	
PSSu H F PN	◆	◆	► 1 x PROFINET ► 1 x PROFIsafe
PSSu H F PN o	◆	◆	► 1 x PROFINET ► 1 x PROFIsafe ► Fibre-optic
PSSu H S PN		◆	2 x PROFINET

Automation system PSS 4000 – head modules with control and I/O function



PSSUniversal PLC



PSSUniversal I/O

Type	Application area		Communication interfaces
	Failsafe functions	Automation functions	
► PSSuniversal PLC			
PSSu H PLC1 FS SN SD	◆	◆	2 x SafetyNET p
PSSu H PLC1 FS DP SN SD	◆	◆	► SafetyNET p ► PROFIBUS-DP (slave, DPV0)
PSS67 PLC1 16FDI	◆	◆	2 x SafetyNET p
► PSSuniversal I/O			
PSSu H FS SN SD	◆	◆	2 x SafetyNET p
PSS67 IO1 16FDI	◆	◆	2 x SafetyNET p

Common features

- PSSUniversal module bus for connection of up to 64 I/O modules for safety-related and non-safety-related functions
- Integral power supply
- Integrated switch function for SafetyNET p linear topology
- SD card to store the device project and configuration data
- International safety standards (up to SIL CL 3 of EN/IEC 61508, up to PL e of EN ISO 13849), lifts standard EN 81/2 and EN 50129
- Dimensions (H x W x D) in mm: 125.6 x 130 x 83.7

PSSUniversal

Features	Certification	Order number		
		Regular version	T-type ¹⁾	R-type ²⁾
▶ PSSUniversal module bus for connection of up to 64 I/O modules for safety-related and non-safety-related functions ▶ Dimensions (H x W x D) in mm: 128.4 x 75.2 x 79.4	BG, CE, EAC, TÜV, cULus Listed	312 043	-	-
	CE, EAC, TÜV, cULus Listed	312 042	-	-
	CE, cULus Listed	312 041	-	-

Features	Certification	Order number		
		Regular version	T-type ¹⁾	R-type ²⁾
▶ Can be configured using the graphics program editor PASmulti ▶ Programming in PAS IL (instruction list), PAS LD (ladder diagram) and PAS STL (structured text) in accordance with EN/IEC 61131-3 ▶ Programming via Ethernet TCP/IP ▶ Max. number of failsafe tasks: 9 ▶ Max. number of standard tasks: 9	BG, CE, EAC (Eurasian), KOSHA, TÜV, cULus Listed	312 070	314 070	315 070
	BG, CE, EAC (Eurasian), KOSHA, TÜV, cULus Listed	312 071	-	-
▶ 16 safe inputs with IP67 protection – suitable for use in the extended temperature range (0 °C to +70 °C)	CE, TÜV	316 020	-	-
▶ Communication with other SafetyNET p devices (RTFN) ▶ Standard module bus for standard I/O modules	BG, CE, EAC (Eurasian), KOSHA, TÜV, cULus Listed	312 085	314 085	315 085
▶ Communication with other SafetyNET p devices (RTFN) ▶ With IP67 protection – suitable for use in the extended temperature range (-30 °C to +70 °C)	CE, TÜV	316 010	-	-

¹⁾  The modules are also available as T-type for increased environmental requirements. The order numbers of the T-type modules are 314 ... instead of 312 ...

²⁾  The modules are also available as R-type for railway applications. The order numbers of the R-type modules are 315 ... instead of 312 ...

Keep up-to-date on controllers PSSUniversal and I/O systems:

 Webcode: web150509

Online information at www.pilz.com

► Technical details – PSSUniversal

Supply modules, junction modules and safe block switching module



PSSu E F PS



PSSu E PD

Type	Suitable for		Function	Application area		Supply voltage	Current load capacity Module supply
	PSSUniversal – I/O system	PSSUniversal – controllers PSS 4000		Failsafe functions	Automation functions		
PSSu E F PS	◆	◆	Power supply	◆	◆	24 VDC	Max. 1.5 A
PSSu E F PS1	◆	◆	Power supply, buffered	◆	◆	24 VDC	Max. 2.0 A
PSSu E F PS2		◆	Power supply, buffered	◆	◆	24 VDC	Max. 1.0 A
PSSu E F PS-P	◆	◆	Power supply, periphery	◆	◆	24 VDC	-
PSSu E PD	◆	◆	Voltage distribution		◆	-	-
PSSu E PD1	◆	◆	Voltage distribution		◆	-	-
PSSu E S PD-D	◆	◆	Voltage distribution		◆	-	-
PSSu E F BSW	◆		Block switching function	◆	◆	24 VDC	-
PSSu E PS-P 5 V	◆	◆	Voltage distribution		◆	24 VDC	-
PSSu E PS-P +/- 10 V	◆	◆	Voltage distribution		◆	24 VDC	-
PSSu E PS-P +/- 15 V	◆	◆	Voltage distribution		◆	24 VDC	-

Type code for PSSUniversal electronic module/supply modules

PSSu E F 4DI

Product range	Design	Application area	Functions
PSSUniversal	E Electronic module K Compact module	F Failsafe S Standard (automation)	4 DI 4 digital inputs AI U Analogue input, voltage INC Incremental encoder PS Power supply ... Further functions

Keep up-to-date on PSSUniversal I/O modules:

Webcode:
web150421

Online information at www.pilz.com

Current load capacity Periphery supply	Certification						Order number	Screw terminals ⁵⁾										Cage clamp terminals ⁶⁾													
	BG (Federal law)	CE	EAC (Eurasian)	KOSHA	TÜV	cULus Listed		Suitable base module	Order number	PSSu BP 1/8 S ³⁾	PSSu BP-C 1/8 S ⁴⁾	PSSu BP 1/12 S	PSSu BP-C 1/12 S	PSSu BP-C1 1/12 S	PSSu BP 2/16 S	PSSu BP-C 2/16 S	PSSu BS 1/8 S	PSSu BS-R 1/8 S	PSSu BS-R 2/8 S	PSSu BS 2/8 S	PSSu BP 1/8 C ³⁾	PSSu BP-C 1/8 C ⁴⁾	PSSu BP 1/12 C	PSSu BP-C 1/12 C	PSSu BP-C1 1/12 C	PSSu BP 2/16 C	PSSu BP-C 2/16 C	PSSu BS 1/8 C	PSSu BS-R 1/8 C	PSSu BS-R 2/8 C	PSSu BS 2/8 C
Max. 10 A	◆	◆	◆	◆	◆	◆	312 190 ¹⁾									◆	◆											◆	◆		
Max. 10 A	◆	◆	◆	◆	◆	◆	312 191 ¹⁾											◆	◆											◆	◆
Max. 10 A	◆	◆	◆	◆	◆	◆	312 192 ^{1), 2)}												◆											◆	
Max. 10 A	◆	◆	◆	◆	◆	◆	312 185 ^{1), 2)}									◆												◆			
-		◆				◆	312 195 ¹⁾		◆	◆	◆		◆								◆	◆	◆	◆							
-		◆				◆	312 196 ¹⁾							◆	◆											◆	◆				
-		◆				◆	312 197		◆	◆	◆		◆								◆	◆	◆		◆						
Max. 8 A		◆	◆	◆	◆	◆	312 230 ¹⁾													◆											◆
-	◆	◆			◆	◆	312 590		◆		◆		◆								◆		◆	◆							
-	◆	◆			◆	◆	312 591		◆		◆		◆								◆		◆	◆							
-	◆	◆			◆	◆	312 592		◆		◆		◆								◆		◆	◆							

¹⁾  The modules are also available as T-type for increased environmental requirements. The order numbers of the T-type modules are 314 ... instead of 312 ...

²⁾  The modules are also available as R-type for railway applications. The order numbers of the R-type modules are 315 ... instead of 312 ...

³⁾ Without C-rail

⁴⁾ With C-rail

⁵⁾ Shield terminal available (312 963)

⁶⁾ Shield terminal available (312 964)

► Technical details – PSSUniversal

Digital inputs and outputs



PSSu E F 4DI



PSSu E S 4DI

Type	Suitable for		Function	Application area	
	PSSUniversal – I/O system	PSSUniversal – controllers PSS 4000		Failsafe functions	Automation functions
PSSu E F 4DI	◆	◆	4 digital inputs	◆	
PSSu E F 4DO 0.5	◆	◆	4 digital outputs	◆	
PSSu E F 2DO 2	◆	◆	2 digital outputs	◆	
PSSu E F DI OZ 2	◆	◆	1 digital input, 1 digital output	◆	
PSSu E F 2DOR 8	◆	◆	2 relay outputs	◆	
PSSu K F FCU		◆	12 digital inputs, 2 digital outputs (1-pin), 2 digital outputs (2-pin), Fast Control Unit	◆	
PSSu K F FAU P		◆	4 digital inputs, 2 digital outputs	◆	
PSSu K F FAU B		◆	4 digital inputs, 2 digital outputs	◆	
PSSu E S 4DI	◆	◆	4 digital inputs		◆
PSSu E S 4DO 0.5	◆	◆	4 digital outputs		◆
PSSu E S 2DO 2	◆	◆	2 digital outputs		◆
PSSu E S 2DOR 10	◆	◆	2 relay outputs		◆
PSSu E S 2DOR 2	◆	◆	2 relay outputs		◆
PSSu K S 8DI 8DO 0.5	◆	◆	8 digital inputs, 8 digital outputs		◆
PSSu K S 16DI	◆	◆	16 digital inputs		◆
PSSu K S 16DO 0.5	◆	◆	16 digital outputs		◆

Common features

- Supply voltage from module supply: 5 VDC
- Potential isolation

Keep up-to-date
on PSSUniversal
I/O modules:

Webcode:
web150421

Online information
at www.pilz.com

Electrical data	Certification						Order number		Screw terminals ⁵⁾							Cage clamp terminals ⁶⁾											
	Feature	Inputs	Outputs	BG (Federal law)	CE	EAC (Eurasian)	KOSHA	TÜV	cULus Listed	Regular version	Diagnostic modules (-D)	Suitable base module	Order number	312600	312610	312618	312620	312622	312628	312630	312601	312611	312619	312621	312623	312629	312631
-				◆	◆	◆	◆	◆	◆	312200 ¹⁾	-		◆		◆		◆		◆			◆		◆		◆	
0.5 A				◆	◆	◆	◆	◆	◆	312210 ^{1), 2)}	-		◆	◆	◆	◆	◆				◆	◆	◆		◆		
2 A				◆	◆	◆	◆	◆	◆	312215 ^{1), 2)}	-		◆	◆	◆		◆				◆	◆	◆		◆		
1 (2 A), 2-pin 1 test pulse output				◆	◆	◆	◆	◆	◆	312220 ^{1), 2)}	-		◆	◆	◆		◆				◆	◆	◆		◆		
2 N/O AC1: 250 V/8 A; 2 000 V DC1: 24 V/8 A				◆	◆	◆	◆	◆	◆	312225 ^{1), 2)}	-								◆	◆						◆	◆
- 2 (2 A) 1-pin 2 (2 A) 2-pin					◆	◆	◆	◆	◆	312435	-																
2 (3 A) 2-pin					◆	◆		◆	◆	312421	-																
2 (1.75 A) 1-pin					◆	◆		◆	◆	312420	-																
-				◆	◆			◆	◆	312400 ^{1), 2)}	312401		◆	◆	◆		◆				◆	◆	◆		◆		
0.5 A				◆	◆			◆	◆	312405 ¹⁾	312406 ¹⁾		◆	◆	◆		◆				◆	◆	◆		◆		
2 A				◆	◆			◆	◆	312410 ¹⁾	312411 ¹⁾		◆	◆	◆		◆				◆	◆	◆		◆		
2 N/O				◆	◆			◆	◆	312510 ¹⁾	-								◆	◆						◆	◆
2 N/O					◆				◆	312511 ¹⁾	-		◆	◆	◆		◆				◆	◆	◆		◆		
0.5 A					◆	◆		◆	◆	312431 ¹⁾	-																
-					◆	◆		◆	◆	312430	-																
0.5 A					◆	◆		◆	◆	312432	-																

¹⁾  The modules are also available as T-type for increased environmental requirements. The order numbers of the T-type modules are 314 ... instead of 312 ...

²⁾  The modules are also available as R-type for railway applications. The order numbers of the R-type modules are 315 ... instead of 312 ...

³⁾ Without C-rail

⁴⁾ With C-rail

⁵⁾ Shield terminal available (312963)

⁶⁾ Shield terminal available (312964)

► Technical details – PSSUniversal

Analogue inputs and outputs



PSSu E S 4AO U

Type	Suitable for		Function	Application area	
	PSSUniversal – I/O system	PSSUniversal – controllers PSS 4000		Failsafe functions	Automation functions
PSSu E S 2AI U	◆	◆	2 analogue inputs		◆
PSSu E S 4AI U	◆	◆	4 analogue inputs		◆
PSSu E S 2AI I s.e.	◆	◆	2 analogue inputs		◆
PSSu E S 2AO U	◆	◆	2 analogue outputs		◆
PSSu E S 4AO U	◆	◆	4 analogue outputs		◆
PSSu E S 2AO I	◆	◆	2 analogue outputs		◆
PSSu E S 2AI RTD	◆	◆	2 analogue inputs		◆
PSSu E S 2AI TC	◆	◆	2 analogue inputs		◆
PSSu E F AI I		◆	1 analogue input	◆	
PSSu E F AI U		◆	1 analogue input	◆	
PSSu E AI SHT1	◆	◆	1 analogue input, 2 analogue outputs	◆	◆
PSSu E AI SHT2	◆	◆	1 analogue input, 2 analogue outputs	◆	◆

Keep up-to-date
on PSSUniversal
I/O modules:

 Webcode:
web150421

Online information
at www.pilz.com

Electrical data	Certification					Order number	Screw terminals ⁵⁾										Cage clamp terminals ⁶⁾															
	Feature	Inputs	Outputs	BG (Federal law)	CE		EAC (Eurasian)	KOSHA	TÜV	cULus Listed	Suitable base module	Order number	PSSu BP 1/8 S ³⁾	PSSu BP-C 1/8 S ⁴⁾	PSSu BP 1/8 S-J	PSSu BP-C 1/8 S-J	PSSu BP 1/12 S	PSSu BP-C 1/12 S	PSSu BP-C1 1/12 S	PSSu BP 2/16 S	PSSu BP-C 2/16 S	PSSu BP 1/8 C ³⁾	PSSu BP-C 1/8 C ⁴⁾	PSSu BP 1/8 C-J	PSSu BP-C 1/8 C-J	PSSu BP 1/12 C	PSSu BP-C 1/12 C	PSSu BP-C1 1/12 C	PSSu BP 2/16 C	PSSu BP-C 2/16 C		
0 ... 10 V s.e.; diff; -10 ... +10 V		◆			◆	◆			312 440 ¹⁾			◆	◆			◆	◆					◆	◆			◆	◆					
0 ... 10 V s.e.		◆				◆			312 445 ¹⁾			◆	◆			◆	◆					◆	◆			◆	◆					
0 ... 20 mA; 4 ... 20 mA		◆			◆	◆			312 450 ¹⁾			◆	◆			◆	◆					◆	◆			◆	◆					
0 ... 10 V; -10 ... +10 V		◆			◆	◆			312 460 ¹⁾			◆	◆			◆	◆					◆	◆			◆	◆					
0 ... 10 V		◆				◆			312 465 ¹⁾			◆	◆			◆	◆					◆	◆			◆	◆					
0 ... 20 mA; 4 ... 20 mA		◆				◆			312 470 ¹⁾			◆	◆			◆	◆					◆	◆			◆	◆					
-		◆			◆	◆			312 490 ¹⁾							◆	◆								◆	◆						
Thermocouples		◆			◆	◆			312 500 ¹⁾					◆	◆									◆	◆							
0 ... 25 mA		◆							312 260 ^{1), 2)}			◆	◆			◆	◆					◆	◆			◆	◆					
-10 ... +10 V		◆							312 265 ^{1), 2)}			◆	◆			◆	◆					◆	◆			◆	◆					
0 ... 0.6 A; 0 ... 20 mA		◆	◆		◆	◆			312 261 ¹⁾			◆	◆													◆	◆					
0 ... 0.2 A; 0 ... 20 mA		◆				◆			312 262			◆	◆			◆	◆					◆	◆			◆	◆					

¹⁾  The modules are also available as T-type for increased environmental requirements. The order numbers of the T-type modules are 314 ... instead of 312 ...

²⁾  The modules are also available as R-type for railway applications. The order numbers of the R-type modules are 315 ... instead of 312 ...

³⁾ Without C-rail

⁴⁾ With C-rail

⁵⁾ Shield terminal available (312 963)

⁶⁾ Shield terminal available (312 964)

► Technical details – PSSUniversal

Counter modules



PSSu E S INC

Type	Suitable for		Function	Application area	
	PSSUniversal – I/O system	PSSUniversal – controllers PSS 4000		Failsafe functions	Automation functions
PSSu E S ABS SSI	◆	◆	Absolute encoder SSI		◆
PSSu E S INC	◆	◆	Incremental encoder		◆
PSSu E S INC 24V se	◆	◆	Incremental encoder		◆
PSSu E F ABS SSI		◆	Absolute encoder SSI	◆	
PSSu E F INC		◆	Incremental encoder	◆	
PSSu K F INC		◆	Incremental encoder	◆	
PSSu K F EI		◆	Encoder interface	◆	
PSSu K F EI CV		◆	Encoder interface	◆	

Electronic modules with serial interface



PSSu E S RS232

PSSu E S RS232	◆	◆	RS232 interface		◆
PSSu K S RS232		◆	RS232 interface		◆
PSSu K S RS232 Modbus ASCII		◆	RS232 interface		◆
PSSu E S RS485	◆	◆	RS485 interface		◆

Keep up-to-date
on PSSUniversal
I/O modules:

Webcode:
web150421

Online information
at www.pilz.com

Electrical data	Certification						Order number	Screw terminals ⁵⁾										Cage clamp terminals ⁶⁾													
	Feature	Inputs	Outputs	BG (Federal law)	CE	EAC (Eurasian)		KOSHA	TÜV	cULus Listed	Suitable base module	Order number	PSSu BP 1/8 S ³⁾	PSSu BP-C 1/8 S ⁴⁾	PSSu BP 1/8 S-J	PSSu BP-C 1/8 S-J	PSSu BP 1/12 S	PSSu BP-C 1/12 S	PSSu BP-C1 1/12 S	PSSu BP 2/16 S	PSSu BP-C 2/16 S	PSSu BP 1/8 C ³⁾	PSSu BP-C 1/8 C ⁴⁾	PSSu BP 1/8 C-J	PSSu BP-C 1/8 C-J	PSSu BP 1/12 C	PSSu BP-C 1/12 C	PSSu BP-C1 1/12 C	PSSu BP 2/16 C	PSSu BP-C 2/16 C	
SSI				◆					◆		312 480 ¹⁾		◆	◆				◆				◆	◆				◆				
INC					◆				◆		312 485 ¹⁾								◆	◆									◆	◆	
INC					◆			◆	◆		312 486 ¹⁾								◆	◆									◆	◆	
SSI				◆	◆	◆	◆	◆	◆		312 275 ¹⁾		◆	◆		◆		◆				◆	◆			◆		◆			
INC				◆	◆	◆	◆	◆	◆		312 280 ¹⁾								◆	◆									◆	◆	
INC				◆	◆	◆	◆	◆	◆		312 437 ¹⁾																				
Sin/Cos, TTL, HTL, initiators 24 V				◆				◆	◆		312 433																				
Sin/Cos, TTL, HTL, initiators 24 V				◆				◆	◆		312 434 ¹⁾																				

-	◆				◆				◆		312 515 ¹⁾		◆	◆		◆	◆				◆	◆			◆	◆				
-	◆				◆				◆		312 439 ¹⁾																			
-	◆				◆				◆		312 438 ¹⁾																			
-	◆				◆				◆		312 516 ¹⁾		◆	◆		◆	◆				◆	◆			◆	◆				

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