Stesalit
SMART Technologies

Intelligent Dryer Temperature Controller (SDTC)

For achieving QualiTEA by optimum use of coal and electrical energy

DTC

Basics of Tea Drying at Dryer in Black Tea / CTC Tea Manufacturing:

The oxidized leaf is passed into a hot air dryer for about twenty minutes where the moisture content is reduced to just 3% - 4 % and the familiar black color of CTC tea develops.

There are main two objectives to develop black Color of Tea

1. *To capture / halt the reaction time of enzyme particle and oxidation time.*
2. *To remove the moisture from the leaf particles to produce a good quality of Black tea.*

The following factors are responsible for drying the tea properly and produce a QualiTea..

1. *Maintains the constant Temperature at Inlet and Exhaust Air.*
2. *Maintain the volume of air.*
3. *Maintain the Feed Rate / quantity of Leaf Fed.*
4. *Period of Time (Residence Time of Dryer / Throughput Time).*

SDTC Developed by Stesalit:

Considering the above all facts and based on valuable feedback & data from leaders in tea manufacturing industry, after successful trial run STESALIT has introduced a new product SDTC (Intelligent Dryer Controller) to monitor and maintain the desirable parameters like feed rate at dryer, dual drying inlet temperatures (T1 & T2) and the residence time / throughput time of dryer. Our system will maintain the above mentioned parameters. It will ensure the following features related to tea made quality elevation.

1. Inlet Temperature T1 will control by our very successful product Coal Air Ratio Controller (CARC-04). CARC-04 will control the Chain grate motor speed, FD fan speed and ID fan speed of heater. By varying the following motor speed the system controls the T1 temperature within ±1 ˚C.

2. Our SDTC controls the speed of Feed conveyor of Dryer and maintain the wet end temperature (popularly known as T3). This will ensure the even feeding based on a user settable Temperature at T3 and deactivation of enzyme (bio-chemical reactions) at the wet end of the dryer.

3. Our SDTC controls the speed of cold air fan speed of dryer in turns to maintain the second Inlet Temperature (popularly known as T2) which contributed the blackness of tea made.

4. Our SDTC controls the magnitude of vibro-mechanism and in turn maintains the throughput time and Final exhaust temperature (popularly known as T5). With controls the vibro mechanism, ensure the proper interaction in between carbohydrates with Amino acids which will turn leads to the formation of flavor components.

Salient Features of Intelligent Dryer Controller

- *Maintained constant temperature at Dryer Inlet (T1) results in consistent and enhanced quality of Tea made.*
- *Maintain the constant temperature at T2 for ensuring the proper cooking of fed material at Dryer.*
- *Maintain the Fed Conveyor speed and T3 Temperature for ensuring the proper feeding in dryer .*
- *Maintain the Vibro mechanism speed of dryer and T5 temperature for ensuring proper blackness of tea made.*
- *Minimize production cost by optimum use of coal and electrical energy.*
- *Dual Line Digital temperature Indicator cum Controllerconsole.*
- *High accurate RTDs are used for measuring the temperatures at dryer. Resistance Temperature Detectors (RTDs) are ideal for industries where accurate temperature measurement is required. The sensors measures over a range from -199.9˚C to 650˚C .*