Maxxis 5
Process Controller with PHASE Application

- Process Controller for the automated control of weighing processes with up to four scales
- Wide range of opportunities for flexible integration such as option cards, housings and EX approvals
- DAT, multilingual easy-operation interface, backup function, service reports, simulation
- PHASE application for manual and automatic batch processes in combination with recipe management systems such as ProBatch+
- With an additional license: internal alibi memory, tilt correction
- Supplied with Ethernet TCP/IP, Modbus TCP, RS-232, RS-485, USB, SD card, 4 digital I/O

DAT® DIGITAL ASSISTANCE TECHNOLOGY

Made in Germany

The Maxxis 5 from Sartorius Intec combines accuracy, connectivity, and functionality to provide a process controller unlike any other. Specifically designed to solve many of the problems faced by today's manufacturers, the Maxxis 5 easily takes control of all modern automation processes.

As a multiple use device, the Maxxis 5 is pre-programmed to control a diverse range of complex applications. Sartorius' expert team of software engineers, in conjunction with industry specialists, have created software solutions that allow the unit to seamlessly integrate into any process. However, users who require it can utilize the easy-to-use IEC61131 programming language to implement their own unique functionalities.

Equipped with an internal web server, the Maxxis 5 can be controlled via any standard web browser or a remote display with VNC capabilities. Additionally, a wide range of interface options, USB connections, and an Ethernet port ensure the Maxxis 5 is able to connect with any existing infrastructure.
To suit the diverse requirements of industry applications, the process controller is available in any of three different constructions allowing panel mounting, direct-at-machine front-end integration or use as a table-top unit.

The Maxxis 5 is equipped with all the features users have come to expect from process technology. Automatic backups save data to SD cards providing full transparency and traceability, whilst specifically tailored reports and service reports track overload and user changes and deliver this data direct to users.

To make sure that even novice users can control complicated applications with ease, an integrated help function is installed on the Maxxis 5.

The harsh environments process controllers are expected to operate in demands a robust design.
The Maxxis 5 is constructed from high quality stainless steel and utilizes a wide surface area and bright backlit display to ensure inputting and readout accuracies in the toughest conditions.

The Maxxis 5 with PHASE application is specifically designed for manual and automatic batch processes in combination with a recipe management system such as ProBatch+. The PHASE application is used to conduct batching applications using several scales controlled via PR8400 ProBatch+ recipe control. Batching orders can either be fully automated or manually processed by the Maxxis 5. In manual batch processes, the Maxxis 5 acts as the interface between the process and the operator.

Production plans, recipes and materials/components are created and managed in the recipe management system. In addition to batching components, signals for process control, such as digital and analog I/O signals, can be configured as material types. For visualization purposes, there is one configurable scale view for one or two scales. The batching weights are displayed as a bar graph including the prescribed tolerance ranges. Materials for manual batching can be checked with confidence using barcodes or by entry on the control panel. The simulation function is used to check recipes before production.

Maxxis 5 Phase with Recipe Management System ProBatch+

Recipe management runs on a PC with the ProBatch+ program. The Maxxis 5 is connected to the PC via Ethernet. Recipe control runs on the ProBatch+ batch server, which can communicate with several devices via the OPC server. When batching starts, the recipe remains in the PC. Only the data from the active batching phase is downloaded to the device and started up. The device runs through the batching phase independently.

ProBatch+ and the Maxxis 5 visualize the current status. The Maxxis 5 controls the container valve(s) (coarse and fine valves) independently. An external PLC that processes these output signals further does not have to be used.

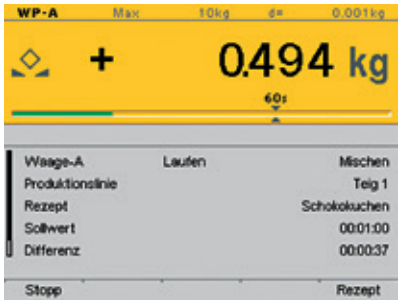
Start via Production Plan

Production plans from the ProBatch+ recipe management system can be loaded, displayed and started on the Maxxis 5. An overview lists the orders for a production plan by order ID and recipe name. If desired, all orders for a production plan can be processed fully automatically or an order can be individually selected and started from the list. A production plan or recipe can be processed on each production line in parallel and independently from each other.

Recipe Start at the Terminal

Recipes can also be started directly on the Maxxis 5. All existing recipe names are downloaded from ProBatch+ for this function. The desired recipe is started after the target value is input. Additional optional parameters such as the number of recipe cycles and order information such as the order ID, production number, or customer name can be entered as well. The recipe start command is sent to ProBatch+ and executed there. The individual recipe lines are run on the terminal.

Manual Batching
During manual batching, the color display of the Maxxis 5 is a useful indicator of the batching status with color-coded bar graphs. The tolerance limits are displayed numerically with the aid of the colors green and red for visual confirmation, while a material ID is used to ensure the material used is the correct one. The raw material batch is logged in ProBatch+ to ensure traceability. The amount to be dispensed can be divided across several batches of raw materials. Corresponding process labels can then be printed out.

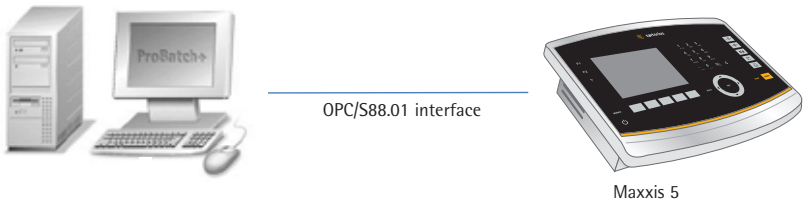


Automatic Batching
The Maxxis 5 also enables automatic processes to be controlled. Recipe lines (phases) sent to the terminal from a recipe management system are automatically produced. Standard batching functions guarantee a repeatable, accurate result. Control functions enable control of the sequences, such as the time function in order to control a mixer, for example, or the "Wait for input" function to continue the process. Different displays provide a complete overview of all scales and process steps.

S88.01 – Phase Interface
The Maxxis 5 has an open interface in line with batch standard S88.01 for connecting to recipe management systems such as ProBatch+. It supports the S88 phase logic interface, which allows for communication between recipe management systems and the controls. Different automation concepts can be implemented as a result: first, direct connection to a PC via Ethernet TCP/IP with OPC; second, connection to a PLC via field buses such as Profibus and DeviceNet; or third, PC connection via Ethernet with simultaneous I/O control via field buses.

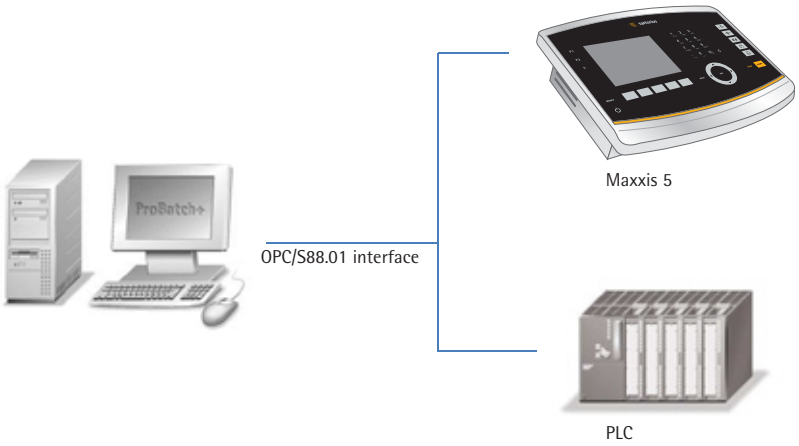
User Management
Users can protect all their data and configurations from unauthorized changes by assigning user rights (with user name and PIN) to different users and user groups. This ensures peace of mind, and guarantees that your data is optimally protected.

Connection with Established Standards
OPC communication between ProBatch+ and the Maxxis 5 meets the requirements of the ANSI/ISO S88.01 Batch Control standards. Dynamic data is delivered via DDE and OPC to connect visualization systems. SQL and ODBC database interfaces are used for the transmission of production data to an ERP system.
This consistent use of established standards simplifies connection and saves time and money when it comes to commissioning the systems.

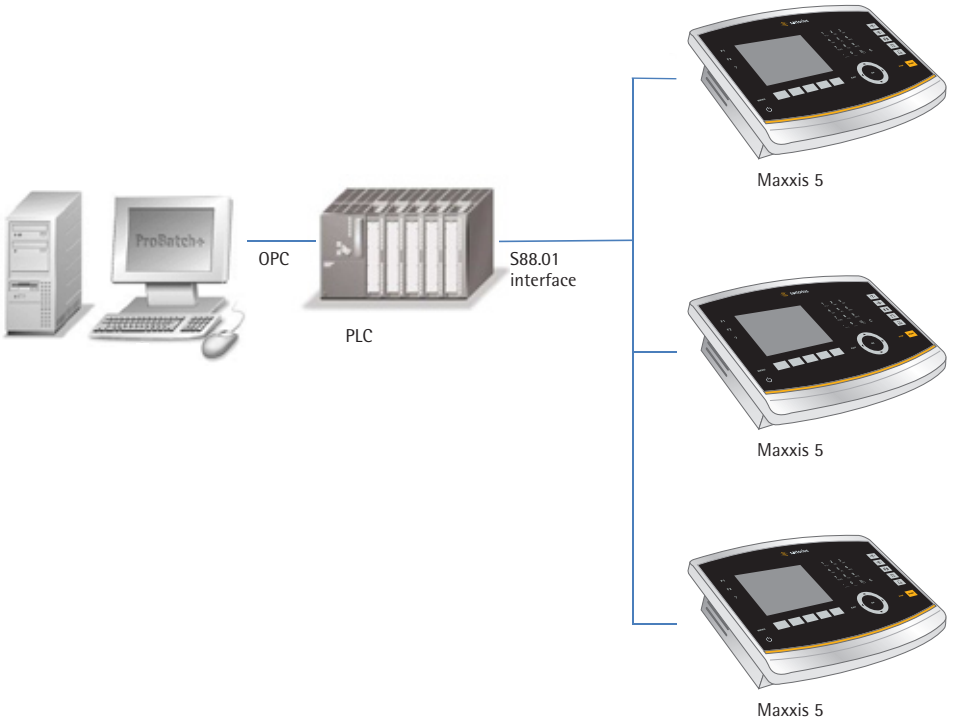


Direct connection – serial or via Ethernet: Recipe steps are pre-programmed functions of the Maxxis 5 process controller.

Script Function
The script language integrated in ProBatch+ can be used for easy and flexible incorporation of customer-specific process requirements. The script functions make it possible to implement quick process adjustments without time-consuming programming in the PLC.



Recipe steps can be run directly via PLC.



Indirect connection via PLC: PLC functions can be easily synchronized with the controller's pre-programmed batching functions.

Technical Data

Housing
For Panel Mounting
IP protection class: IP20
Front panel: IP65
Material: stainless steel
RoHS conform

Other possible housings:
- Stainless steel complete IP65
- Bracket housing IP 65
- Blackbox housing IP20
- For more detailed information please consult the order list

Dimensions
350 × 280 × 94 mm
Depth including screen clamping rail

Display and Status
TFT graphical color display
5.7" with 320 × 240 pixels, graphic
Weight display: 7-digits, up to 3 cm
Available weight units are t, kg, g, mg, lb and oz.
1 Status LED to signal shut-down procedure

Keys
37 keys, key pad foil

Languages | Character sets
ASCII, Latin 1
Latin Ext A
cyrillic
hiragana
katakana
CJK (simplified Chinese only)

Standard Interfaces
RS232
RS485/422
Ethernet TCP | IP, Modbus TCP
USB
4 Digital I/Os
SD Card Slot

Options
2 Analog | Digital Weighing Points
2 Option Slots
1 Fieldbus Slot
For more detailed information please consult the order list

Digital Scales
Connection of digital SBI | XBPI Platforms are possible.
(Power supply of one platform)
Connection to digital Pendeo Load cells is possible
(power supply needed)
For other connectable scales please check manual

Load cell connection
All strain gauge load cells;
6- or 4-wire connection

Load cell supply
12V, short-circuit proof.
External load cell supply possible.

Minimum load impedance
min. 75 Ohm
e.g. 6 load cells with 650 Ohm
or 4 load cells with 350 Ohm

Measuring principle
Measuring amplifier:
Delta-Sigma converter
Measuring time:
min 5 ms – max. 1600 ms

Digital filter for load cell
4th order (low pass), Bessel, Aperiodic or Butterworth

ATEX Zone 2/22 approved (Option)
Zone 2, IIC T4 /
Zone 22, IIIC T80°C
Ta: -10°C ... +40°C

Approved for FM/CSA Class I Div.2 (Option)
NI / I / 2 / ABCD / T4
Ta = -10°C to +40°C – 2015571; NIFW
ANI / I, II, III / 2 / ABCD / T4
Ta = -10°C to +40°C – 2015571; NIFW

A | D Converter Input range
4,8 nV (appr. 7.5 Mio. div.)
Usable resolution: 0.2 µV/d
Measuring signal: 0 to 36mV
(for 100% nominal load)

Linearity
< 0,003%

Control outputs
4 relay two way contact
Max. switching voltage 31 V DC | 24 V AC
Max. switching current: 1 A

Control Inputs
Quantity: 4 opto-decoupled inputs
Can be used as 'passive' or 'active'

Voltage
Input (active):
Can be switched via a potential-free contact
Input (passive):
– Logic 0: 0 to 5 V DC or
– open Logic 1: 10 to 28 V DC
External power supply required

Current: <7 mA @ 24 V
<3 mA @ 12 V

Power Supply
100 – 240 VAC, (+10/-15 %), 50 - 60 Hz max. 21 W/44 VA
Optional:
24 VDC, (+/-10 %), max 20 W

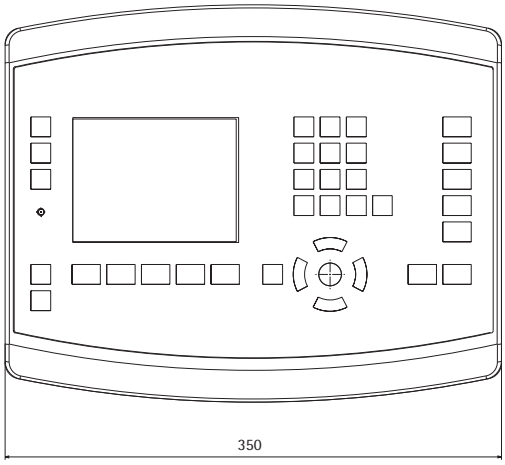
Temperature effects
Zero: TK0 m < 0.05 µV/K RTI
Span: TKspan < +/- 4 ppm/K

Environmental conditions
Temperature
W&M: –10 °C to +40 °C
Operation: –10 °C to +50 °C
Storage: –20 °C to +70 °C

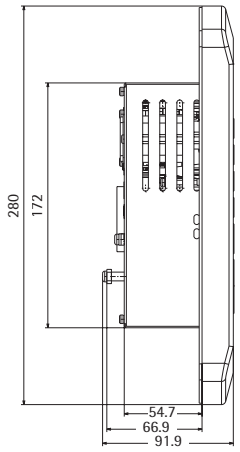
Weight
Net: 3 kg
Shipping weight: approx. 4 kg

Technical Drawings

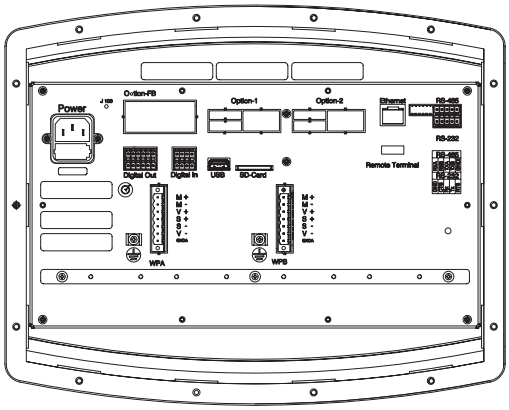
Front View



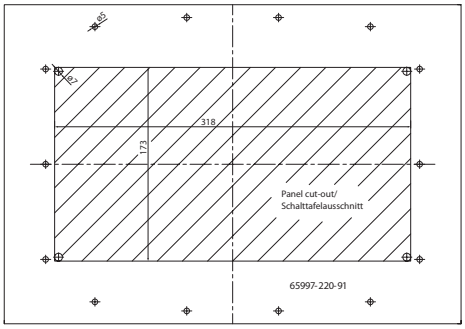
Side View



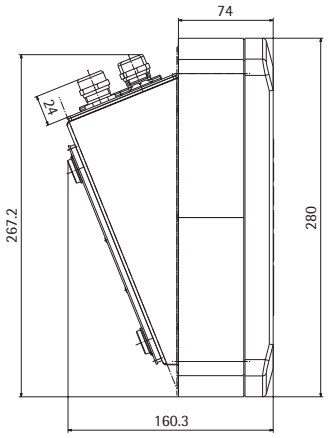
Back View



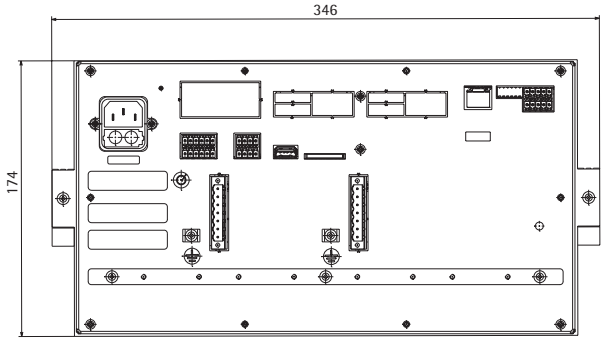
Drill Plan/Panel Cut-out



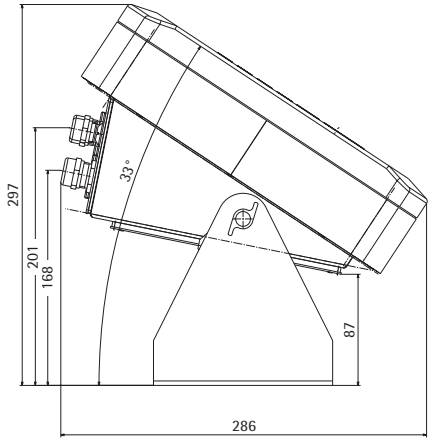
Optional Tabletop Housing

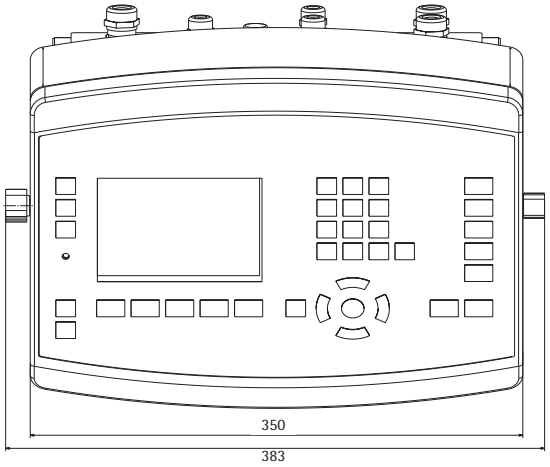


Optional Blackbox Housing



Optional Tabletop Housing
with Brackets





Maxxis 5 Process Controller

Type	Description	Order Number
Maxxis 5	Process controller, including Ethernet TCP/IP and Modbus TCP 1 × RS-232 and 1 × 485/422, 1 × USB, 1 × SD card, 4 × digital input (active or passive optional) and 4 digital outputs as relay	9405 159 00000

Options for Maxxis 5

		Slot A/B
Weighing Point		
W1/W2	A/D converter	0/0
WE1	A/D converter with intrinsically safe load cell supply	0/-
X3/X4	Disconnectable load cell connection	0/0
Built-in Inputs		
DE1	Digital inputs – relays, passive	Standard
DE2	Digital inputs – relays, active	
Housing		
G1	Maxxis 5 with panel housing	Standard
G2	Maxxis 5 in tabletop housing	
G3	Maxxis 5 in tabletop housing with U-bracket (turned front)	
G4	Maxxis 5 in blackbox housing (not available with Y2/Y3)	
L12	Housing back plate with cable glands for tabletop housing (standard)	
L13	Housing back plate with EzEntry 4 and cable glands for tabletop housing (not available with Y2/Y3)	
Approvals		
Y2	ATEX Zone 2/22 approval	
Y3	FM Class I, Div. 2 approval	
F3	Kit for legal for trade approval (labels and CD), NAWI according to MID	
Power Supply		
L0	110/240 V AC power supply	Standard
L8	24 V DC power supply	
Power Cables		
EU	Power cable with Euro plug, type CEE7 (only if tabletop housing is ordered)	Standard
GB	Power cable with GB plug, type 360 (only if tabletop housing is ordered)	
US	Power cable with US plug, type LAP 31 (only if tabletop housing is ordered)	
N31	Power cable for 24 V with open ended cable (only if tabletop housing is ordered)	
Applications and Licenses		
H0	BASIC application	Standard
I4	PHASE application (OPC included)	
I5	COUNT application (available 2015)	
I6	BATCH application	
I8	TRUCK application (alibi memory included)	
I11	IBC – One component filling	
I12	Tilt correction license (BASIC software required)	
E5	Alibi memory license	
E6	OPC server license (AccessIt 2.0 included)	
E9	Special license "Batch Modes" for use in individual programming	

Interface Cards		Slot 1/2/4
B15/B25	Interface card serial 2 × RS-485 (including supply for one IS platform)	0 / 0 / -
B16/B26	Interface card analog 1 input/1 output with 0/4–20 mA	0 / 0 / -
B17/B27	Interface card digital 4 outputs relay/4 inputs – active	0 / 0 / -
B18/B28	Interface card digital 4 outputs relay/4 inputs – passive	0 / 0 / -
B19/B29	Interface card digital 8 outputs Optocoupler/4 inputs – passive	0 / 0 / -
C21	Fieldbus card Profibus DP	- / - / 0
C24	Fieldbus card DeviceNet	- / - / 0
C25	Fieldbus card CC-Link (available 2015)	- / - / 0
C26	Fieldbus card Profinet	- / - / 0
C27	Fieldbus card Ethernet/IP	- / - / 0

Cables for Integrated Ethernet Interface	
M39	Ethernet connector female RJ45, IP66
M40	Ethernet cable with cable gland, 7 m, RJ45 connector

Cables for Integrated USB Interface	
N29	USB connector female USB type A, IP65 if no USB plugged in (not available with Y2/Y3)
N30	USB cable to connect YBR03xx barcode scanner

Connection to (EX) Remote Terminal	
CX1	Connector for Maxxis 5 Ex-Remote Terminal for barrier-free connection
C1	Connector for Maxxis 5 Remote Terminal

Cables with Cable Glands

	Integrated RS-232	**Integrated RS-485**	**Slot 1 1. RS-485**	**2. RS-485**	**Slot 2 1. RS-485**	**2. RS-485**
Serial cable with 9 pin D-Sub male connector, 6 m	M16					
Serial cable with 9 pin D-Sub female connector, 6 m	M17	M81	M77	M86	M79	M91
Serial cable with 12 pin round connector male, 6 m	M18	M74	M61	M63	M66	M68
Serial cable with 12 pin round connector female, 6 m	M19	M75	M62	M64	M67	M69

Maxxis 5 – Order Numbers with fixed Defined Configuration which Cannot be Changed with Additional Options

Type	**Description**	**Order Number**
PR 5900/00	Maxxis 5 Process Controller with options: panel housing (G1), A/D converter (W1), 110/230 V (L0), BASIC application (H0), digital input passive (DE1)	9405 159 00001
PR 5900/01	Maxxis 5 Process Controller with options: panel housing (G1), A/D converter (W1), 24 V (L8), BASIC application (H0), digital input passive (DE1)	9405 159 00011
PR 5900/02	Maxxis 5 Process Controller with options: tabletop housing (G2), rear plate cable glands (L12), A/D converter (W1), 110/230 V (L0), BASIC application (H0), digital input passive (DE1), power cable with Euro plug (EU)	9405 159 00021
PR 5900/03	Maxxis 5 Process Controller with options: housing with bracket (G3), rear plate cable glands (L12), A/D converter (W1), 110/230 V (L0), BASIC application (H0), digital input passive (DE1), power cable with Euro plug (EU)	9405 159 00031

Accessories for Maxxis 5

Type	Description	Order Number
PR5900/10	A/D converter	9405 359 00101
PR5900/04	Interface card serial 2 × RS-485 (including supply for one IS platform)	9405 359 00041
PR5900/12	Interface card digital 4 outputs relay/4 inputs – passive	9405 359 00121
PR5900/13	Interface card digital 4 outputs relay/4 inputs – active	9405 359 00131
PR5900/17	Interface card digital 8 outputs Optocoupler/4 inputs – passive	940535900171
PR5900/07	Interface card analog 1 input/1 output with 0/4–20 mA	9405 359 00071
PR1721/51	Fieldbus card Profibus DP	9405 317 21511
PR1721/54	Fieldbus card DeviceNet	9405 317 21541
PR1721/55	Fieldbus card CC-Link (available 2015)	9405 317 21551
PR1721/56	Fieldbus card Profinet	9405 317 21561
PR1721/57	Fieldbus card Ethernet/IP	9405 317 21571
PR5900/41	Serial cable with cable glands (9 pin D-Sub plug male)	9405 359 00411
PR5900/42	Serial cable with cable glands (9 pin D-Sub plug female)	9405 359 00421
PR5900/43	Serial cable with cable glands (12 pin round plug male)	9405 359 00431
PR5900/44	Serial cable with cable glands (12 pin round plug female)	9405 359 00441
PR5230/30	Ethernet female connector RJ45, IP65	9405 352 30301
PR5230/31	Ethernet cable with cable glands, 7M, RJ45 plug, industrial material	9405 352 30311
PR5900/82	COUNT application license (available 2015)	9405 359 00821
PR5900/81	PHASE application license (OPC included)	9405 359 00811
PR5900/83	BATCH application license	9405 359 00831
PR5900/84	TRUCK application license (alibi memory included)	9405 359 00841
PR5900/86	IBC – One component filling license	9405 359 00861
PR5900/87	Tilt correction license (BASIC software)	9405 359 00871
PR5900/91	Alibi memory license	9405 359 00911
PR5900/92	OPC server license (AccessIt 2.0 included)	9405 359 00921
PR5900/93	Special license "Batch Modes" for programming	9405 359 00931
PR5999/99	W&M Approval Labels (1 set)	9405 359 99991

Ex Remote Terminal (Option CX1 Required) for Use in ATEX (IECEx) Zone 1 and 21

PR5900/60	EX Remote Terminal for Maxxis 5, panel housing (YPSC* power supply needed)	9405 359 00601
PR5900/70	EX Remote Terminal for Maxxis 5, tabletop housing (YPSC* power supply needed)	9405 359 00701

Remote Terminal (Option CX1 Required) for Use in Safe Area (Available March 2015)

PR5900/61	Remote Terminal for Maxxis 5, panel housing (24 V power supply needed)	9405 359 00611
PR5900/71	Remote Terminal for Maxxis 5, tabletop housing (24 V power supply needed)	9405 359 00711

The technical data given are intended solely as a product description and should not be conceived as guaranteed properties in the legal sense.