

## MOD 30 RetroPAK Replacement for ABB Kent-Taylor MOD 30

- **Multiple PID loops, math, logic & sequence**
- **More I/O and communications options**
- **MOD 30 termination cable adaptor**
- **Fits same bezel & cutout**
- **Communicates via ICN with MOD 30, Local Control Panel and Communication Link**
- **High visibility display, easier to operate**
- **Front panel tuning**
- **Portable Memory Module option**



**“The Right Fit for Retrofit”**

The MOD 30 RetroPAK provides the easiest migration path from Taylor and ABB Kent-Taylor MOD 30 instruments to the latest technology. It combines the functions of the 1700 Series Controller, Controller XL, Math Unit, and Sequence and Logic Unit (SLU) into one instrument, and offers all the features that made the Taylor MOD 30 so popular. In addition it offers a host of other powerful features and up-to-date communication strategies that make RetroPAK the logical choice for replacing aging MOD 30 controllers.

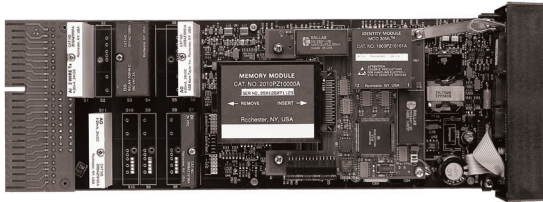
The MOD 30 RetroPAK, the MOD 30ML, was designed as the next generation of MOD 30 instrument and fits the same panel cutout and bezel, making it easy to replace old MOD 30's one at a time or in logical groups. The RetroPAK termination adaptor is designed to easily replace MOD 30 instruments connected to the 1720F Standard Termination Panel using the 1750F series cables. Simply remove the MOD 30 and its housing, install the RetroPAK controller and connect the cable. Field wiring and 24V dc power connections remain in place at the 1720F Termination Panel.

The MOD 30 RetroPAK includes all the functionality of the MOD 30 series and more, making it suitable for upgrading most installations. Algorithms and functions include:

- Up to six PID control loops with the same functions as the MOD 30
- Signal selection, timers, and totalizers
- Math calculations
- Discrete and continuous logic
- Linearization & characterization
- Configurable process alarms - unlimited
- Sequence control
- ICN and Modbus Communications
- Comprehensive diagnostics

**PROCESS I/O**

MOD30 RetroPAK comes standard with 2 universal analog inputs and 2 current outputs. Up to 11 additional I/O points can be added using plug-in, individual modules.



Side view of RetroPAK controller with plug-in modules

The RetroPAK adaptor cable connects directly to the 1750F series cable attached to the 1720N termination panel, and instructions are provided for wiring the cable to the RetroPAK controller depending on where you place your I/O.

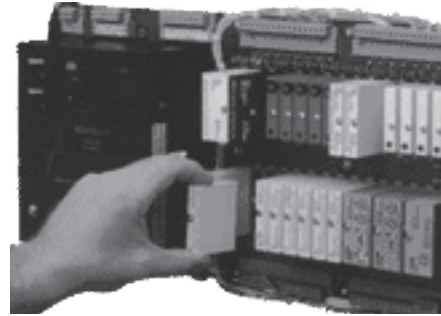


RetroPAK with adaptor for 1750F series cable

For even easier retrofit, the MOD30 RetroPAK can be ordered with the same I/O complement as the MOD 30 Controller XL (1701R) for a one-to-one replacement: 3 analog inputs, 2 analog outputs, 2 digital inputs and 3 digital outputs. The modules are pre-installed at the factory and instructions are provided to connect the RetroPAK adaptor cable to the correct terminals on the controller.

If the original installation contains MOD 30 Unified Instruments (1720/1703R, 1701N or 1711R), or the Standard Termination Panel 1720N is also being removed from the installation, the adaptor cable is not required and field terminations are made directly at the rear of the controller.

When replacing a 1710R Sequence and Logic Unit (SLU) or 1700N Math Unit, a second adaptor cable may be required to accommodate the additional built-in I/O on those units. The SLU also had an option for extended I/O using an expansion board. If your installation includes this option consult MicroMod for replacement options including the MODCELL Multiloop Processor.



**DISPLAY & OPERATIONS**

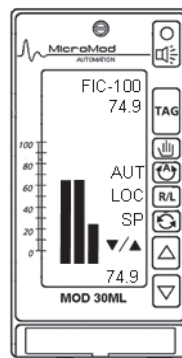
The MOD 30 RetroPAK has a bright, highly visible vacuum fluorescent front screen which is easily viewed from a greater distance and provides even more process information than the MOD 30 instruments. In addition, operation of the RetroPAK controller is simpler and more user-friendly than the 1700 series.

**Standard displays** - clear indication of process, setpoint and output in graphic and numeric format, with easy ramping that eliminates overshoot.

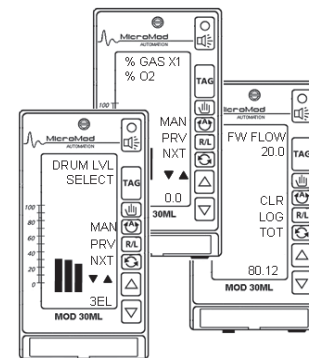
**User-definable alarm screens** - an unlimited number of process alarms with dedicated displays showing tag and variable status

**Tuning displays** - enter tuning parameters and adjust alarm trip points from password-protected screens on the front panel, without requiring a handheld device or personal computer.

**Custom Displays** - design user-defined displays with assignable keys for entering recipe values, controlling discrete devices, viewing multiple variables and other application-specific requirements.



Standard Display



Custom Displays

**SAFETY & SECURITY**

The RetroPAK includes all the features of the MOD 30 series instruments, and many more, for protecting process and personnel and minimizing downtime:

- Portable Memory Module backs up configured database and current process values (Note that the RetroPAK memory module is not interchangeable with the MOD 30 memory module).
- Configurable Initialization values on all parameters on power-up, on accidental power failure, or supervisory system failure including warm- and cold-start options
- Signal quality detection on all inputs & outputs
- Failsafe output settings
- Single-point I/O isolation
- Cut-wire & short-circuit detection & alarm
- Out-of-range & quality diagnostics

In addition a newer, more secure output holder is available for RetroPAK controllers that provides indication and manual control of the output signal. A feedback signal provides bumpless transfer when a new controller is installed. (Note: this option requires additional I/O points on the RetroPAK controller). For more detailed information on the 1705N Output Holder refer to specification sheet S-MOD-1750N. The RetroPAK can be used with existing MOD 30 1725F /1726F Output Holders, although it does not support connection to the 1751F Output Holder cable. Contact MicroMod for more information on using existing MOD 30 Output Holder Panels.



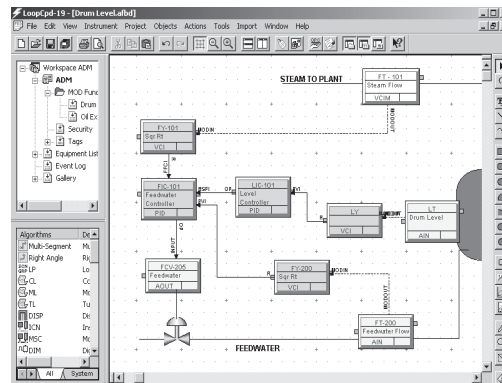
RetroPAK Controllers with 1750N Output Holders

**CONFIGURATION**

The RetroPAK’s database structure is free format, not fixed like the MOD; therefore MOD 30 databases can’t be imported or copied into the RetroPAK. Basic PID loops, without math or logic, can be configured from the front panel of the RetroPAK controller. For strategies with additional control functions, the Visual Application Designer software is required. MicroMod also offers a factory configuration service: with the original MOD 30 configuration file or documentation, we will duplicate the control strategy in the RetroPAK and provide you with a configured controller and system documentation.

The Visual Application Designer software (VIZAPP) provides a Windows-based environment for creating, editing, downloading, documenting and debugging controller databases. It provides automatic, on-screen documentation of the configuration and on-line, context sensitive help. Standard templates for single loop control, single station cascade and other common strategies are provided in the software library.

Live debug and runtime facilities allow on-line verification of the database and process logic, and trend windows simplify loop tuning at commissioning time.



**COMMUNICATIONS**

The RetroPAK controller includes the Instrument Communications Network (ICN) as standard for peer-to-peer communication with remaining MOD 30 instruments, other RetroPAK controllers, MODCELL Multiloop Processors, the Local Control Panel (LCP), and the MOD 30 Communication Link to a personal computer. This allows replacement of one MOD 30 instrument at a time, without having to reconfigure the addresses in the remaining instruments, the LCP, or the personal computer software.

MOD 30 RetroPAK also offers the option of a second serial communication port, which can be added using a plug-in module. This network can be Modbus RTU, RS-485 or RS-232 or a second ICN network.

ORDERING INSTRUCTIONS

1. MOD30 RetroPAK is a licensed product. End-user information must be provided including company name, address, telephone and contact name.
2. If Configuration Services are required, original MOD 30 database documentation or software file must be provided.
3. If RetroPAK will not be configured by MicroMod, ViZapp software is required to configure the controller. MOD 30 databases are not transferable to MOD30 RetroPAK.

MOD30 RETROPAK	08	09-10	11	12	13 - 15
<b>Base Controller</b> Standard bezel, 24Vdc power supply	M30RETRO				
<b>Approvals</b> General Purpose CE (European Community destinations only)		10 12			
<b>I/O Options - see Note 1</b> Standard I/O only (two universal analog inputs, two current outputs) Pre-installed I/O modules (one additional analog input, 2 digital inputs, 3 digital outputs) Standard I/O only, NEMA 4, conformal coating			1 2 5		
<b>Design Model</b> Design Model				C	
<b>Programming / Special Features - see Note 2</b> None Configured to customer's MOD 30 specifications					STD M30

**Note 1:** Pre-installed modules match MOD 30 1701R I/O. Other I/O combinations may be ordered by using Standard I/O option and selecting additional modules from P-MOD-MODULES

**Note 2:** Customer must provide current database files and documentation. Controller will be configured as per documentation supplied. Excludes 1710R/1711R Sequence and Logic Unit.

**Configuration Software**

This is a licensed package. The following end-user information must be supplied with each package ordered:

- Company name & address
- Telephone, fax, email
- Contact name

	VIZAPP	06	07-09	DEV	10	11	12
<b>Base Configuration Software</b>	VIZAPP						
<b>Communications Interface</b> Deluxe - ICN and XModbus OPC Servers <sup>1</sup> ICN OPC Server <sup>1</sup> Extended Modbus OPC Server <sup>1</sup> Network (No OPC Server included) <sup>2</sup>			DLX ICN XMB NET				
<b>Functionality</b> Development				DEV			
<b>Software Key Type</b> None (for adding to existing MicroMod key, e.g. Micro-PWC) Parallel Port USB (Universal Serial Bus)						000 PAR USB	
<b>Extended Support Services (ESS)</b> None One Year Technical Support & Version Updates							000 ESS

<sup>1</sup>ICN is required if system includes a MOD 30 Link (1720N, 1731N MiniLink or 1733N MiniLink).

<sup>2</sup>Includes custom downloading cable

<sup>3</sup>For remote PC connected to another PC which has a Modbus or ICN OPC Server installed

**GENERAL SPECIFICATIONS**

PID LoopsL six single or four cascade  
 Operating Range: DC option: 20-50V dc  
 Fuse: 2.5 Amps (ac), 4.0 Amps (dc)  
 Power Consumption (120V rms, 60Hz, Full load)  
 50W maximum  
 Data Retention (Non volatile RAM memory and Portable  
 Memory Module): Typically 10 years with instrument  
 unpowered  
 Operating temperature: 0 to +50°C  
 Storage Temperature: -40 to +75°C  
 Humidity: 5 to 95% RH, noncondensing  
 Data Retention (Non volatile RAM memory and Portable  
 Memory Module): Typically 10 years with instrument  
 unpowered

**I/O PERFORMANCE SPECIFICATIONS****Analog Inputs****Built-in**

Range: 0 – 6V  
 Minimum span: 0.1V  
 Impedance: 10M ohms minimum  
 Common mode: 45Vdc  
 Isolation: Full galvanic isolation

**Modular (2001AZ10101B)**

Range: ±10Vdc  
 Limits: -11V to +11V  
 Input resistance: 1M ohms  
 Noise filter: 3db at 5 Hz, 3db at 3Hz  
 Resolution: 16 bits  
 Sensitivity: 0.4mV, 4µV  
 Accuracy (calibrated): 0.1%  
 Isolation: 250vrms  
 Max. survivable input: ±300V dc or 25V ac (diff.)  
 Common mode rejection: 100dB at 50 Hz min.  
 Normal model rejection: 40db at 60Hz min.

**Analog Outputs****Built-in**

Range: 0 – 22mA non-isolated  
 Minimum span: 1 ma  
 Load: 22mA at 1000 ohms max.

**Modular (2003AZ10101A)**

Range: 4-20mA  
 Limits: 0 – 25mA  
 Open circuit voltage : 26V max  
 Isolation : 250V rms  
 Resolution : 12 bits  
 Sensitivity : 5µA  
 Accuracy : ±0.2%  
 Load limit : 0 – 800 ohms

**PHYSICAL SPECIFICATIONS****Height**

Bezel - 5.69" (144.5 mm)  
 Panel cutout - 5.47" (138.9 mm)

**Width**

Bezel - 2.87" (72.9 mm)  
 Panel Cutout - 2.69" (68.3mm)

**Depth**

Behind the panel - 15.75" (400 mm)  
 Front of panel - 1.13" (28.7 mm)

**Weight**

Base instrument: 4.7 lbs.  
 Fully module loaded: 6.0 lbs.

**Mounting**

Instrument mounts directly in a panel or may be mount-  
 ed in a 1705FZ Instrument Trim Bezel.

**Safety Approvals**

MicroMod General Purpose  
 FM/CSA Certified Class I, Division 2, Groups A, B, C, D

**Digital Inputs, non-isolated (2006AZ10100A)**

Contact sense: 5V/0.5mA dc typical  
 Logic low input: 0 to 0.65V dc or 50K ohms min  
 Logic high input: 2.2 to 24V dc or 50 ohms max  
 Max. input current: 2.5mA dc  
 Response time: 1 msec

**Digital Outputs, non-isolated (2007AZ10100A)**

Output voltage range: +5 to +24V dc

Note: the specifications provided here are for the inputs  
 and outputs associated with the MOD 30 RetroPAK when  
 used with the adaptor cable and 1750F series connector  
 cables to the 1720N termination panel.

There are other input, output and communication modules  
 available that allow field signals to be wired directly to the  
 rear termination block. Up to 11 total plug-in modules may  
 be added to the RetroPAK. These include:

**Current input**

Voltage/millivolt input

Thermocouple input

RTD input

Current output

Digital input, isolated & non-isolated

Digital output, isolated & non-isolated

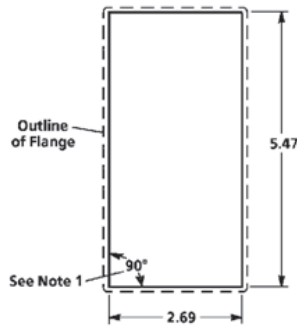
Mechanical relay output

Modbus RS-232 communication

Modbus RS-485 communication

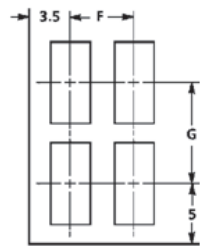
For detailed information on these module refer to  
 S-MOD-MODULES

### MOUNTING DIMENSIONS



PANEL CUTOUT

DISTANCE BETWEEN CENTERS

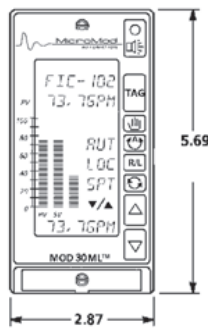


Distance between centers when mounting multiple controllers (inches)

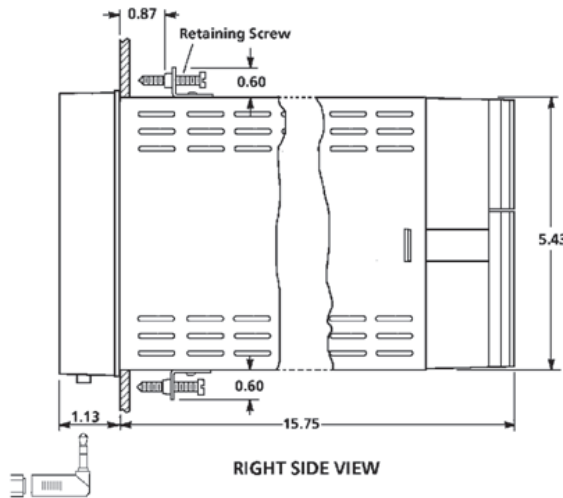
	F	G
Recommended	4.0	8.0
Minimum	3.5	7.0

Notes:

- When mounting housings in a panel or in a rack with a bezel turn the retaining screws until the point touches the back of the panel or rack. Excessive tightening of retaining screws can distort the housing. The housing must be square after adjusting retaining screws.
- All dimensions in inches (mm)



FRONT VIEW



RIGHT SIDE VIEW

inches	mm	inches	mm
0.6	15.2	5.43	137.9
0.87	22.1	5.47	138.9
1.13	28.7	5.69	144.5
2.69	68.3	7	177.8
2.87	72.9	8	203.2
3.5	88.9	15.75	400
4	101.6		

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Printed in USA April 2019

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