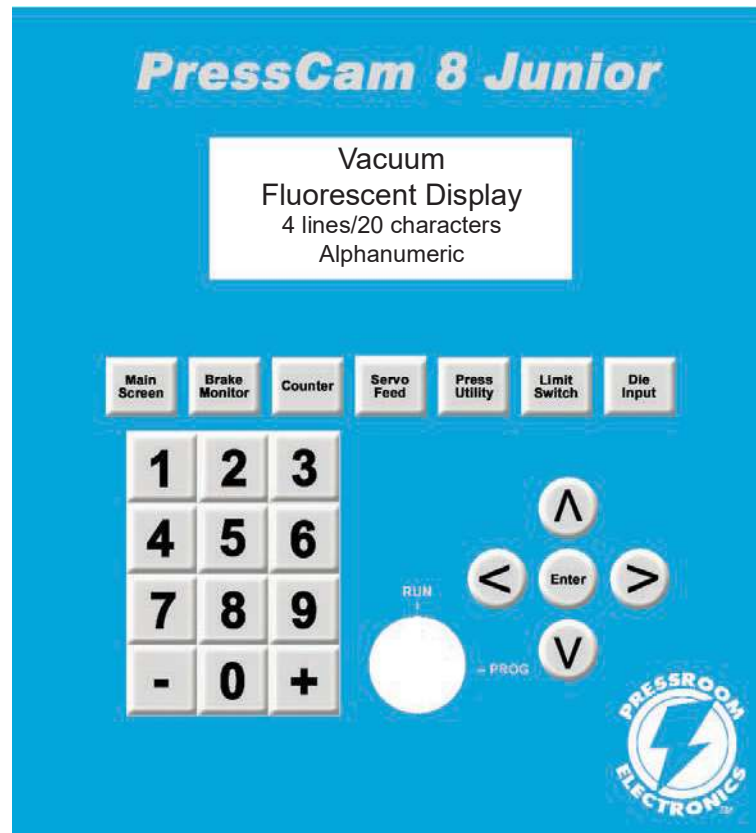


Punch Press Automation

PressCam 8 Junior Layout



Design Features

- All six Limit Switch Outputs can be set to cycle (non-timed) two times per crank rotation by setting an open / close crank angle.
- The last three outputs can be set for timed, non-timed, delayed, and hold or cycled two times per crank revolution.
- Major faults such as E-Stop, motion, brake, and sensor faults are handled by two force-guided relays (Form B Safety relays).
- The six outputs are small, high-speed, high-capacity relays.
- Brake and die sensor inputs are optically coupled and can be either AC or DC (sourcing or sinking).
- Up to 100 Jobs can be saved using a nonvolatile memory chip. The memory chip is removable for ease of transfer. Each Job Number stores a name and/or number up to 7 characters for easy identification.
- Built-in Brake Monitor will issue a warning when the programmed warning time is exceeded and will issue a failure signal when programmed stop time is exceeded.
- True Motion Detection system checks for lack of motion (Motion Fault) and unintended motion (Drift Fault).
- SPM Indicator (Strokes per Minute).
- Crank angle shown graphically and in large numbers.
- Speed compensation of user selected outputs.
- Servo feed interface.
- Stroke, Batch, Quality, and Part Counters to keep track of operation.
- Password and/or Supervisory Controlled Selector Switch to prevent altering of parameters, except for the counters.
- PCLink to allow offline job creation and storage.
- Built-in 90° and 270° stop time tester.

Punch Press Automation

PressCam 8 Junior

Overview



The PressCam 8 Junior is a resolver-based press automation controller that incorporates a programmable cam limit switch, timed-based brake monitor, servo feed control, four counters, and a die protection system. The PressCam 8 Junior is controlled by a 16-bit computer that constantly checks the resolver for accuracy.

The PressCam 8 Junior has a keypad, menu, cursor buttons (for easy navigation and operation), and a four line (20 characters each line) vacuum fluorescent display for easy viewing purposes.

A “RUN/PROG” keyswitch is also provided where, while in the “RUN” mode, you are not able to alter any parameter or job change. The “RUN” mode only allows the user to clear counters and reset die sensor faults. In the PROG mode, the Die Faults do not open up the fault relays which allows for die setups. All other faults will cause the fault relays to open. If the password feature is enabled, you must first enter in the three digit password in order to pass into the PROG mode to allow parameter changes.

Industrial Grade Brushless Resolver Transducer



The heavy duty brushless resolver transducer replaces the current mechanical rotary cam switch. This unit was designed for hostile industrial environments such as punch press mechanical shock and vibration, extreme temperature and humidity, oil, coolant, and lubrication mists. The resolver transducer features excellent repeatability and gives absolute shaft position feedback. High speed operation along with long transducer cable (runs up to 600 feet/183m) give the resolver transducer wide application ranges. The resolver transducer is a passive device which contains no sensitive electronics and has superb noise immunity.

The resolver mounts easily to an end of a crankshaft and can rotate clockwise or counter-clockwise. Simple connector ended transducer cabling is supplied to connect the resolver to the PressCam 8 Junior controller console. The PressCam 8 Junior’s microprocessor-based control constantly monitors the resolver position and displays both the angular position of the shaft and speed of the machine (tachometer). 3/4” (19 mm) resolver shaft diameter.

Punch Press Automation

PressCam 8 Junior

Specifications

Input Power: 3 Voltage Ranges:

24VDC (optional)
120VAC (standard)
240VAC (optional, jumper selectable)
All AC voltages work with 50 or 60 Hz
10 watts with all relays on

Fuses:

<i>I/O Board:</i>	F1 to F8	LS Outputs	5A Fast Blow (20-023)
	F7	Power	1A Slow Blow (20-022)
	F9 to F15	Die Inputs	5A Fast Blow (20-023)
	F35	12VDC	5A Fast Blow (20-023)
<i>Computer:</i>	F1	Power	5A Fast Blow (20-023)

Indicators:

Computer: Vacuum Fluorescent 4 lines/20 characters
-5V (GRN) D10

<i>I/O Board:</i>	8 Optically coupled inputs (RED):
	Power ON D22
	Brake D21
	Die 1-6 D15-D20
	6 LS Outputs (GRN)
	LS1-6 D1-D6

Set Points:

Stroke Count:	0 to 999,999	strokes
Batch Count:	0 to 999,999	strokes
Quality Count:	0 to 999,999	parts
Part Count:	0 to 4	parts/stroke
	0 to 999,999	parts total
Batch Size:	0 to 999,999	strokes
Limit switch angle:	0 to 359	degrees
Limit switch timer:	0 to 9999	milliseconds
Die sensor angle:	0 to 359	degrees
Speed Compensation	0 to 99	degrees
Minimum Speed:	0 to 999	SPM
Maximum Speed:	0 to 999	SPM
Brake Warning:	1 to 999	milliseconds
Brake Failure:	1 to 999	milliseconds
Brake Actual:	1 to 999	milliseconds (+/-1 millisecond accuracy)
Motion:	0 to 5.9	seconds (1/10-sec increments)
Drift:	preset to 2	SPM (1/10 SPM increments)
Crank Angle:	0 to 359	degrees (1-degree increments)
SPM:	0 to 999	strokes/minute (+/- 1 SPM accuracy)

Construction

Stand Alone Unit:

All 18 gauge painted steel NEMA 12 lockable box with sealed front panel
Dimensions:
7 1/4" (184mm) width; 9" (229mm) height; 3 1/4" (83mm) depth

Panel Mount Unit:

All 18 gauge painted steel NEMA 12 with gasket around edge.
Dimensions: 6 1/2" (165mm) width; 7 1/8" (181mm) height

Temperature Range

0 to 50°C

Resolver

+/- 1° Resolution up to 600 RPM (+/- 2° Resolution from 601 to 1000 RPM)
Shaft loading: Radial 400 lbs., Axial 200 lbs. - 3/4" (19mm) diameter shaft
Standard cable 30' (9m). Maximum length of 600' (183m).

Punch Press Automation

PressCam 8 Junior

Main Screen

The Main Screen allows for Job Selection and Naming, Parts, and Batch Count.

Job: 00

Parts: 000000
Batches: 000000
Angle: 000 SPM: 000

Brake Monitor

In RUN Mode, the screen displays the Last Stop Time (in mSEC) and Last Dwell angle (in degrees).

Last Stop Time= 000
Last Stop Time= 000

In PROG mode, the original screen is displayed but with the Dwell angle added to the bottom line of the screen.

Warn= 000 Fail= 000
Motion Det= 0.0 sec
90° - 270° test
Dwell= Time= 000

Counter

The PressCam 8 Junior provides four types of counters: Stroke, Batch, Quality, and Part. When programmed, a counter will increment each time a part is ejected from the machine. When the programmed value is met, the controller will initiate an action.

Strokes: 000000
Parts: 000000 /1
Batch size: 000000
Quality: 000000

Servo Feed

Each PressCam 8 Junior job stores individual Servo Setup information and outputs through the RS-232 every time the unit is powered up, after you exit from the Servo Setup screen and after a job change. The Servo Setup screen can be accessed only while in PROG mode.

Speed 1-100: 000
Accel 1-100: 000
MPC 1-100: 000
Feed Len.: 000.000

Press Utility

This screen allows you to program the following settings: speed compensations, minimum speed, maximum speed, clear job, top dead center, PC link, and set password.

Speed comp: 000
Min= 000 Max= 000
ClrJob SetTDC
PCLink Password 000

Limit Switches

The following screen monitors the status of all six relay outputs as well as displays the current crank angle.

LS1 LS4
LS2 LS5
LS3 LS6
ANGLE: 000 MONITOR

Cyclical Outputs

S CLS-OPN CLS-OPN
LS1 000-000 000-000
LS2 000-000 000-000
LS3 000-000 000-000

S CLS-OPN CLS-OPN
LS4 000-000 000-000
LS5 000-000 000-000
LS6 000-000 000-000

Cycle Delay & Hold Outputs

	DLY CY	HLD CY
LS4	000	000
LS5	000	000
LS6	000	000

Timed Outputs

	STRT ANG	HLDmSEC
LS4	000	0000
LS5	000	0000
LS6	000	0000

Die Input

A unique name can be created for six die sensors (SEN1-SEN6) in the PROG mode while viewing the die monitor screens.

	TYPE	BGN END
SEN1	MOM	000-000
SEN2	MOM	000-000
SEN3	MOM	000-000

	TYPE	BGN END
SEN4	MOM	000-000
SEN5	MOM	000-000
SEN6	MOM	000-000

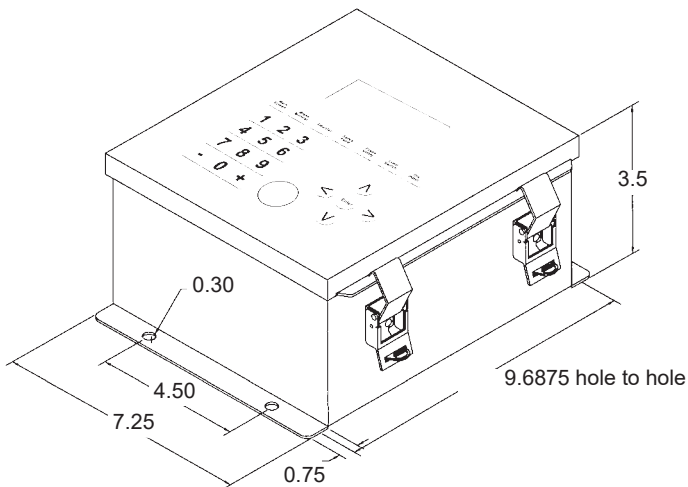
The Die Status Screen allows you to run the press and see when die sensors activate relative to press angle.

SEN1	*	SEN4
SEN2		SEN5 *
SEN3	*	SEN6
ANGLE: 000		MONITOR

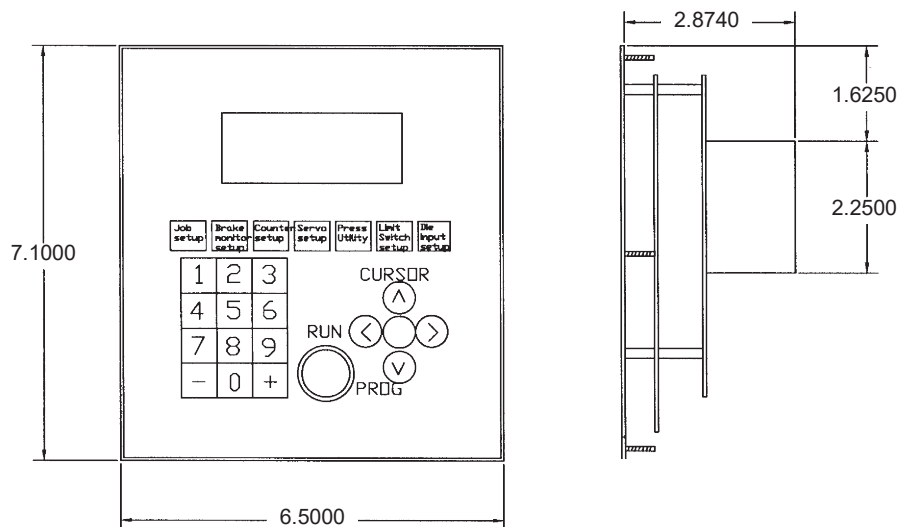
Punch Press Automation

PressCam 8 Junior

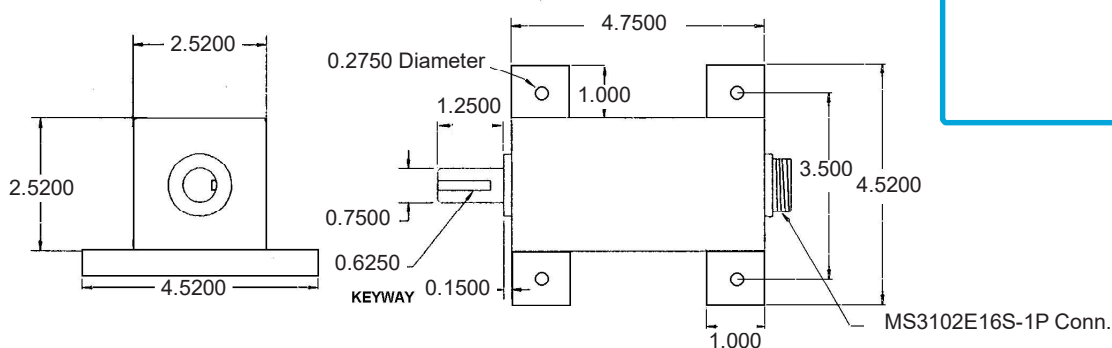
Dimensions



PressCam 8 Junior shown installed in a stand alone NEMA 12 (IP64) lockable enclosure



PressCam 8 Junior Front Panel Mount Cut-Out Dimensions



Resolver Transducer

Punch Press Automation

PressCam 8 Junior Overview/Ordering Procedure



The PressCam 8 Junior is a resolver-based press automation controller that incorporates a programmable cam limit switch, timed-based brake monitor, servo feed control, four counters, and a die protection system. The PressCam 8 Junior is controlled by a 16-bit computer that constantly checks the resolver for accuracy.



PressCam 8 Junior (all styles, Front panel & Stand alone). Includes resolver and cable

ORDERING PROCEDURE

1. Specify Mounting Style
 - F Front Panel Mounting to be installed in an existing control panel.
 - C Stand alone NEMA12 enclosure
2. Specify Controller input power
 - 1 24VDC
 - 2 120VAC 50-60Hz
 - 3 240VAC 50-60Hz
3. Specify Clutch/Brake Valve Voltage
 - 1 24VDC
 - 2 120VAC 50-60Hz
4. Resolver Connector Cabling
 - 30' (9m) of cable with connectors is supplied standard. If additional length is needed, specify in feet, 150' (46m) maximum.

EXAMPLE PART NUMBER

JR	-	C	-	2	-	1	-	30'
		Mounting Style			Input Power			Clutch/Brake Valve Voltage
								Resolver Cable

(For Custom Programming & Remote Field Upgrades, please consult factory at service@pressroomelectronics.com or (630) 443-9320.)

Part Number	Description
30-012	24vdc @ 2.2A power supply (90-260vac In) 3.9" L x 3.8" W x 1.4" H (99.1mm x 96.5mm x 35.6mm) for powering die protection sensors or other auxiliary devices

YOUR PART NUMBER

JR	-		-		-		-	