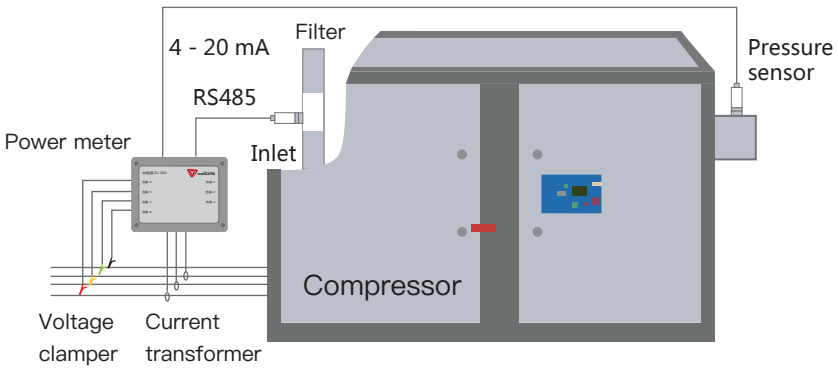
## Working principle

CAE350S compressor Analyzing System is Comate Intelligent Sensor's latest solution specially designed for analyzing the performance of compressor. The system integrated flow meter (humidity sensor built inside), pressure sensor, power meter through pad APP and Bluetooth communication technology. Users will be able to read not only the standard flow rate, FAD flow rate, pressure, power consumption and efficiency, but also load/off loading times, unit power (power consumption per unit of compressed air), and power ratio (power efficiency under a certain productivity of compressed air).

TGF350S flow meter, receiver data from power meter and transfer all data to cell phone through bluetooth




CAE350S do not have traditional display and setting system. To read or set the system, customer only need to use an PAD installed COMATE APP. All the hardware ingredients in the system will transfer date to TGF350 flow meter and the flow meter will commu-nicate with cell phone / pad. Anyone can easily read the date or set the system. The APP can also generate an detailed report with curve diagram to help customer to understand the condition of the compressor better or even compare the tested compressor with another compressor. Thanks for the compact design of the system, users are able to bring the whole system anywhere with only a simple wheel box provided by Comate. Engineers or sales person will be able to bring only one wheel box to check the performance of most of the compressor accurately and efficiently

## Specification

| | | |
|---|---|---|
| System | Power supply | AC220V +/-5%, or AC/DC 85~265V, or AC380V±5% |
| | Ambient temperature | -40 ~ 80 dgr C |
| APP | For Android PAD | For PAD with resolution of 1920*1200 , Android 4.4 or higher version |
| Power meter | Wiring | 3 phase 3-wire or 3 phase 4-wires |
| | Voltage measurement range | 2nd grade voltage test AC 0 ~ 400V |
| | Voltage accuracy | 0.20% |
| | Current measurement range | 2nd grade 0~5A (transformer ratio 500:5) |
| | current accuracy | 0.20% |
| | Power efficiency range | up to250KW |
| | Power efficiency accuracy | 0.50% |
| DN100 TGF350S flow meter | Inlet pipe size | DN40~DN100 (1.5" ~ 4") |
| | Measurement range and accuracy | 2% accuracy in 0.5~35 Nm3/min (17.7~1236 SCFM) |
| DN200 TGF350S flow meter | Inlet pipe size | DN100~DN200 (4"~ 8") |
| | Measurement range and accuracy | 2% accuracy in 2~90 Nm3/min (70.6~3178.3 SCFM) |
| Humidity | Accuracy | +/- 4.5 RH |
| Temperature | Accuracy | 0.5 dgrC |

## System Components

### 1. TGF350S inlet air flow meter

TGF350S inlet air flow meter is designed base on thermal diffusion theory, can measure the mass flow rate, standard flow rate and FAD flow rate in a 70:1 range with 2% accuracy.

CAE350S system contains 2 TGF350S flow meters, one in 4 (DN100) and one in 8" (DN200). With our rubber hose (pipe size adapter), this two meters can fit in pipe size from 1.5" to 8" (DN40~DN200). TGF350S gather all the data from other components in the system through RS485 and transfer them to pad through blue tooth.

TGF350 flow meter should be installed on the inlet of the compressor, after the filters. Thus it will not be effected by the water contents, which is normally contained in the compressed air in the pressurized pipeline and will greatly effects the measurement result of traditional thermal mass flow meter. Also it will be much easier to install and remove than traditional flow meter which has to be installed on pressurized pipes.

Beside flow rate reading, TGF350S also can provide customer with RH reading and temperature for reference.

### 2. Power measurement components

One KW110 power meter, 3 current transformers and 4 voltage clampers are the power measurement components in CAE350S system. KW110 gather current and voltage date from the other two components through RS485 and transfer all data to TGF350 flow meter also through RS485. Also, KW110 is the only component that is needed to be pluged to a power source and it will provide power for the whole system.

The power measurement components can be used in both 3 phase 3–wire and 3 phase 4–wire power system, with 1% accuracy in a 5~500A range. All components can be read and set through cell phone / pad APP.

### 3. Pressure sensor

CAE350S system also include a pressure sensor which can be installed on the pressure tap of the compressor. The pressure sensor will output analog signal for pressure value to flow meter, so the system can compare the efficiency of the compressor under different pressure.

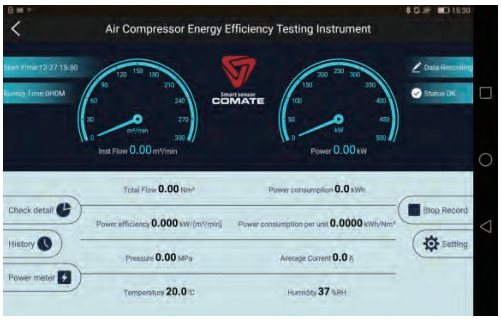
## 4. COMATE APP

Instead of traditional displaying and setting system, CAE350S system can be read and set on a PAD through blue tooth technology, by installing COMATE APP.

The setting dates are saved in flow meter separately, but all measurement dates are saved in TGF350S flow meter, which is the only component in CAE350S system that can built connection with the pad. Even when the pad is out of the range of the blue tooth of TGF350S, TGF350S itself can save 24 hours measure–ment date in built–in FRAM. So once a cell phone/ pad connect with the system again, it can read the data of latest 24 hours.

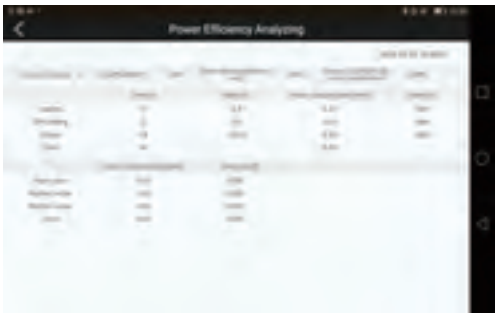
The APP can control the start and the end of a test, when the test stop, the APP will ask if need to save the data. Once the data saved on APP, customer can check it anytime later, and generate a very detailed report with curve diagram. Customer can send the report to mailbox once connected the PAD to internet.

Through the help of Comate Flow Meter APP, customer can operate the system very easily with almost 0 training after registration and understanding some basic terms of the system.



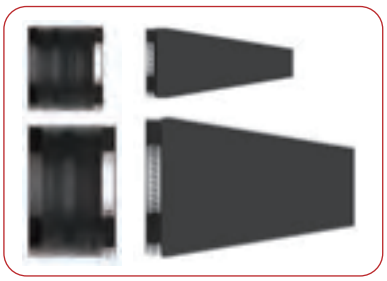

Reading interface of the APP

Setting interface of the APP



power efficiency analyzing page of the APP

## 5. OTHER COMPONENTS



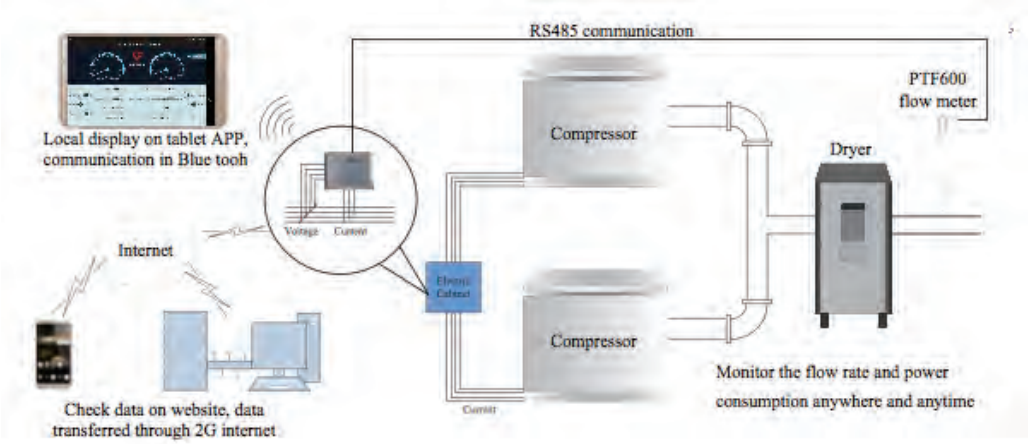
Rubber hose and pipe size adapter with screw clampers. These are for the installation of the flow meter on difference inlet pipe size

Tools set including one knife, one tape meter, one ruler, one pair of gloves and one screw–driver, for cutting rubber hose and installation of flow meter

Plastic box with wheel, holding all components inside with protection. Tough and durable

## General

CAE820 compressed Air Network Auditing System is specially designed for analyzing the performance of single compressor or compressor group. The system integrated flow meter (temperature and pressure measurement inside), power meter through tablet APP and Bluetooth communication technology. Users will be able to read not only the standard flow rate, FAD flow rate, pressure, power consumption and efficiency, but also load/off loading times, unit power (power consumption per unit of compressed air), and power ratio (power efficiency under a certain productivity of compressed air).




CAE820 do not rely on traditional display and setting system. To read or set the system, customer only need to use an tablet installed COMATE APP. All the hardware ingredients in the system will transfer date to flow meter and the flow meter will communicate with cell phone / pad. Anyone can easily read the date or set the system. The APP can also generate an detailed report with curve diagram to help customer to understand the condition of the compressor better or even compare the tested compressor with another compressor. The power meter can also upload the measurement data to COMATE compressor monitoring system website. So if the audit take long time, customer do not have to stay at site, but can check the data anywhere by logging the website.

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| | current accuracy | 0.20% |
| | Power efficiency range | up to250KW |
| | Power efficiency accuracy | 0.50% |
| PTF600 flow meter | Pipe size | DN25 ~ DN400 |
| | Measurement range and accuracy | 1% RD + 0.5%FS in 1:32 flow range |