STOP	PRESS TO RESPOND	DOWNTIME MENU
MACHINE SETUP	SMASHUP	SAMPLES	MEETING/ TRAINING
MAINTENANCE	BREAKDOWN	FEED PROBLEMS	WAITING FOR OPERATOR
PART CHANGE	TOOL ADJUST	MATERIAL QUALITY	SCHEDULED SHUTDOWN
ORDER COMPLETE	TOOL CHANGE	WAITING FOR MATERIAL	QC INSPECTION
< MORE REASONS	PRESS RESPOND BUTTON THEN PRESS REASON	MORE > REASONS

Reduces Operator Entry Time

Ensures Accurate Timely Information

Eliminates Other Manual Entry

Provides Real-Time Reports

Industrial Touch Screen Systems for Monitoring Machine Uptime, Downtime, and Productivity

Top performance in technology, function and user friendliness: The new IMPAX TSS product line combines state-of-the art touch screen technology with powerful software utilities to create the most flexible stand-alone shop floor systems available to the industry.

For the first time, production monitoring and downtime analysis features are incorporated into inexpensive touch screen systems. The enhanced display (color or monochrome) makes the advanced features easy to access and use. With the simple touch of an icon, the user navigates the system to view the machine's daily uptime and downtime minutes by shift; production totals by shift; order, tool, and maintenance counters; machine speeds and efficiencies; daily downtime occurrences and total minutes per downtime reason. Weekly, monthly, and yearly values for these are also captured and available to the user. Data values for job-part-operator sessions are captured too. Passwords and special user screens can be created to control operator access.

IMPAX TSS Monitoring Systems

The systems are capable of collecting critical process data from virtually any machine that runs in a manual or automatic mode. This includes cold headers, thread rollers, stamping presses, screw machines, injection molding machines, multi-slides, spring coilers, forging presses, assembly/insertion machines, packaging and printing applications, drills/taps, saws, etc. After the data is collected on the shop floor, it can be transferred into a PC data-base program for further evaluation and report generation. Up to ninety (90) IMPAX TSS systems can be connected to one PC in a simple network configuration. Both wireless and wired Ethernet configurations are available as well. Finally, any shop floor screens or generated reports can be customized as necessary to meet the exact needs of the client.

Monitoring Functions

The IMPAX TSS product line applies a proprietary set of software modules to analyze input signals from sensors or machine controllers to determine the status and speed of any process. The systems will analyze and then display process-critical information pertaining to machine run condition, speed, productivity, efficiency, uptime and downtime. In the event of a machine or process stop-condition, the IMPAX TSS unit automatically converts from the production monitoring mode to a downtime reason entry and analysis mode. The user will be required to select from the user customizable downtime reasons and enter the correct one/s via the icons on the touch screen. Failure to do so will prevent the operator from starting the machine, which will guarantee that all downtime information is accurate and secure. Screens display a summary of downtime occurrences and minutes for each downtime reason, uptime and downtime minutes, productivity, tool and maintenance counters, and efficiencies.

Technical Features

The user can choose a vivid color or monochromatic touch screen display, in approximately 4", 6", or 8" sizes, with a gasket for flush mounting into a control panel or optional NEMA-rated enclosure. A screenless unit is also available resulting in a more affordable monitor with limited features.

Technical Data

Up to twenty (20) DC inputs, sixteen (16) DC outputs, optional two (2) analog input and two (2) analog output module, serial port with RS 422/485 communications or optional ETHERNET card. The display and control unit are powered by standard 120V AC.
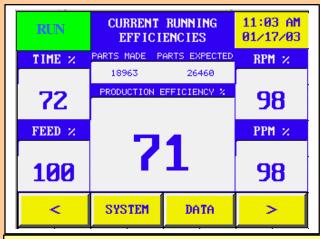
PROCESS TECHNOLOGIES GROUP, INC.
30W106 Butterfield Rd. Warrenville, IL 60555
Phone: 630-393-4777 Fax: 630-393-4680
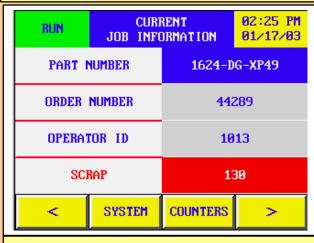E-Mail: impaxptg@aol.com Website: impaxtss.com
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IMPAX TSS-6 SAMPLE DISPLAY SCREENS & FUNCTIONS

RUN	ORDER COUNTER	00:11 PM 05/13/03
ORDER QUANTITY	100000	RPM 160
PARTS MADE	48122	PPM 148
PARTS TO GO	51878	MINUTES REMAINING
PERCENT TO GO	52	350
	DATA	COUNTERS

% COMPLETE — 48

The Order Counter Screen shows the Order Quantity, Parts Made, Parts to Go, Percent to Go, Percentage Complete, and Minutes Remaining to job completion. In addition, Revolutions Per Minute or machine cycle rate and Parts Per Minute are displayed.

STOP	RESPONDED	09:49 AM 01/17/03
SETUP	PREVENTATIVE MAINTENANCE	SAMPLE SETUP	DROPPING BLANKS
MACHINE ADJUSTMENT ENTERED	BREAKDOWN	SMASH UP	DRAW BENCH MAINTENANCE
NO STEEL	NO TOOLS	WORKING ON OTHER MACHINE	STEEL QUALITY
GO TO TOOL CHANGE SCREEN	GO TO MONITOR FAULT SCREEN	DRAW DIE LOADED	MODIFY TOOLS
DOWNTIME MENU	PRESS ONLY TO ENTER ADDITIONAL REASON!		MORE > REASONS

The Downtime Reason Entry Screen/s requires the user to select one or more of the listed reasons for a machine stoppage. After selecting the proper reason/s, the machine is again allowed to run. Response time to each machine stoppage is tracked too.

RUN	CURRENT RUNNING EFFICIENCIES	11:03 AM 01/17/03
TIME %	PARTS MADE 18963 PARTS EXPECTED 26460	RPM %
72	PRODUCTION EFFICIENCY %	98
FEED %	71	PPM %
100		98
<	SYSTEM	DATA	>

The Current Running Efficiencies Screen displays up to the minute percentage rates for Time, Feed Rate, RPM, PPM, and Production. Time and Production Efficiency reset each shift. Other efficiency screens are included.

STOP	DAILY DOWNTIME EVENTS & MINUTES 1	10:21 AM 01/17/03
SETUP	1	25	PREVENTATIVE MAINTENANCE	0	0
MACHINE ADJUSTMENT	4	16	BREAKDOWN	0	0
NO STEEL	0	0	NO TOOLS	0	0
TOOL CHANGE	1	7	LUBRICATION FAULT	1	3
<	SYSTEM	COUNTERS	>

The Daily Downtime Reasons Screen displays the number of occurrences (events) and minutes per downtime reason. Weekly, Monthly, and Yearly Screens are also available.

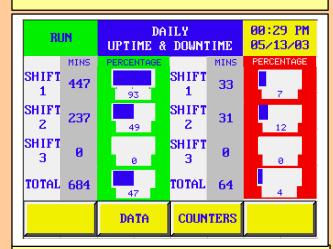| RUN	CURRENT JOB INFORMATION	02:25 PM 01/17/03
PART NUMBER	1624-DG-XP49
ORDER NUMBER	44289
OPERATOR ID	1013
SCRAP	130
<	SYSTEM	COUNTERS	>

The Current Job Information Screen allows the operator to input data tags that define the part or job in more detail. This information can be used later to create other meaningful reports once the data is transferred from the TSS-6 to a reporting program.

RUN	DAILY UPTIME & DOWNTIME	00:29 PM 05/13/03
	MINS	PERCENTAGE		MINS	PERCENTAGE
SHIFT 1	447	93	SHIFT 1	33	7
SHIFT 2	237	49	SHIFT 2	31	12
SHIFT 3	0	0	SHIFT 3	0	0
TOTAL	684	47	TOTAL	64	4
	DATA	COUNTERS	

The Uptime/Downtime Data Screen has numeric displays showing the number of minutes spent in the different modes. Percentage Bar Graphs based on scheduled times work times are shown too. Weekly, Monthly, and Yearly Screens are also available.