



PRODUCTION MONITORING SYSTEM

ENSURE Accurate Timely Information

ELIMINATE Manual Downtime Entry

VIEW Real-Time Shop Floor Data

COLLECT Data Automatically

CREATE Informative Reports

TSS Unit

The new IMPAX TSS unit applies a proprietary set of software to analyze input signals from sensors or machine controllers to determine the status and speed of any machine or process. The system will analyze and then record process-critical information pertaining to machine run condition, uptime and downtime, speed, productivity and efficiencies.

TSS-NET

As part of the TSS System, this Excel-based software program can be used to enter the **setup** parameters into any one of up to ninety (90) TSS Units on the Ethernet network. The status of each machine can then be **viewed** from any PC running the TSS-NET program. TSS-NET also **collects** data from each TSS unit and puts the data into CSV files for later processing and analysis. **Reports** of many types can be generated from the collected data and/or the data can be transferred into other in-house programs for further processing. Working together, the TSS Unit and TSS-NET Software will provide data that will allow you to **reduce costs** and **increase production**.



IMPAX TSS Features:

Current Machine Status

Uptime and Downtime Minutes by Shift and Daily Totals

Log of all Downtime Events

Production Counts by Shift and Daily Total

Instant Efficiencies

Current Shift Efficiencies

Daily Efficiencies

Weekly, Monthly, & Yearly Data

Technical Data

- Two high-speed inputs for process sensors
- Other inputs for machine controller integration
- Optional Interlock relay
- Additional relays for optional use
- Available Ethernet port
- Available Serial 232/485 port
- Powered by 24VDC or 120VAC
- Optional NEMA-4 enclosure

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IMPAX TSS VIEWING SYSTEM

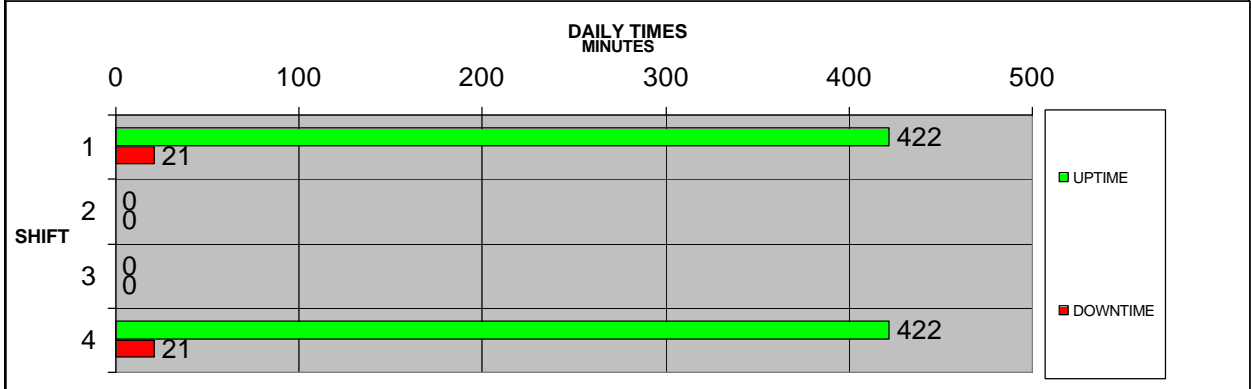
Current Status

Machine Status: **UP**
 Current RPM: **95**
 Current PPM: **94**
 Current Scrap: **0**

Production Counts

| | Daily | Weekly | Monthly | Yearly |
|----------|-------|--------|---------|---------|
| Shift 1 | 41000 | 41000 | 246851 | 1458623 |
| Shift 2: | 0 | 0 | 248632 | 1485236 |
| Shift 3: | 0 | 0 | 232147 | 1423965 |
| Total: | 41000 | 41000 | 727630 | 4367824 |

Daily Uptime and Downtime



Efficiencies

| Instant Efficiencies | Current Shift Efficiencies | Daily Shift Efficiencies | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------------------------|--------------------------|---------|-------|-----|----|-----|-----|-----|----|-----|-----|--|-----|-----|-------|-------|----|----|-----|--|--|--------|---------|-------|-------|-----|-----|-----|-------|-------|-------|------|--------|-------|-------|-----|--------|-------|-------|-----|---|--|---------|---------|---------|-------|-------|-----|----|----|-----|-------|------|----|----|------|--------|-----|----|----|-----|--------|-----|----|----|-----|
| <table border="1" style="width: 100%;"> <tr> <td></td> <td>Actual</td> <td>Ideal</td> <td>Effic</td> </tr> <tr> <td>RPM</td> <td>95</td> <td>100</td> <td>95%</td> </tr> <tr> <td>PPM</td> <td>94</td> <td>100</td> <td>94%</td> </tr> <tr> <td></td> <td>PPM</td> <td>RPM</td> <td>Effic</td> </tr> <tr> <td>Feed:</td> <td>94</td> <td>95</td> <td>99%</td> </tr> </table> | | Actual | Ideal | Effic | RPM | 95 | 100 | 95% | PPM | 94 | 100 | 94% | | PPM | RPM | Effic | Feed: | 94 | 95 | 99% | <table border="1" style="width: 100%;"> <tr> <td></td> <td>Actual</td> <td>Planned</td> <td>Effic</td> </tr> <tr> <td>Time:</td> <td>422</td> <td>480</td> <td>88%</td> </tr> <tr> <td>Feed:</td> <td>41000</td> <td>41000</td> <td>100%</td> </tr> <tr> <td>Cycle:</td> <td>41000</td> <td>48000</td> <td>85%</td> </tr> <tr> <td>Parts:</td> <td>41000</td> <td>48000</td> <td>85%</td> </tr> </table> | | Actual | Planned | Effic | Time: | 422 | 480 | 88% | Feed: | 41000 | 41000 | 100% | Cycle: | 41000 | 48000 | 85% | Parts: | 41000 | 48000 | 85% | <table border="1" style="width: 100%;"> <tr> <td></td> <td>Shift 1</td> <td>Shift 2</td> <td>Shift 3</td> <td>Total</td> </tr> <tr> <td>Time:</td> <td>88%</td> <td>0%</td> <td>0%</td> <td>88%</td> </tr> <tr> <td>Feed:</td> <td>100%</td> <td>0%</td> <td>0%</td> <td>100%</td> </tr> <tr> <td>Cycle:</td> <td>85%</td> <td>0%</td> <td>0%</td> <td>85%</td> </tr> <tr> <td>Parts:</td> <td>85%</td> <td>0%</td> <td>0%</td> <td>85%</td> </tr> </table> | | Shift 1 | Shift 2 | Shift 3 | Total | Time: | 88% | 0% | 0% | 88% | Feed: | 100% | 0% | 0% | 100% | Cycle: | 85% | 0% | 0% | 85% | Parts: | 85% | 0% | 0% | 85% |
| | Actual | Ideal | Effic | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RPM | 95 | 100 | 95% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PPM | 94 | 100 | 94% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | PPM | RPM | Effic | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Feed: | 94 | 95 | 99% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | Planned | Effic | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time: | 422 | 480 | 88% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Feed: | 41000 | 41000 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cycle: | 41000 | 48000 | 85% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Parts: | 41000 | 48000 | 85% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Shift 1 | Shift 2 | Shift 3 | Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time: | 88% | 0% | 0% | 88% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Feed: | 100% | 0% | 0% | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cycle: | 85% | 0% | 0% | 85% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Parts: | 85% | 0% | 0% | 85% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Uptime & Downtime

| | Daily Minutes | | | Weekly Minutes | | | Monthly Minutes | | | Yearly Minutes | | |
|----------|---------------|------|-------|----------------|------|-------|-----------------|------|-------|----------------|------|-------|
| | Up | Down | Resp. | Up | Down | Resp. | Up | Down | Resp. | Up | Down | Resp. |
| Shift 1 | 422 | 21 | 6 | 422 | 21 | 6 | 2552 | 52 | 23 | 15246 | 512 | 201 |
| Shift 2: | 0 | 0 | 0 | 0 | 0 | 0 | 2375 | 48 | 15 | 16248 | 842 | 395 |
| Shift 3: | 0 | 0 | 0 | 0 | 0 | 0 | 2691 | 64 | 31 | 14253 | 351 | 186 |
| Total: | 422 | 21 | 6 | 422 | 21 | 6 | 7618 | 164 | 69 | 45747 | 1705 | 782 |

Downtime Events 1-16

| Event | Start Time | End Time | Resp. Time | Down Time |
|-------|------------|----------|------------|-----------|
| 1 | 1436 | 1439 | 2 | 3 |
| 2 | 1401 | 1404 | 0 | 3 |
| 3 | 1258 | 1305 | 3 | 7 |
| 4 | 1102 | 1103 | 0 | 1 |
| 5 | 1032 | 1035 | 0 | 3 |
| 6 | 947 | 950 | 1 | 3 |
| 7 | 700 | 701 | 0 | 1 |
| 8 | 644 | 647 | 0 | 3 |
| 9 | 521 | 528 | 5 | 7 |
| 10 | 344 | 345 | 0 | 1 |
| 11 | 317 | 321 | 0 | 4 |
| 12 | 210 | 212 | 1 | 2 |
| 13 | 138 | 140 | 0 | 2 |
| 14 | 1 | 4 | 0 | 3 |
| 15 | 2314 | 2318 | 0 | 4 |
| 16 | 2131 | 2133 | 1 | 2 |

Downtime Events 17-32

| Event | Start Time | End Time | Resp. Time | Down Time |
|-------|------------|----------|------------|-----------|
| 17 | 2018 | 2022 | 0 | 4 |
| 18 | 1952 | 1957 | 0 | 5 |
| 19 | 1815 | 1817 | 0 | 2 |
| 20 | 1647 | 1650 | 0 | 3 |
| 21 | 1433 | 1444 | 4 | 11 |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |