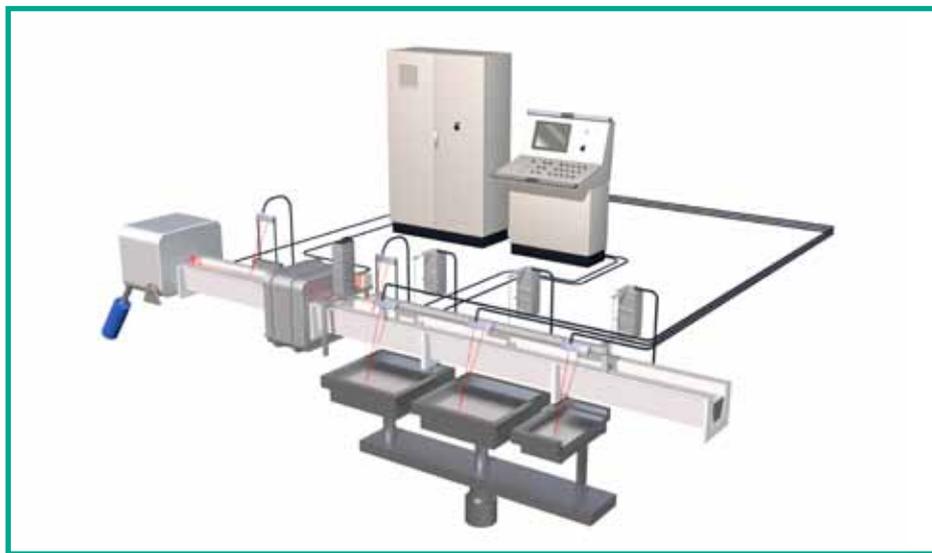


MLC

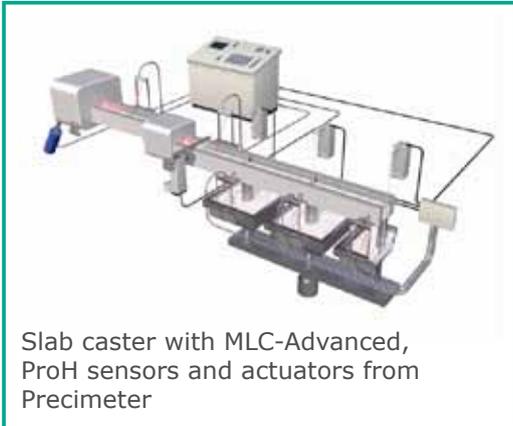
- Metal Level Control Systems



The implementation of Precimeter Technology provides many advantages

- Quality improvements
- Increased productivity
- Documentation of the process
- Raw material savings
- Energy savings
- Better use of manpower

Metal Level Control Systems



Slab caster with MLC-Advanced, ProH sensors and actuators from Precimeter

Precimeter offers a state of the art Metal Level Control (MLC) System family. The system is fully compatible with the entire Precimeter product line. The MLC family consists of four different levels. The four different levels make the system suitable for all different kinds of foundry automation. To achieve the best results within foundry automation, we strongly recommend the use of the Precimeter products together with an appropriate MLC system from us.

The Precimeter MLC Systems

Based on flexibility, the MLC system is available in different versions. The systems are called M1, A1, Flex and Advanced. Depending on application, we recommend different models. The A1 and above are PLC based, and the Advanced system is also available with a SCADA based HMI system for the more demanding application.

MLC-M1

The MLC-M1 is used for a wide range of applications. It is a Precimeter built system based on the internal controller of the ProH sensor.

The M1 is suitable for actuator or pump control. It is built to control one single point which can handle one sensor and control one piece of equipment such as an actuator or pump.



MLC-A1



The MLC-A1 is the big brother of the M1. In addition to the M1 functions, the A1 provides an integrated automated logger storing data onto a USB memory stick. The A1 has an ethernet connection. It is also possible to work with an automated start up.

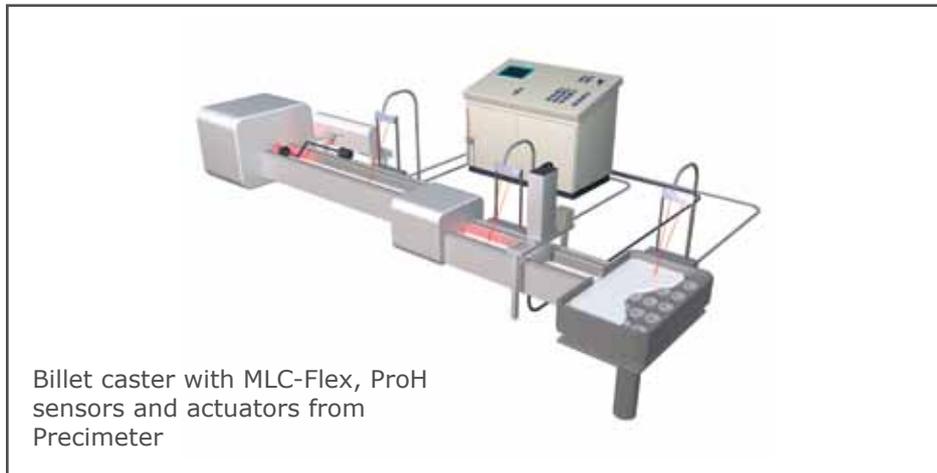
A1 is the recommended system for applications involving a tilting furnace. Furthermore it has the ability to handle recipes for different set ups.

The A1 is built to control one single point which can handle one sensor and control one piece of equipment such as an actuator, pump or furnace.

Metal Level Control Systems



The ProH Digital Camera Sensor lays the foundation in every successfully automated foundry system



Billet caster with MLC-Flex, ProH sensors and actuators from Precimeter

MLC-Flex	MLC-Advanced
<p>The MLC-Flex is a custom built system designed to fit all the needs of the customer. We take all the experience of the Precimeter team and use it to design the best system possible for every application.</p> <p>The system also includes the ability to log data. It has an HMI panel providing a user friendly interface.</p> <p>The system can to control up to three points and can handle up to four sensors and control three pieces of equipment.</p> <p>The picture above shows an MLC-Flex billet casting application controlling one furnace tap out actuator, the flow in the launder and the table level.</p>	<p>The MLC-Advanced is the largest system Precimeter offers. It is designed for the largest and most demanding applications. The MLC-Advanced is entirely tailor made to fit the specific needs of the customer.</p> <p>With full access to the Precimeter knowledge and technology, we can guarantee a state of the art system that will solve your automation problems.</p> <p>The MLC-Advanced can control up to 20 sensors and pieces of equipment at the same time.</p> <p>With a larger HMI panel than the flexible, the interface is even more user friendly. There is also the option to fully integrate SCADA into the system.</p>

Precimeter MLC Systems - an oversight

REV 1.0.2	MLC-M1	MLC-A1	MLC-Flex	MLC-Advanced
System Objects				
Sensors:	1	1	1 - 4	1 - 20
Actuators, Tilting Furnaces, Pumps:	1	1	1 - 3	1 - 20
Actuator	yes	yes	yes	yes
Tilting Furnace	-	yes	yes	yes
Pump	Yes	yes	yes	yes
Tilt Angle Feedback	-	yes	yes	yes
Over Fill Guard	yes	yes	yes	yes
Control Cabinet				
Enclosure	Wall Mounted	Wall Mounted	Customer specified	Customer specified
Standard signals for external use (Shutdown, Warning & External Supply System OK)	-	yes	yes	yes
Customized Customer Signal Interface	-	-	yes	yes
Alarm indications	*1 *2	LED	LED / Light / Sound	LED / Light / Sound
*1 = Sensor OK indication.				
*2 = Two alarm relay contacts (Level and/or temp alarms)				
Display				
Type	LCD text 4x20	TFT Touch 3.5" b/w	TFT Touch 6.5" Color	TFT Touch 10.4" (*3)
PID - Parameters	yes (PI)	yes	yes	yes
Process levels	yes	yes	yes	yes
Alarm management	-	yes	yes	yes
Recipe	-	yes	yes	yes
Trends	-	65k Points/line (*2)	65k Points/line (*2)	65k Points/line (*2)
Datalogging	yes (*1)	yes (*4)	yes (*4)	yes (*3) (*4)
Multi-langue compability	-	yes	yes	yes
Units	-	Metric	Metric/Inch	Metric/Inch
Supersize Level View (Readable Distance)	3M	5M	10M	10M
PC Remote Control Client (Ethernet)	-	yes	yes	yes
*1 = Level Pilot Tool (PC Software)				
*2 = 1s sampling for ~18 hours = 5s sampling for ~90 hours				
*3 = Optional Panel PC with Scada Software is recommended when there is need for long term history evaluation				
*4 = Datalogging is made automatic in HMI. This data can be transferred to USB-stick, to ext. Harddrive, through ethernet or serial connection.				
Operation				
Actuator Calibration	Manual	Supervised	Supervised	Supervised
Sensor Calibration Sensor Reference point (± 0)	yes	yes	yes	yes
Manual Level Control	yes	yes	yes	yes
Auto Control PID	yes	yes	yes	yes
Auto-start Procedure	-	Manual or by Level SP	Customized	Customized
Emergency Close Button	*1	yes	yes	yes
Auto Emergency Close Option	-	Highlevel/OFG/ext.sig.	Customized	Customized
*1 = With TXP-6E och PXP-2E				
Misc Features				
Mounting Angle Compensation	-	yes	yes	yes
Setpoint Ramp	-	yes	yes	yes
Dynamic Scaling on Level Bars	-	-	yes	yes
Enhanced Measurement Resolution	-	optional	yes	yes
Smart Sensor Filter	-	yes	yes	yes
Options				
Scada interface (Ethernet)	-	Optional	Optional	Optional
Profibus interface	-	-	Optional	Optional
Remote modem service kit	-	-	Optional	Optional
BEData Collector (PC + Ethernet)	-	Optional	Optional	Optional
Extra Advanced HMI (PanelPC with SCADA software)	-	-	-	Optional
UPS	-	-	Optional	Optional

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