

## **WEB BASED MONITORING SYSTEM**

Any Time, Anywhere, Accumulate Data



Production, Energy, Humidity, Temperature, Air & Water Consumption **Monitoring Solutions** 

























Air Flow Module



Weighing Scale



**Energy Meter** 



Multilayer Lamp



Water Flow



PLC



HMI



VFD



25.9~0586 4 (8 %RH

Temperature and Humidity
Moudle



Fingerprint Scanner



**RFID Reader** 



Motion Sensor



Photo Electric Sensor



Scrolling Display



Proximity Sensor



Barcode Reader



TEKHSOL is a well established organization incorporated in the year of 2012. Web Based Monitoring System for Weaving, Spinning, Knitting, TFO, Fabric Inspection, Engineering and other manufacturing industries. TEKHSOL adapt latest technology and design its products indigenously, continuous innovation, value addition, up gradation brings sophistication.

TEKHSOL is a total solution provider in the fields of Web Based Monitoring System. At the R & D level TEKHSOL R & D engineers provides expertise in automation and electronic disciplines offering innovative solution to specialized customer application needs. TEKHSOL believes teamwork, encourage collaborative culture and closely working together. TEKHSOL provides career growth and continuous learning opportunities to work across functions and places. TEKHSOL maintains long term healthy relationship with its customers, technology partners and suppliers.

#### **MISSION**

At Tekhsol we work proudly ensuring the principles of client focus and satisfaction through technical excellence, leadership, organizational growth and a motivated human resource to build a long-term association.

#### VISION

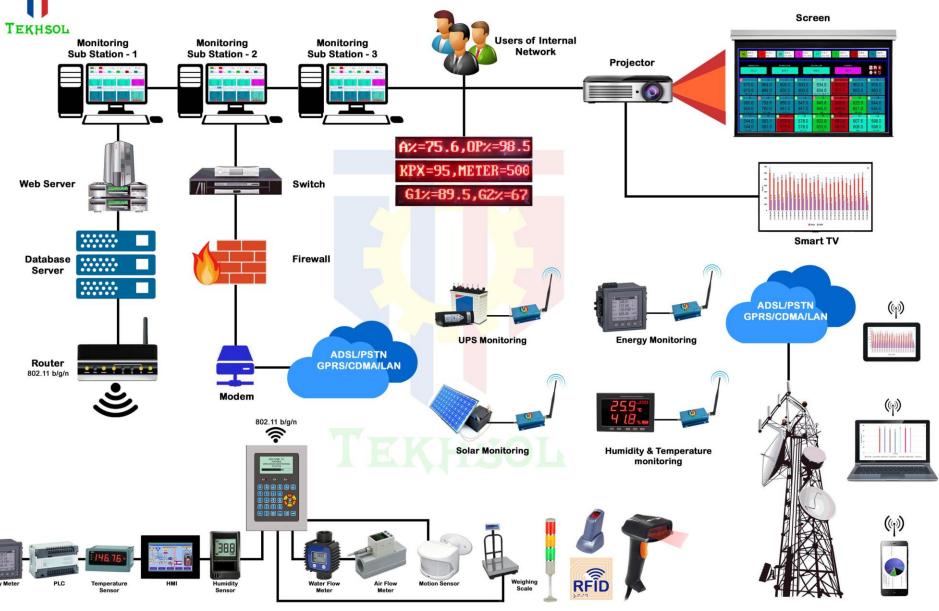
We strongly believe that people make organizations. This belief makes us to constantly strive for continuous improvements in building our organization as the most reliable and valued IT training and solutions provider. We work towards building our organization to be more diverse to meet global market requirements by achieving high quality standards and be successful in our undertaking.

#### What We Do

We are primarily focused in understanding individual's requirements in terms of reliability, limitations, dynamic response and mainly security thereby providing you the most user friendly and economical solution. Our company has the best team of expertise who handle work maintaining high standards. We strive to give absolutely no chance to our clients for complaints. Perfectionism is what we believe in. As developers we also understand that your need for advancement in technology is very important. Contact us now and we will be obliged to work for you! Lekha is a Technology Solutions company with expertise in Communications and Embedded systems delivering products and services that enable clients to build, manufacture and deploy technologies profitably. Lekha is your 'all-under-single-roof' technology partner offering expertise in the areas of Hardware Board Design, FPGA, Embedded Software, Industrial Design and Design for compliance. Lekha also suppors clients with Customization, System integration and manufacturing services.

# TEKHSOL

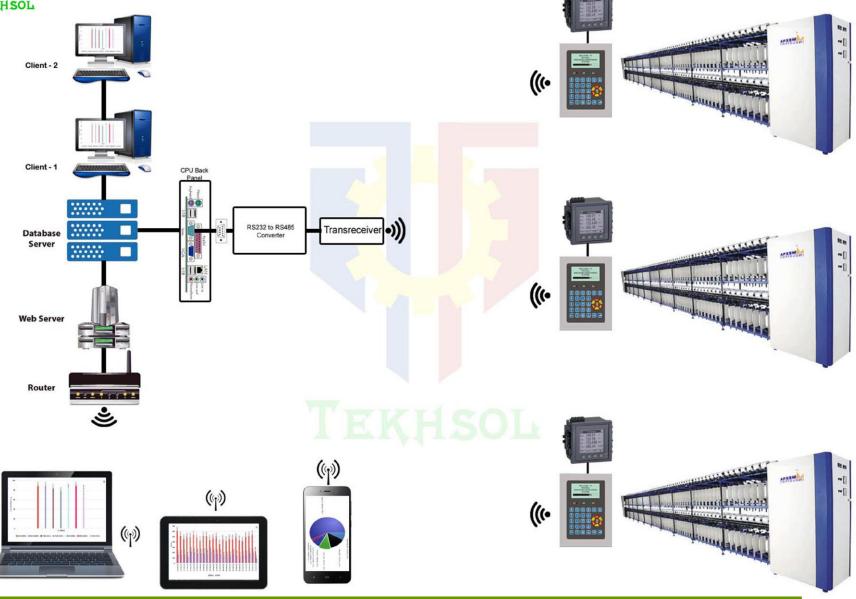
## **Block Diagram for Web Based Monitoring System**



# **Block Diagram for Wired Communication** TEKHSOL -0 \*\*\*\*\*\* RS232 to RS485 Database Server ----**Web Server** Router (p) -0 (p) (p)



## **Block Diagram for Wireless Communication**



# **Block Diagram for Wireless Communication** TEKHSOL Client - 2 Client - 1 **Database** Server 802.11 b/g/n **Web Server** Router క్ర (m) 802.11 b/g/n (g) (g)



## **Hardware Features**

	Processor
Processor	High-performance 8-bit Microcontroller
110003501	32-bit Microcontroller
Program Memory	64 KB
Trogram Wemory	512 KB
	Memory
Internal Memory	2K bytes Of EEPROM
External Memory	4MB expendable upto 128MB
	Operating System
C F:	Embedded C
Operating Firmware	RTOS
	Display
	20x4 Alpha Numerical LCD
Character LCD	16x4 Alpha Numerical LCD
	16x2 Alpha Numerical LCD
Graphical LCD	FSTN Monochrome LCD 128 X 64 with White LED Backlight.
	TFT 3.5" QVGA 320 x 240 Resolutions with 16Bpp Transmissive, Landscape Mode, TF
TFT	and adjustable LED Backlight. 4 Wire Resistive Touch Screen Capability
Indicator	Multi Layer Lamp, Three Mono color signal status LEDs
	Data Capture
	6 x 5 Matrix Keypad
Keypad Details	6x6 or 4x4 Matrix Keypad
	USB – HID Class Keyboard
Signals	6 signals
Analog to Digital Conversion	Multi branded ADC input based Air flow sensors, Water flow Sensors and Load cells
COPPORED CONTRACTOR	Multi branded RS 485 based PLC, HMI, Energy Meter, Humidity Meter and Temperatur
RS 485	Meter
RS232	Multi branded RS 232 based Weighing Machines and Barcode Readers
TTL	Multi branded TTL based Energy Meter
Sensor	
Proximity sensor	3-Wire DC NPN/PNP Inductive Proximity Sensor
Motion Sensor	The PIR based Motion Detection Sensor
Photo Electric Sensor	Infrared based Object detection
Encoder	Incremental Encoder, Absolute Encoder and CNC Incremental Encoder
10 NOT 10 17 1/17 1/17 1/17 1/17 1/17 1/17 1/1	Modules Interfacing
Barcode Reader	USB – HID Class Barcode Readers (Barcodes Code 39, Code 39 Full ASCII, Code 32, Cod 128, UCC/EAN-128, Coda bar, Code11, Code 93, Standard 2 of 5, Industrial 2 of 5 Interleaved 2 of 5, UPC/EAN/JAN with Addendum, Telepen, MSI/Plessey, GS1DataBa (RSS) Linear, Linear-stacked)
RFID	RFID reader /writer 13.56Mhz - Compliance to ISO15693, ISO 14443A/B, ISO18000-2
Finger Print	Active Capacitive Fingerprint sensing with high resolution (508 dpi) with Algorithm for Matching 1:1 and 1:N. Active area 256 x 360 pixel (12.8 x 18.0 mm). Air ESD resistance u to (+ or -) 15kV. Thick coat.
GPS	High performance GPS receiver module featuring with weak signal acquisition technology
	Data Communication
	Multi Branded RS485 Communication
Wired	Multi Branded RS232 Communication
	Multi Branded TTL Communication
Ethernet	standard IEEE 802.3 @ 10/100 MB / Sec
Wireless	
XBee	IEEE 802.15.4, Frequency: 2.4 Ghz, with Internal / External Antenna.
Wi-Fi	802.11 b/g - Speed 11MB/54 MB per second, Internal / External Antenna, Frequency: 2.4 t 2.5Ghz, Output Power: 100mW US and International
GSM/GPRS	QUAD Band GSM for wide Coverage and global access with GPRS Multi slot Class 10, Class B with TCP/IP communication Protocol and With Internal/External Antenna
Bluetooth	IEEE Standard 802.15.1

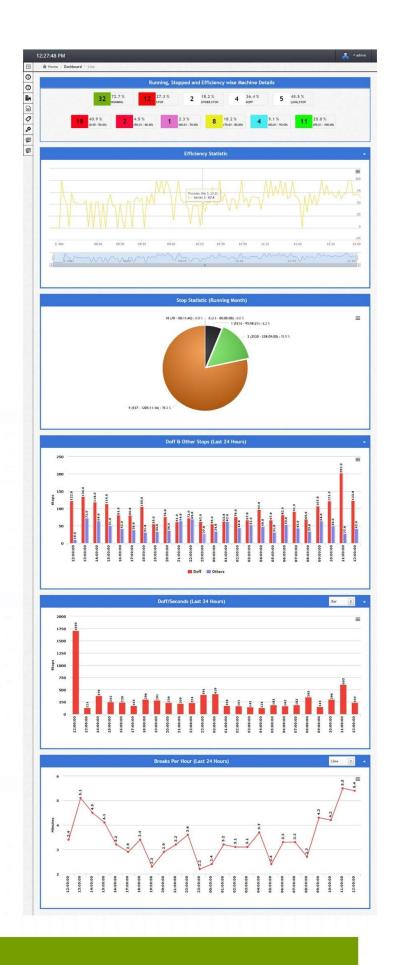
## **Software Features**



- \* User friendly User can monitor the industry anywhere from the world through Internet. Integrated information of all Machines at one place.
- \* Web Based Monitoring System software is also allows direct input for production and other working details. Which are not censored by Web Based Monitoring System.
- \* The management can realize the completeness in computerizing the production activity.
- \* Dash board for cumulative display of collected data in a single page. Running and Stoppage machines with their percentage.
- \* Monitoring Screen to show current month, Previous Shift, Previous Day and current shift status with easily understandable user friendly GUI.
- \* Efficiency wise machines counting with percentage. Instantaneous and Running shift efficiency and production data in the dash board view.
- \* Various Reports on Production, Stoppage & Efficiency based on selected criteria.
- \* Performance of any Machine, Design, Employee or Group can be analyzed at any point of time for any chosen period of working.
- \* Real time and past data comparison on Machine, Design, Operator, Technician, Supervisor, Operator Group, Technician Group, Supervisor Group, Buyer, Order etc.,.
- ★ Periodical Break analysis and Efficiency Graphs to improve Production and Quality.
- \* Production Planning and Order status Reports.
- \* Projected Production information to improve current shift Production & Efficiency.
- \* Total working performance of the Mills for a day would be immediately available after the end of the day to the Top Executives.
- \* Month end Production report and stoppages analysis reports are immediately available after the month end without any manual preparation.
- \* Graphical representation of data with respect to productivity and stoppage are also available for quick and easy understanding of the Mills performance.
- \* More than 200 different kinds of reports are available. Each of these reports are carefully designed and are very meaningful to control the production routines in all respects.







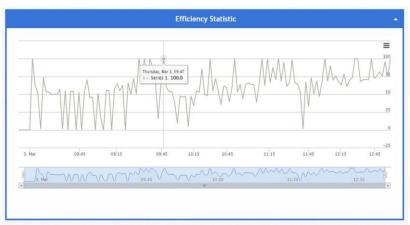


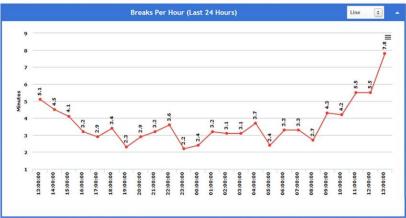
## **Monitoring Page**

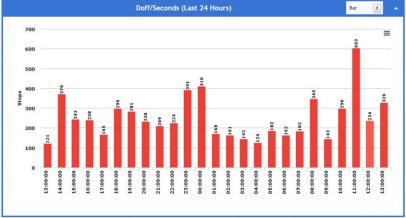


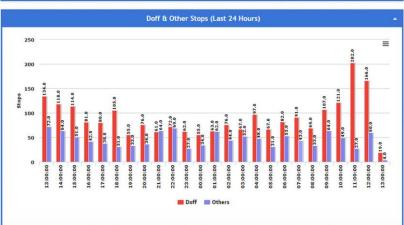


## **Graphical Representations**



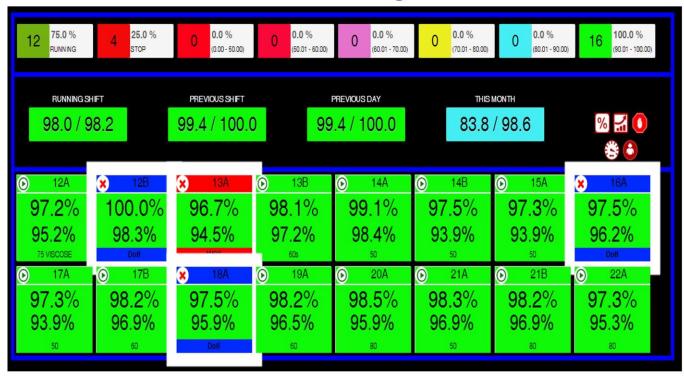








## **Efficiency**



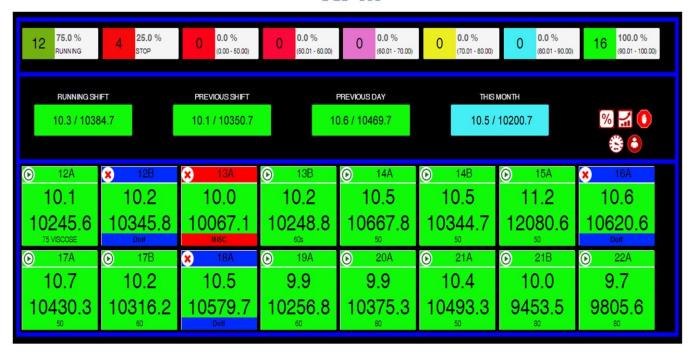
#### **Production**



## **Single Sheet view**



#### **RPM**

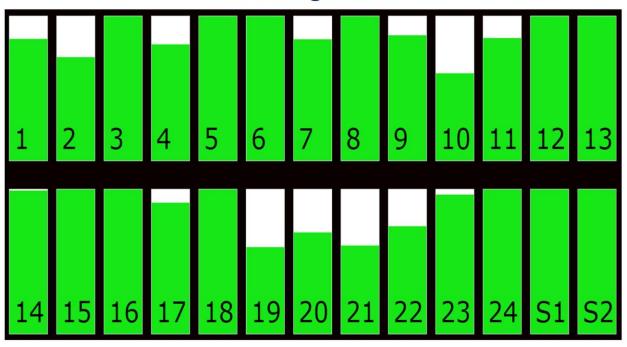


#### **TPM**





## **Doff Filling Status**



#### **LED TV**

	CO	OPS	PF	5 RIMARY	SECON	5 SECONDARY						
	Running	Shift			Previous 8	Shift						
Description	Cops Winder	Primary	Secondary	Description	Cops Winder	Primary	Secondary					
Act.Eff	0.0	80.00	68.1	Act.Eff	0.0	80.00	78.0					
Kgs	0.00	24633.0	39029.6	Kgs	0.00	24633.0	39029.6					
Power.Units	7.60	42.30	139.00	Power.Units	13.80	254.10	349.90					
Power.Units/Hr	0.00	0.30	0.70	Power.Units/Hr	0.00	1.20	0.70					
Doff	0	10	12	Doff	0	10	3					
Doff Time	00:00:00	16:52:58	19:27:43	Doff Time	00:00:00	20:25:46	05:10:16					
Meter	0.0	306.5	263.7	Meter	0.0	351.9	686.0					
Mtr/Min	0.0	25.2	28.2	Mtr/Min	0.0	23.9	28.6					
Mechanical	0	23	0	Mechanical	0	471	0					
Mechanical Time	00:00:00	00:08:20	00:00:00	Mechanical Time	00:00:00	08:02:03	00:00:00					
Ele/Ins	2115	1	0	Ele/Ins	2115	1	0					
Ele/Ins Time	83:33:48	03:35:04	00:00:00	Ele/Ins Time	83:33:48	05:10:16	00:00:00					
Runtime	00:00:00	16:52:58	19:27:43	Runtime	00:00:00	20:25:46	49:56:05					
Stop Time	10:45:12	-2897:-23:-36	09:06:15	Stop Time	580:12:26	27:40:41	14:06:00					



							N	Machinewise De	tail Re	port On	2015-09-	15 SI	nift:3							6
Machine	Count	U%	P%	OA%	Mtr/Min	S/Speed	Hanks	Kgs (Without Waste)	Waste	Waste %	Actual Kgs	TPI	Gps	40*Gps	Ukg	Doff	Time	Minute Doff	1.Spindles	Running Time
11	60 CPT	88.2	0.0	0.0	14.0	0	7.7	65.9	3.60	5.50	62.3	0.0	62.2	84.7	0.0	4	00:52:16	13:04	0	07:03:17
12	60 CPT	96.2	91.4	87.9	14.4	18353	8.6	73.9	4.20	5.70	69.7	32.4	64.1	94.9	0.0	1	00:18:26	18:26	0	07:41:32
13	60 CPT	92.0	87.4	80.4	13.7	22768	7.9	67.4	3.50	5.20	63.9	42.1	61.1	86.6	0.0	3	00:38:24	12:48	0	07:21:22
14	60 CPT	95.8	91.1	87.3	13.9	17506	8.3	71.3	3.00	4.20	68.3	31.9	62.1	91.7	0.0	1	00:06:26	06:26	0	07:39:51
15	60 CPT	96.6	91.8	88.7	14.2	18118	8.6	73.3	3.20	4,40	70.1	32.4	63.1	94.1	0.0	1	00:06:06	06:06	0	07:43:38
16	60 CPT	93.5	88.9	83.1	14.0	17858	8.2	70.0	3.20	4.60	66.8	32.4	62.5	90.0	0.0	0	00:00:00	00:00	0	07:29:38
17	60 CPT	92.5	87.9	81.3	14.2	18105	8.2	70.2	4.40	6.30	65.8	32.4	63.2	90.2	0.0	5	00:35:52	07:10	0	07:24:01
18	60 CPT	94.1	89.4	84.2	13.7	17431	8.0	68.6	4.90	7.10	63.7	32.4	60.8	88.2	0.0	3	00:16:00	05:20	0	07:31:21
19	80s CW	98.1	93.3	91.5	10.6	16914	6.5	42.1	2.00	4.80	40.1	40.4	35.8	71.1	0.0	0	00:00:00	00:00	0	07:51:00
20	80s CW	98.9	93.9	92.9	10.7	17063	6.6	42.8	2.60	6.10	40.2	40.5	36.0	72.2	0.0	1	00:04:10	04:10	0	07:54:27
21	80s CW	95.9	91.1	87.4	10.4	16576	6.2	40.3	2.50	6.20	37.8	40.5	35.0	68.0	0.0	2	00:18:16	09:08	0	07:40:04
22	80s CW	60.8	57.8	35.1	10.2	16210	3.9	25.0	2.40	9.60	22.6	40.4	34.2	42.2	0.0	0	00:00:00	00:00	0	04:51:43
23	50	96.4	91.6	88.3	10.6	16548	6.4	64.7	3.20	4.90	61.5	39.6	55.9	76.3	0.0	0	00:00:00	00:00	0	07:42:34
24	80s-CW	96.5	91.6	88.4	10.7	16965	6.4	41.5	4.10	9.90	37.4	40.4	35.9	70.1	5.3	1	00:17:02	17:02	0	07:42:53
14		92.5	87.9	81.4	12.5	16458	101.5	817.0	46.80	4.05	770.2	34.1	52.3	80.0	0.4	22	03:32:58	07:07	0	103:37:21

#	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:0
1 - RF	0.7	1.2	0.0	0.9	1.2	1.2	0.6	0.3	1.3	1.2	1.1	1.1	1.2	1.2	0.9	1.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.
2 · RF	0.6	0.2	0.0	0.6	1.1	1.2	0.9	0.8	1.4	1.2	0.9	1.2	1.2	0.9	1.1	1.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.
3 - RF	1.0	0.9	1.2	1.2	0.9	1.1	0.9	1.0	1.1	1.1	1.2	1.1	1.1	1.2	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
4 · RF	1.1	0.5	0.0	0.7	1.2	1.1	0.1	0.8	1.4	1.0	1.1	1.2	0.6	1.0	1.2	0.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.
5 - RF	0.8	1.0	1.2	0.9	0.4	1.1	1.2	0.7	1.3	1.2	0.9	1.1	1.2	0.8	1.0	1.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 - RF	0.0	0.0	0.9	1.2	1.2	0.9	1.2	1.0	1.1	1.2	1.2	0.9	1.2	1.2	1.0	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 · RF	0.3	1.1	1.2	1.0	1.1	1.1	1.2	0.3	1.2	1.1	1.2	0.8	1.1	1.1	1.2	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 · RF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 · RF	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 - RF	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 - RF	1.2	1.3	0.8	1.2	1.3	1.3	1.1	1.0	1.5	1.3	1.3	1.0	1.3	1.3	1.3	1.0	1.2	1.3	1.2	1.0	1.2	1.2	1.3	1.3
12 - RF	1.2	1.3	1.3	1.3	1.0	1.2	1.3	1.1	1.4	1.1	1.3	1.3	1.3	0.9	1.2	1.3	1.2	1.1	1.2	1.3	1.3	1.2	1.0	1.2
13 · RF	1.0	0.6	1.2	1.3	1.3	1.2	0.6	1.0	1.5	1.3	1.2	1.1	1.3	1.3	1.3	1.0	1.1	1.3	1.3	1.3	1.0	1.2	1.4	1.2
14 - RF	1.3	0.9	1.0	1.2	1.3	1.1	0.6	0.8	1.2	0.0	1.2	1.3	0.9	0.8	1.2	1.3	1.2	0.9	1.2	1.3	1.3	1.0	1.1	1.3
15 · RF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



#### Machinewise RollDoff Report On 2016-02-05 Shift:3

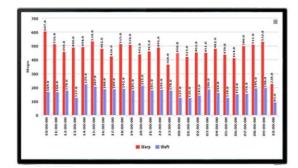
Machine	Article	Hanks	Kgs	Mtr/Min	TPI	TPM	RPM	Doff Time
11 - RF	60 CPT - CPT	5.5	46.7	15.8	27.3	1076.3	17058.9	06-02-2016 03:47
13 - RF	60 CPT - CPT	5.4	46.5	15.8	27.3	1076.3	17007.2	06-02-2016 04:03
14 - RF	60 CPT - CPT	4.9	42.0	15.5	27.3	1076.3	16630.9	06-02-2016 01:25
14 - RF	60 CPT - CPT	5.1	43.7	15.5	27.3	1076.3	16681.5	06-02-2016 05:46
17 - RF	60 CPT - CPT	5.5	47.3	13.4	33.2	1306.9	17552.4	06-02-2016 03:37
20 - RF	80s CW - CW	5.9	38.4	10.8	41.4	1631.6	17618.2	06-02-2016 00:56
21 - RF	80s CW - CW	6.6	42.9	10.9	41.4	1631.6	17839.4	06-02-2016 02:20
22 - RF	80s CW - CW	11.4	74.0	9.4	41.4	1631.5	15377.9	06-02-2016 07:35
23 - RF	80s-CW - CW	7.0	45.0	10.9	41.4	1631.5	17766.6	06-02-2016 04:57
S4 - Simplex	S1 - Roving Count	3.3	50.4	109.1	0.2	8.6	938.7	06-02-2016 05:01
RSB1 - LMW RSB	S1 - Roving Count	11.4	43.8	695.8	0.0	0.0	0.0	06-02-2016 04:54
RSB1 - LMW RSB	S1 - Roving Count	1.7	6.3	661.6	0.0	0.0	0.0	06-02-2016 05:25
RSB1 - LMW RSB	S1 - Roving Count	8.5	32.6	680.4	0.0	0.0	0.0	06-02-2016 06:17
RSB1 - LMW RSB	S1 - Roving Count	10.9	41.6	698.4	0.0	0.0	0.0	06-02-2016 03:03
RSB1 - LMW RSB	S1 - Roving Count	19.6	75.1	698.1	0.0	0.0	0.0	06-02-2016 03:51

,,	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:0
	07.00	10.00	11.00	12.00	15.00	14.00	13.00	10.00	17.00	10.00	19.00	20.00	21.00	22.00	23.00	00.00	01.00	02.00	03.00	04.00	03.00	00.00	07.00	00.
40s KW - KW	1	0	2	1	0	1	0	2	0	0	2	1	0	3	1	0	3	1	0	3	1	0	4	
60s-KW - KW	3	2	2	2	2	3	3	2	1	2	3	1	3	2	2	2	2	2	3	2	1	2	2	
S1 - Simplex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
60s-80s - 60s-80s	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	0	0	0	0	0	0	0	0	
RSB-1 - RSB	15	20	35	13	1	41	27	18	16	21	4	11	9	18	7	9	8	28	17	19	20	9	18	
RSB-2 - RSB	4	4	19	8	3	13	18	17	13	9	6	4	11	27	17	5	4	12	8	13	7	6	8	
RSB-3 - RSB	7	15	4	13	2	11	14	10	11	5	5	1	2	4	1	4	2	4	7	8	8	2	7	
RSB-4 - RSB	2	0	0	0	0	0	0	0	0	0	8	13	10	7	39	5	14	13	7	4	10	11	13	
52 - Simplex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S3 - Simplex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S4 - Simplex	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	
S5 - Simplex	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S6 - Simplex	1	0	0	0	0	1	0	0	0	1	0	1	0	2	0	1	0	1	0	1	0	1	0	
COMB - COMBER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
rding-1 - Carding	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	33	41	66	37	10	72	64	51	42	38	31	33	36	64	69	27	34	62	44	52	48	31	53	

## **Add On Features**











TEKHSOL as a company focused on providing the highly accurate and reliable industrial monitoring and control systems for all industries through innovated sensors and technologies. We apply the best possible technologies at very affordable cost and so the every customer can implement the monitoring and control systems.

We automating the Managements information Systems with Live and Practical data with very high accuracy towards helping the management peoples to take precious decision based and data science and verification of the decision by themselves.

Monitoring system helps the decision makers to choose the right operating point in production setting versus energy cost to optimize the profit and select profit efficient process setting, spare parts selection and spare parts life cycle determination.

We focused on factory automation through the automatic data collection and automatic data analyzing and implementing automatic control towards achieving the maximum cost control and improve profit efficiency to maximum possible level.

Human interfaces like touch screen. Reporting system with wider information sharing base like Clients support, Support on tablets.

Implemented with various alarms through SMS, Auto Email, Deviation Reports, Easy programmable Act on Alarm system helps the customer to avoid various losses and prevent accidents.

#### Head Office

226, No. 4, Shanthi Complex, G.N. Mills, MTP Road, Coimbatore - 641 029 Phone: 0422 - 2645844 | Mobile: +91 73390 00601/2/3, +91 95431 97197

Web: www.tekhsol.com | Email: info@tekhsol.com