

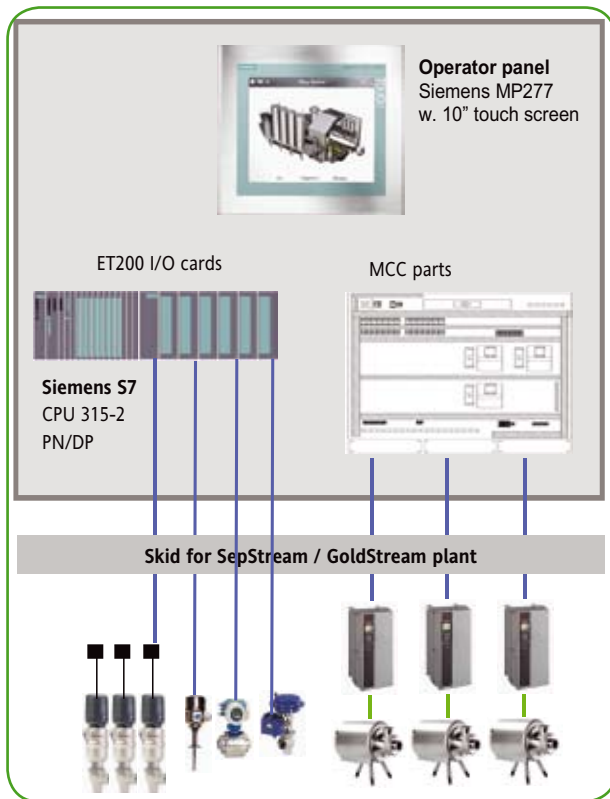


APV Automation Control System for APV GoldStream and APV SepStream



Panel design

- Panels built-in stainless steel AISI 304 and cable entry in bottom of panel using stainless steel cable glands
- IP55 class panel
- Panel drawing is done in EPLAN
- Control panel placed on skid
- Only external power supply necessary
- Pre-tested and ready to power up



Simplified panel layout

Control system – basic design

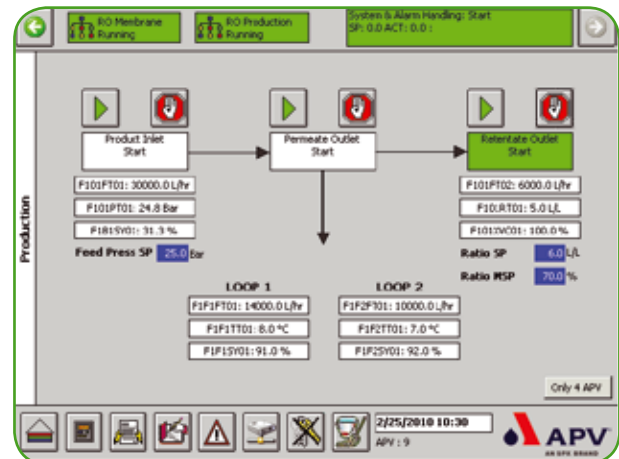
The control system is designed with the following features:

- The PLC is a Siemens S7-315 series using Simatic Manager software version 5.4
- The operator control panel is a Siemens MP277 10" touch panel built on Siemens WinCC Flexible 2008
- All PLC code is unprotected and may be freely changed or monitored from the Siemens Simatic Manager software (sold separately) via MPI or Ethernet connection
- Most important analogue values are trend logged for real-time monitoring every 4 seconds. A maximum number of 1000 points are stored in the log (approx. 1/2 hour of data).
- Four predefined CIP recipes for example for short, medium and long CIP time configuration
- User management with one predefined operator and one predefined administrator
 - The operator rights are:
 - Daily operation of plant
 - Acknowledgment of alarms
 - Changing of set points
 - Manual operation of items

- The administrator rights are:

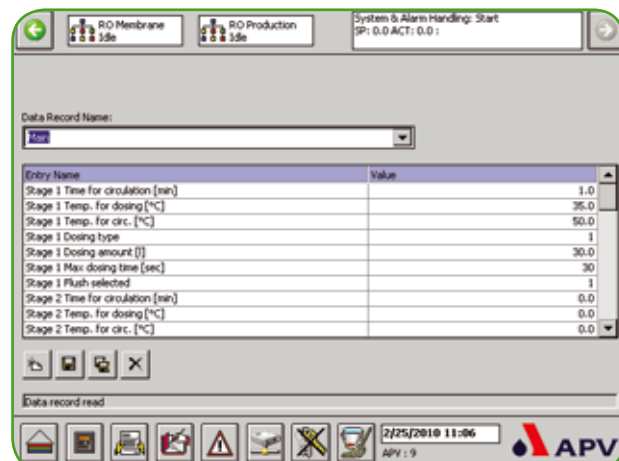
- As operator
 - Create new users
 - Exit application
- HMI done in English and customer preferred language if within the EU (five standard languages)

Production overview



Plant overview for daily operation and control and on-the-fly modification of most important set-points

CIP recipe system



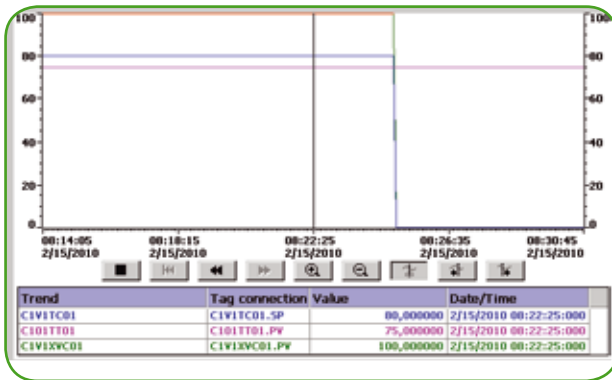
Recipe editor for creation and modification of recipes. Four predefined recipes are available.

PID control



PID control screen for easy and quick access to PID control loops

Trend log screen



Real time trend curves available on all analogue process values.

Variable speed drives

The unit is equipped with Danfoss variable speed drives (frequency converters), mounted outside the control panel on the skid. To prevent water penetration, IP66 class speed drives are used. Signals to the PLC I/O are all traditionally wired (4-20mA/24V DC).

Options

The control system has the following predefined options:

- Communication link for remote control (start/stop) of the plant from an external control system via Profibus DP
- Historical data collection of analogue process values to external USB device. To analyse the collected data they may be imported into Microsoft Excel for easy viewing using the build-in Chart Wizard. The following data is logged:
 - Pressure
 - All temperature
 - All flow rates
 - All analogue output values to pumps and control valves
- Additional operator SCADA system consisting of a Wonderware Intouch PC for operator room placement. The SCADA will have the following built-in functions:
 - Historical trend log 100 days
 - Real time trend log
 - CIP recipe system
 - 19" monitor
 - Mimic screen with P&ID for plant item status and control
 - Historical alarm log 100 days
- Remote online connection through the internet for customer service and maintains support, allowing the SPX Flow Technology customer service personnel to go online on the PLC and if necessary take over plant control
- HMI done in English if outside the EU. Customer preferred language may be done if required (five standard languages)
- Allen-Bradley CompactLogix PLC and Rockwell PanelView 600 Touch HMI Panel

TECHNICAL DATA - BASIC DESIGN

PANEL SIZE	HxWxD 1200x1000x300
PANEL LOCATION	On skid
PANEL IP CLASSIFICATION	IP55
PANEL SUPPLY	3x400/230V AC / 50 Hz
PANEL MAX. AMBIENT TEMPERATURE	35°C
CABLE ENTRY	Button via cable glands
PLC TYPE	Siemens S7-315-2PN/DP 1MB memory
AVAILABLE PLC INTERFACE	MPI Profibus DP Ethernet
I/O	Siemens ET200S
HUMAN MACHINE INTERFACE	Siemens MP277 10" touch
VARIABLE SPEED DRIVES	Danfoss FC302 mounted on skid (IP66)



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