



# Link Product Comparison

## Press Control / Automation Control

General Features				
Feature	Description	5100 MPC	5100 APC	5100 AMC
Color Touch Screen	Touch screen with intuitive interface. Graphical and numeric indication of crank angle, motor direction, and other configurable information displayed at all times at the top of the display.	5.6"	10.4"	10.4"
Resolver Based	All crankshaft timing adjustments for programmable limit switch, die protection, tonnage monitoring, and other systems are made through the screen and stored/recalled with the job.	Yes	Yes	Yes
Job (Recipe) Storage	The settings for all systems are stored under a job number and description and can be recalled the next time the job is run.	100	1000	1000
On-Screen Diagnostics	The state of all inputs and outputs can be seen on the screen without opening the enclosure. Reason for the last stop and current status are clearly called out for ease of troubleshooting.	Yes	Yes	Yes
Brake Monitor	Checks and verifies stop time against limits.	Yes	Yes	Yes
Speed Adjusted Top Stop	Press stops at top regardless of speed for variable speed presses.	Yes	Yes	Yes
Production/Bin/Scrap Counters	Each counter group has a part counter, bin counter, and scrap counter. The first group has an additional quality counter for stopping every X strokes for a measurement.	Up to 2 groups	Up to 12 groups	Up to 12 groups
Sensor-Based Counting	Counters can be incremented by strokes or from sensors actually detecting parts or scrap as they drop in a bin. Each counter group is individually configurable for stroke or sensor based counting.	Yes	Yes	Yes

Integrated Gaging Support	Allows gaging patterns for programmable limit switch, die protection, and tonnage monitor systems with sequence lengths up to 256 strokes.	No	Yes	Yes
Integrated Part Tracking	Allows checking part characteristics based on die protection and analog process monitoring system, tracking parts that have been checked through the die, and taking different actions on parts (such as diversion to scrap bin) at any point in the die. Supports up to 32 die stations and 12 output paths.	No	Yes	Yes
Optional Press Speed Control with Motor Load Readout	Press speed can be controlled through the operator terminal and stored/recalled with the job. Percent motor load can be displayed. Default fallback speed for setup modes can be configured.	Yes	Yes	Yes
Press Speed Capability	Maximum press speed supported.	2000 SPM	2000 SPM	2000 SPM
Built-in Hardware and Software Interfaces for Integration	Allows integration into productions cells or multi-press lines, including the ability to completely automate die changes with the proper auxiliary equipment.	Yes	Yes	Yes, except for press control specific features.
Time/Date Stamped Event Log	See the last 256 reasons for stopping the press, including press speed and angle when the stop occurred.	256 entries	256 entries	256 entries
Security Profiles / Operator Access Control	16 different security profiles are available with granular permissions that allow detailed control over who can do what.	16	16	16
Optional Card/Fingerprint Reader Interface for Security Login	Use RFID readers or fingerprint readers for automatic security login and access control.	Yes, 1 device	Yes, up to 2 devices	Yes, up to 2 devices

Optional Serial Feed Interface	Many feeds are supported from CHS, Coe, Dallas, Formtek, PA, RapidAir, Unico, Vamco, and others. Various feed settings become part of the job and are automatically set when a job is recalled. Also requires optional 805-3 communication card on 5100 MPC.	Yes	Yes, 2 supported for infeed/outfeed	Yes, 2 supported for infeed/outfeed
Optional Modbus/RTU Interface	Allows the status of the system to be read and a large number of parameters to be set by external system over RS-232 or RS-485. Enables integration into large press lines and supports IOT applications. Also requires optional 805-3 communication card on 5100 MPC.	Yes, 1 connection	Yes, up to 4 separate connections	Yes, up to 4 separate connections
Optional Modbus/TCP Interface	Allows the status of the system to be read and a large number of parameters to be set by external system over Ethernet. Enables integration into large press lines and supports IOT applications. Also requires optional 805-3 communication card on 5100 MPC.	Yes, 1 connection	Yes, up to 4 simultaneous connections	Yes, up to 4 simultaneous connections
LinkNet Integration	Optional LinkNet shop floor data collection system collects data on production, down time, tonnage, OEE, and more. Web based interface and extensive reporting. Jobs can be stored to and recalled from the network resulting in effectively unlimited job storage.	Yes	Yes	Yes
Works with 805-7 Press Synchronization Module	Multiple presses can be made to stroke in sync with each other using the optional 805-7 press synchronization module.	Yes	Yes	Yes
Works with Link Drive Presses	Systems are configurable to work with the special characteristics of link drive presses.	Yes	Yes	Yes
Free Telephone/Email Support	All Link equipment comes with free telephone and email support. Link's advanced diagnostics enable troubleshooting the overwhelming majority of issues over the phone.	Yes	Yes	Yes

## Press Control

Feature	Description	5100 MPC	5100 APC	5100 AMC
Compliance with Safety Standards	Diverse redundant, cross checking micro-processor control complies with all applicable safety standards. UL and CUL listed.	Yes	Yes	N/A
No Programming Needed	System is highly flexible by configuring options and parameters. No PLC or other programming is involved.	Yes	Yes	N/A
Number of Operator Stations Supported	For operations that require multiple operators, each has his/her own operator station.	Up to 5	Up to 5	N/A
Nameable/Configurable Stop Inputs	While many of the inputs are fixed function, a number of the stop inputs on the 5100 can be named and configured for easy integration and diagnostics with auxiliary equipment.	Up to 50	Up to 50	N/A
Supports a Wide Variety of Clutch/Brake Types	Combination clutch/brake, separate clutch/brake with configurable timing, hydraulically operated clutch/brake, soft clutch/soft brake, etc. are all supported with configurable parameters.	Yes	Yes	N/A
Integrated Motor Control	Lube and Main motor can be started and operated through the operator interface terminal or via separate pilot devices.	Yes	Yes	N/A
Flywheel Brake Support	Flywheel brake operation is supported in conjunction with motor controls.	Yes	Yes	N/A
Lube System Support	Highly configurable for a wide variety of lube systems – including multiple lube systems per press.	Yes	Yes	N/A
Integrated Hydraulic Overload System Support	A variety of hydraulic overload schemes are supported with configurable parameters.	Yes	Yes	N/A

Built-in Logic to Handle Interaction with Transfers, Robots, Rolling Bolsters, and Die Clamps.	Special interlock mechanisms and hardware are available to make operation in conjunction with a wide variety of auxiliary equipment seamless.	Yes	Yes	N/A
Motorized Slide Adjust Supported	Motorized slide adjust systems can be handled with manual controls or can be automated and monitored (See the Automatic Setup section for more options)	Manual Only	Manual or Automatic Setup	Automatic Setup Only
Configurable Safety Relay Outputs for Auxiliary Equipment	Robots, feeds, transfers, etc. can be stopped when configurable conditions (E-Stop buttons, light curtain broken, gates opened, etc.) are true.	Up to 4	Up to 4	N/A
Standard and Advanced Operating Modes Supported	Clutch/Brake Test, Setup/Stop Time Test, Bar Mode, Inch, Timed Inch, Micro-Inch, Trip, Single Stroke, Auto Single Stroke, Maintained Continuous, Continuous, and Continuous on Demand Modes are available	Yes	Yes	N/A
Engineered for the Application by Link	Each control system that Link produces is engineered for the specific application based on the press, auxiliary equipment, and customer requirements. Numerous enclosure options are available including the capability to include feed, transfer, or other auxiliary equipment interfaces into one console. Control drawings supplied are NOT generic but are for the specific control.	Yes	Yes	N/A

## Automatic Setup

Feature	Description	5100 MPC	5100 APC	5100 AMC
Number of Shut Height Systems Supported	Up to 2 slide shut height adjustment systems are supported using rotary or linear transducers.	N/A	Up to 2	Up to 2
Slide Jogged Through Operator Terminal and/or External Push Buttons	The slide can be manually jogged through the operator terminal (including pulsed operation for very fine adjustment) and, if desired, with external push buttons.	N/A	Yes	Yes
Auto-Move of Slide	The system will move the slide to the configured shut height with the push of a button in a consistent manner that reduces backlash errors. The operating point of the slide is stored and recalled with the job.	N/A	Yes	Yes
Shut Height Movement is Interlocked with the Counterbalance	Shut Height adjustment is only attempted when the counterbalance pressure is at its setpoint. This prevents binding and/or damage to the shut height system due to a grossly under or over counterbalanced system.	N/A	Yes	Yes
Shut Height Supports English or Metric Units.	The shut height can be read out or set in inches or millimeters. The measurement unit can be changed at any time without recalibrating the system.	N/A	Yes	Yes
Number of Counterbalances Supported	Up to 2 counterbalances are supported. An integrated counterbalance valve is available with auto/manual operation and LOX valve. In automatic mode the counterbalance pressure is maintained at the configured setpoint for the job.	N/A	Up to 2	Up to 2
Number of Cushions Supported	Up to 16 cushions are supported. An integrated cushion valve is available with manually set minimum pressure. In automatic mode the cushion pressure is maintained at the configured setpoint for the job.	N/A	Up to 16	Up to 16
Number of Hydraulic Overloads Supported	Up to 2 hydraulic overloads that can be adjusted on a job basis are supported (not all hydraulic overload systems have this capability). In automatic mode the hydraulic overload trip point pressure is maintained at the configured setpoint for the job.	N/A	Up to 2	Up to 2

Counterbalance, Cushion, and Hydraulic Overload Supports Multiple Units	These systems can be individually set to use force units of pounds, kilograms, tons or metric tons. Pressure units can be pounds per square inch, kilopascals, or bar. The measurement units can be changed at any time without recalibrating the system.	N/A	Yes	Yes
All Systems are Monitored	The shut height is constantly monitored and the system will assert a stop if it goes out of its configured tolerance. Counterbalance, Cushion, and Hydraulic Overload pressures will generate a stop if they go out of tolerance.	N/A	Yes	Yes
Extensive Diagnostics	Shut height systems show the state of all motor outputs, which inputs have power on them, the state of up/down limits switches, and various transducer diagnostics. All air system indicates the state of fill, dump, and auto/manual outputs.	N/A	Yes	Yes

## Die Protection

Feature	Description	5100 MPC	5100 APC	5100 AMC
Number of Channels	Total number of die protection channels supported for the system.	4	Up to 80	Up to 80
Easy Addition of Channels	The die protection modules used with the 5100 APC and 5100 AMC can be added 8 or 16 channels at a time, as needs increase.	No	Yes	Yes
Channels are Namable	Each channel can be named on a job-by-job basis for easy diagnostics and clarity of operation.	Yes	Yes	Yes
Number of Standard Channel Logic Types	Standard types support typical die protection applications for part detection, stock buckle, long feed/short feed, slug out, stripper plate monitoring, transfer monitoring, and others.	10	10	10
Custom Channel Logic Type	For special cases, the user can define custom logic types using rules. Need to make sure a sensor fires 5 times in a timing window? A custom type can be configured to do so.	No	Yes	Yes

Supports NPN and PNP Sensors	Each channel can be configured on a job-by-job basis for NPN or PNP sensors. This is automatically recalled as part of the job.	Yes	Yes	Yes
Highly Flexible Channel Configuration	Normally open or closed sensors, debounce, cycle delays, stop types, and timing windows are configured per channel and stored/recalled with the job. Typical situations in the stamping environment (stuck slugs, bouncing strips, etc.) are easily accommodated,	Yes	Yes	Yes
Increment Sensor Based Part and Scrap Counters	Most channel logic types can be set to increment a particular sensor based part or scrap counter. In fact, where parts or scrap can come out in multiple locations, more than channel can increment the same counter.	Yes	Yes	Yes
Automatic Removal of Bypassing	Individual channels can be set to automatically bypass in setup mode and remove the bypass in production modes. "Limited Bypass" will remove a general bypass of the system after a user configurable number of strokes. A setting is also available to remove a general bypass of the system when switching from setup to production mode.	Yes	Yes	Yes
Threading Bypass	"Threading Bypass" allows each individual channel to be bypassed for a configurable number of strokes. This allows sensors to automatically remove the bypass as material is moved through the die during initial loading of the job.	No	Yes	Yes
Advanced Real Time Diagnostics	Sensor On/Off state, input voltage, and graphical and numerical display of where in the stroke the sensor activated is shown – including multiple activations. Several previous strokes can be viewed to allow diagnosing presses that take more than one stroke to stop.	Yes	Yes	Yes
Supports Integrated Part Tracking	Channels can be set to mark parts in a station as bad when they fail a check or can be set to bypass based on part status such as when a transfer position is empty	No	Yes	Yes
Supports Integrated Gagging	Channels can be set to automatically bypass on particular strokes in a gagging sequence when a part or die feature is not present.	No	Yes	Yes



Die Protection Module Acts as Connection Box	5122 and 5123 die protection units used with the 5100 APC and 5100 AMC have front panel connections for individual sensors and optional single cable bulk connection capability (Link or customer supplied bulk connector).	No	Yes	Yes
Die Protection Module Supplies Sensor Power	5122 and 5123 die protection units used with the 5100 APC and 5100 AMC have a built-in power supply for sensor power.	No	Yes	Yes
Available Separate Powered Connection Box	Optional 2620 powered connection box is available for use with 5100 MPC to provide front panel connections for individual sensors and a power supply for sensors.	Yes	N/A	N/A

## Programmable Limit Switch

Feature	Description	5100 MPC	5100 APC	5100 AMC
Number of Channels	Total number of programmable limit switch channels supported for the system.	Up to 8	Up to 96	Up to 96
Easy Addition of Channels as Needs Increase	The programmable limits switch modules used by the 5100 APC and 5100 AMC can be added 8 channels at a time. Those used by the 5100 MPC can be added 4 channels at a time.	Yes	Yes	Yes
Channels are Nameable	Each channel can be named on a job-by-job basis for easy diagnostics and clarity of operation.	Yes	Yes	Yes
Number of Output Modes	The 5100 MPC supports basic operating modes such as turning on for a particular portion of the stroke and firing for a set time at a particular angle. The 5100 APC and 5100 AMC support more advanced modes such as Toggle and Input related modes.	4	7	7

Supports Speed Advanced Outputs	Speed advance allows mechanical systems with a response time (such as roll lift on a feed) to be accommodated so that as press speed varies the angle in the stroke at which the action actually happens is maintained. This allows such jobs to be run at different speeds with the same mechanical action.	No	Yes	Yes
Supports Conditional Outputs	PLS channels can activate periodically after a configurable number strokes or parts, only on certain strokes in a gagging sequence, only on a certain part status from part tracking, etc.	Stroke Only	Yes	Yes
Inputs for Advanced Functions	Inputs can check the proper operation and/or travel of gagged or other mechanically moving die features, activate outputs, or have one or more outputs follow an input with an optional time delay.	No	8 for each installed output bank	8 for each installed output bank
Real Time Diagnostics	Each channel shows its On/Off state, information related to conditional outputs, and a graphical representation of where it is On in the stroke.	Yes	Yes	Yes
Electro-Mechanical and Solid State Outputs Available	Electro-Mechanical relays are generally used for press speeds up to 200SPM or where high current capability is needed. AC or DC solid states relays are available for high-speed applications or where no contact bounce is permissible. Electro-mechanical or solid state selection is per bank of PLS outputs.	Yes	Yes	Yes
Supports Integrated Part Tracking	Channels can be set to activate based on the part status at the channel's die station. For instance, a channel can be set to activate an air blow-off when the part in the last station is good. A separate channel can be set the same way except that it activates when the part is bad. One channel blows good parts into a good parts bin while the other blows bad parts into a scrap bin.	No	Yes	Yes
Supports Integrated Gagging	Channels can be set to activate or not on particular strokes in a gagging sequence.	No	Yes	Yes

## Tonnage Monitor

Feature	Description	5100 MPC	5100 APC	5100 AMC
Number of Channels	Total number of tonnage monitor channels supported for the system.	4	4	4
Captures Forward and Reverse Tonnages	Forward and reverse (or snap through) tonnages are captured and monitored against limits.	Yes	Yes	Yes
Each Channel has High, Low, and Reverse Limits	Forward tonnages must be between the low and high limit. Reverse tonnages must not exceed the reverse limit. These limits are stored and recalled with the job.	Yes	Yes	Yes
Machine Forward and Reverse Rating Alarms	Both forward and reverse machine-rating limits are enforced based on the machine capacity.	Yes	Yes	Yes
Supports Data Windows	Data Windows are additional sets of low and high limits that can be used to monitor a specific feature of the tonnage waveform, such as clamping forces or an individual punch. Data window settings are stored and recalled with the job.	No	Up to 4	Up to 4
Real Time Display of Tonnage Signature	The tonnage signature is displayed on the operator terminal, including while the press is running. It can be panned and zoomed and is extremely useful for diagnostics and for determining which areas of the signature are suitable for monitoring with data windows. Multiple strokes can be overlaid to see variation.	No	Yes	Yes
Supports Reference Signature	Once the tool has been set up properly, a reference signature can be stored for the job and overlaid on the screen with the current signature for comparison.	No	Yes	Yes
Supports Total Capacity Derate Curve	The derating curve for total press capacity can be entered and, if so, will generate a total capacity alarm when too much tonnage is generated too high in the stroke. For units that support tonnage signatures, this curve is shown with the signature.	Yes	Yes	Yes

Flexible Bypassing Modes	Low limits can be configured to automatically bypass when in a setup mode – reducing or eliminating the need to bypass the system as a whole in most case. General bypass can be configured to automatically un-bypass when switching to production mode.	Yes	Yes	Yes
Low Limit Ramp-up Bypass	For systems that ramp up from a slower starting speed to a faster operating speed (with consequent variation of the tonnage), the low limits can be configured to bypass for a configurable number of strokes and then turn themselves back on. This allows tight production limits to be used once the system reaches the normal production speed.	Yes	Yes	Yes
Supports Integrated Part Tracking	Low limits can be set to automatically bypass when there is an empty position or a bad part in the system.	No	Yes	Yes
Supports Integrated Gagging	Data window limits can be used to provide particular limits on specific strokes in the gagging sequence. This allows tight production limits to be maintained on strokes that generate different tonnages due to gagged die sections.	No	Yes	Yes

## Analog Process Monitor (In-Die Measurement)

Feature	Description	5100 MPC	5100 APC	5100 AMC
Number of Channels Supported	The total number of analog process monitor channels supported by the system.	N/A	Up to 4	Up to 4
Highly Flexible Inputs	Each channel input type is configurable on a job-by-job basis for strain gages, a number of voltage ranges (from +/- 10mV to +/- 10V), and 4 to 20mA current.	N/A	Yes	Yes
Multiple Measurement Types	Each channel can measure the lowest, highest, or average value read in a configurable measurement window. An additional mode is available that compares all readings taken in the measurement window to the limits.	N/A	Yes	Yes

Flexible, Configurable Limits	A set of high and low warning limits and a set of high and low limits are provided for each channel. Each limits has configurable actions such as "mark part bad" (for part tracking), status display only, or can generate a stop.	N/A	Yes	Yes
Measurements in Engineering Units	Readings are converted into a variety of built-in engineering units or custom units. Limits are entered in the unit for the channel (i.e. inches, millimeters, etc.) rather than voltage or current.	N/A	Yes	Yes
Extensive Diagnostics	Input voltage or current readings, current engineering unit readout, and sensor graph versus crank angle allow finding the right place in the stroke to make the measurement.	N/A	Yes	Yes
Supports Integrated Part Tracking	The system can mark parts as bad when they fail checks. Channels can automatically bypass based on part status (such as an empty position in a transfer).	N/A	Yes	Yes
Supports Integrated Gaging	Channels can automatically bypass on specific strokes in a gaging sequence.	N/A	Yes	Yes