

Johannesburg Branch

MIMIC COMPONENTS

Cape Town Branch

Mimic Cape

# **FUNCTION LIST**

# Device Model Type ●YES ©OPTION BLANK:NO

|                           |                                       |                                                                     | ●YES  | @OPTION  | BLANK:NO |
|---------------------------|---------------------------------------|---------------------------------------------------------------------|-------|----------|----------|
|                           | FUNCTION                              | PARAMETER                                                           | ME531 | ME631-SD | W631     |
|                           | 333mV current sensor                  | SCT-24/SCT-36/SCT-50                                                | •     | •        | •        |
| Type of current sensor    | 5A current sensor                     |                                                                     |       |          |          |
|                           | Rogowski coil                         | 3 Rated Current (not switchable) 1kA/3kA/6kA                        |       |          | •        |
|                           |                                       | 5 Rated Current(switchable ) 100A/600A/1kA/3kA/6kA                  | •     |          |          |
|                           |                                       | Rated current could be customized                                   |       | •        |          |
| Installation style        | Din Rail                              |                                                                     | •     | •        | •        |
| Power supply              | 85~265VAC/100~370VDC                  |                                                                     | •     | •        | •        |
| т оног варрту             | 24V                                   |                                                                     | 0     |          |          |
| Current Unbalance         | Each phase, The most unbalanced phase | Ubl(la,lb,lc,lwst)                                                  |       |          |          |
| Voltage Unbalance         | Each phase, The most unbalanced phase | Ubl(Ua,Ub,Uc,Uwst)                                                  |       |          |          |
| Line Voltage              |                                       | Uab Ubc Uac                                                         |       | •        |          |
| Voltage Angle             |                                       | Uab Ubc Uac                                                         |       |          |          |
| Current Angle             |                                       | lab lbc lac                                                         |       |          |          |
| Displacement Power Factor | Each phase,Total                      | DPFa,DPFb,DPFc,TOT                                                  |       |          |          |
|                           | Current                               | la lb lc,avg                                                        |       |          |          |
| Instantaneous maximum RMS | Voltage                               | Ua Ub Uc,avg                                                        |       |          |          |
|                           | Power                                 | Pa,Pb,Pc,Qa,Qb,Qc,Sa,Sb,Sc,Psum,Qsum,Ssum                           |       |          |          |
|                           | Current                               | la lb lc,avg                                                        |       |          |          |
| Instantaneous minimum RMS | Voltage                               | Ua Ub Uc,avg                                                        |       |          |          |
|                           | Power                                 | Pa,Pb,Pc,Qa,Qb,Qc,Sa,Sb,Sc,Psum,Qsum,Ssum                           |       |          |          |
| Harmonic                  | Current harmonic value                | ITHDa,ITHDb,ITHDc,ITHD avg                                          | •     | •        | •        |
|                           | Current harmonic percentage           | ITHDa(%), ITHDb(%),ITHDc(%)                                         | •     | •        | •        |
|                           | Voltage harmonic value                | UTHDa,UTHDb,UTHDc,UTHD avg                                          | •     | •        | •        |
|                           | Voltage harmonic percentage           | UTHDa(%), UTHDb(%),UTHDc(%)                                         | •     | •        | •        |
| Harmonic number display   | Three                                 |                                                                     |       | •        |          |
|                           | Active Energy                         | EPa,EPb,EPc,EPsum                                                   | •     | •        | •        |
| Energy Measurement        | Reactive Energy                       | EQa,EQb,EQc,EQsum                                                   | •     | •        | •        |
|                           | Apparent Energy                       | ESa,ESb,ESc,ESsum                                                   | •     | •        | •        |
| Pulse output              |                                       |                                                                     |       |          |          |
| Time-sharing Measurement  | 3 Tariff                              | Controlled by modbus                                                |       | •        |          |
|                           | Demand (some time ago)                |                                                                     |       | •        |          |
| Demand                    | Maximum Demand(Maximum value of       | Current la lb lc,avg Active/Reactive/Apparent Power: Psum,Qsum,Ssum |       | •        |          |
|                           | Demand)                               |                                                                     |       | •        |          |
| Real time parameters      | Voltage                               | Ua Ub Uc,avg                                                        | •     | •        | •        |
|                           | N line-to-earth voltage               | Ue                                                                  |       |          |          |
|                           | Current                               | la lb lc,avg                                                        | •     | •        | •        |
|                           | N line current                        | In                                                                  |       |          |          |
|                           | Active Power                          | Pa,Pb,Pc,Psum                                                       | •     | •        | •        |
|                           | Reactive Power                        | Qa,Qb,Qc,Qsum                                                       | •     | •        | •        |
|                           | Apparent Power                        | Sa,Sb,Sc,Ssum                                                       | •     | •        | •        |
|                           | Power Factor                          | PFa,PFb,PFc,avg                                                     | •     | •        | •        |
|                           | Frequency                             | Fa,Fb,Fc,avg                                                        | •     | •        | •        |
| Temperature measurement   | One channel temperature acquisition   | 0-1023.75℃                                                          |       |          | •        |
| Full parameter record     | 16GB memory                           | USB flash disk download                                             |       |          |          |
| Full parameter record     | SD card                               | 1GB                                                                 |       | •        |          |
|                           | Communication interface               | RS485 port,Half duplex                                              | •     | •        |          |
| 0                         |                                       | RJ45-Modbus-TCP                                                     |       |          |          |
| Communication             | Communication protocol                | RS485-Modbus-RTU                                                    | •     | •        |          |
|                           |                                       | ODDO                                                                |       |          | •        |
|                           | Wireless transmission                 | GPRS                                                                |       |          |          |



## **FUNCTION LIST**

# **Device Model Type**

|                            | FUNCTION LIST                         |                                                                        |          | ●YES         | @OPTION | BLANK:NO |        |
|----------------------------|---------------------------------------|------------------------------------------------------------------------|----------|--------------|---------|----------|--------|
|                            | FUNCTION                              | PARAMETER                                                              | ME437-SD | ME237V       | ME237C  | ME237R   | ME237S |
|                            | 333mV current sensor                  | SCT-24/SCT-36/SCT-50                                                   | •        | •            |         |          |        |
|                            | 5A current sensor                     |                                                                        |          |              | •       |          |        |
| Type of current sensor     | S                                     | 3 Rated Current(switchable) 600A/2.5kA/6kA                             |          |              |         | •        |        |
|                            | Rogowski coil                         | 5 Rated Current(switchable) 100A/600A/1kA/3kA/6kA                      | •        |              |         |          |        |
|                            | 3 in 1 Rogowski coil with RJ45 output |                                                                        |          |              |         |          | •      |
| Installation style         | Panel                                 |                                                                        | •        | •            | •       | •        | •      |
| matanation style           | 85~265VAC/100~370VDC                  |                                                                        |          |              | _       |          |        |
| Power supply               | 95~265VAC/110~260VDC                  |                                                                        |          | •            | •       | •        | •      |
| Wire                       | Three phase, Single phase             | 3P4W 3P3W                                                              | •        |              |         |          |        |
|                            |                                       | 1P2W (L-N); 1P2W(L-L);1P3W(L-L-N)                                      |          |              |         |          |        |
|                            | Three phase                           | 3P3W,3P4W                                                              |          | •            | •       | •        | •      |
| Current Unbalance          | Each phase, The most unbalanced phase | Ubl(la,lb,lc,lwst)                                                     |          | •            | •       | •        | •      |
| Voltage Unbalance          | Each phase, The most unbalanced phase | Ubl(Ua,Ub,Uc,Uwst)                                                     | _        | •            | •       | •        | •      |
| Line Voltage               |                                       | Uab Ubc Uac                                                            | •        | <u> </u>     | •       | •        | •      |
| Voltage Angle              |                                       | Uab Ubc Uac                                                            | •        |              |         |          |        |
| Current Angle              |                                       | lab lbc lac                                                            | •        |              |         |          |        |
| Displacement Power Factor  | Each phase,Total                      | DPFa,DPFb,DPFc,TOT                                                     | •        | •            | •       | •        | •      |
|                            | Current                               | la lb lc,avg                                                           | •        | •            | •       | •        | •      |
| Instantaneous maximum RMS  | Voltage                               | Ua Ub Uc,avg                                                           | •        | •            | •       | •        | •      |
|                            | Power                                 | Pa,Pb,Pc,Qa,Qb,Qc,Sa,Sb,Sc,Psum,Qsum,Ssum                              | •        | •            | •       | •        | •      |
|                            | Current                               | la lb lc,avg                                                           | •        | •            | •       | •        | •      |
| Instantaneous minimum RMS  | Voltage                               | Ua Ub Uc,avg                                                           | •        | •            | •       | •        | •      |
|                            | Power                                 | Pa,Pb,Pc,Qa,Qb,Qc,Sa,Sb,Sc,Psum,Qsum,Ssum                              | •        | •            | •       | •        | •      |
|                            | Current total harmonic percentage     | ITHDa(%), ITHDb(%),ITHDc(%),ITHD avg(%)                                | •        | •            | •       | •        | •      |
|                            | Voltage total harmonic percentage     | UTHDa(%), UTHDb(%),UTHDc(%),UTHD avg(%)                                | •        | •            | •       | •        | •      |
|                            | Current subharmonic percentage        | ITHDa(%), ITHDb(%),ITHDc(%)                                            | •        |              |         |          |        |
| Harmonic                   | Current subharmonic value             | ITHDa(A), ITHDb(A),ITHDc(A)                                            | •        |              |         |          |        |
|                            | Voltage subharmonic percentage        | UTHDa(%), UTHDb(%),UTHDc(%)                                            | •        |              |         |          |        |
|                            |                                       |                                                                        | _        |              |         |          |        |
|                            | Voltage subharmonic value             | UTHDa(V), UTHDb(V),UTHDc(V)                                            | •        |              |         |          |        |
| Haman da aranda an Bantara | Fifty two                             |                                                                        |          |              |         |          |        |
| Harmonic number display    | Five                                  |                                                                        |          |              |         |          |        |
|                            | Three                                 |                                                                        | •        |              |         |          |        |
|                            | Active Energy                         | EPa,EPb,EPc,EPsum                                                      | •        | •            | •       | •        | •      |
| Energy Measurement         | Reactive Energy                       | EQa,EQb,EQc,EQsum                                                      | •        | •            | •       | •        | •      |
|                            | Apparent Energy                       | ESa,ESb,ESc,ESsum                                                      | •        | •            | •       | •        | •      |
|                            | Electric energy pulse output          |                                                                        | •        | •            | •       | •        | •      |
| Digital signal             | Digital input                         |                                                                        | •        | •            | •       | •        | •      |
|                            | Relay output                          |                                                                        | •        | •            | •       | •        | •      |
| Time-sharing Measurement   | 3 Tariff                              | Controlled by modbus                                                   | •        |              |         |          |        |
|                            | Demand (some time ago)                |                                                                        | •        | •            | •       | •        | •      |
| Demand                     | Maximum Demand(Maximum value of       | Current la lb lc,avg<br>Active/Reactive/Apparent Power: Psum,Qsum,Ssum | •        | •            | •       | •        | •      |
|                            | Demand)                               |                                                                        | •        | •            | •       | •        | •      |
|                            | Voltage                               | Ua Ub Uc,avg                                                           | •        | •            | •       | •        | •      |
|                            | N line-to-earth voltage               | Ue                                                                     |          |              |         |          |        |
| Real time parameters       | Current                               | la lb lc,avg                                                           | •        | •            | •       | •        | •      |
|                            | N line current                        | ln .                                                                   |          |              |         |          |        |
|                            | Active Power                          | Pa,Pb,Pc,Psum                                                          | •        | •            | •       | •        | •      |
|                            | Reactive Power                        | Qa,Qb,Qc,Qsum                                                          | •        | •            | •       | •        | •      |
|                            | Apparent Power                        | Sa,Sb,Sc,Ssum                                                          | •        | •            | •       | •        | •      |
|                            | Power Factor                          | PFa,PFb,PFc,avg                                                        | •        | •            | •       | •        | •      |
|                            | Frequency                             | Fa,Fb,Fc,avg                                                           | •        | <del>-</del> | •       | •        | -      |
|                            | 16GB memory                           | USB flash disk download                                                |          |              |         |          |        |
| Full parameter record      | SD card                               | 1GB                                                                    |          |              |         |          |        |
|                            |                                       |                                                                        | •        |              |         |          |        |
| Communication              | Communication interface               | RS485 port,Half duplex                                                 | •        | •            | •       | •        | •      |
|                            | Communication protocol                | RS485-Modbus-RTU                                                       | •        | <u> </u>     | •       | •        | •      |
| Display                    | LCD segment code display screen       |                                                                        |          | •            | •       | •        | •      |
|                            | TFT Display                           |                                                                        | •        |              |         |          |        |



#### **FUNCTION LIST**

## **Device Model Type**

| Installation style  Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | FUNCTION  100A/600A/1kA/3kA/6kA  600A/3kA/6kA  Handheld Panel Din Rail Portable Lithium battery  Electricity from major loop,90~528VAC 85-265V 24V | PARAMETER  100A/600A/6kA: Default connecting 50mV/kA rogowski coil 1kA/3kA: Default connecting 85mV/kA rogowski coil 600A/6kA: Default connecting 50mV/kA rogowski coil 3kA: Default connecting 85mV/kA rogowski coil | ME440 | ME550 | BLANK:NO<br>MQ21 | MQ31 | Intelligen<br>oscilloscop |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|------------------|------|---------------------------|
| 3 Rated Current Selectable  Installation style  Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 600A/3kA/6kA  Handheld  Panel  Din Rail  Portable  Lithium battery  Electricity from major loop,90~528VAC                                          | Default connecting 50mV/kA rogowski coil 1kA/3kA: Default connecting 85mV/kA rogowski coil 600A/6kA: Default connecting 50mV/kA rogowski coil 3kA:                                                                    | •     | •     | •                | •    | •                         |
| 3 Rated Current Selectable  Installation style  Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 600A/3kA/6kA  Handheld  Panel  Din Rail  Portable  Lithium battery  Electricity from major loop,90~528VAC                                          | 1kA/3kA: Default connecting 85mV/kA rogowski coil 600A/6kA: Default connecting 50mV/kA rogowski coil 3kA:                                                                                                             | •     | •     | •                | •    | •                         |
| Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Handheld Panel Din Rail Portable Lithium battery Electricity from major loop,90~528VAC                                                             | 600A/6kA:<br>Default connecting 50mV/kA rogowski coil<br>3kA:                                                                                                                                                         | •     | •     | •                | •    | •                         |
| Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Handheld Panel Din Rail Portable Lithium battery Electricity from major loop,90~528VAC                                                             | Default connecting 50mV/kA rogowski coil 3kA:                                                                                                                                                                         | •     | •     | •                | •    | •                         |
| Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Handheld Panel Din Rail Portable Lithium battery Electricity from major loop,90~528VAC                                                             |                                                                                                                                                                                                                       | •     | •     |                  |      | •                         |
| Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Panel  Din Rail  Portable  Lithium battery  Electricity from major loop,90~528VAC                                                                  |                                                                                                                                                                                                                       | •     | •     |                  |      | •                         |
| Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Din Rail Portable Lithium battery Electricity from major loop,90~528VAC                                                                            |                                                                                                                                                                                                                       |       |       |                  |      |                           |
| Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Portable<br>Lithium battery<br>Electricity from major loop,90~528VAC<br>85-265V                                                                    |                                                                                                                                                                                                                       |       |       |                  |      |                           |
| Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lithium battery  Electricity from major loop,90~528VAC  85-265V                                                                                    |                                                                                                                                                                                                                       |       |       | •                |      |                           |
| Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Electricity from major loop,90~528VAC                                                                                                              |                                                                                                                                                                                                                       |       |       |                  | •    |                           |
| Power supply  Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 85-265V                                                                                                                                            | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                 | •     | •     |                  |      | •                         |
| Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                    |                                                                                                                                                                                                                       |       |       | •                | •    |                           |
| Current Unbalance I Voltage Unbalance I Line Voltage Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 24V                                                                                                                                                |                                                                                                                                                                                                                       |       |       |                  |      |                           |
| Current Unbalance  Voltage Unbalance  Line Voltage  Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                    |                                                                                                                                                                                                                       |       |       |                  |      |                           |
| Voltage Unbalance I Line Voltage Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5V adaptor                                                                                                                                         | Libition in to break                                                                                                                                                                                                  | •     | •     |                  |      |                           |
| Line Voltage<br>Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Each phase, The most unbalanced phase  Each phase, The most unbalanced phase                                                                       | Ubl(Ia,Ib,Ic,Iwst) Ubl(Ua,Ub,Uc,Uwst)                                                                                                                                                                                 | •     | •     | •                | •    | •                         |
| Voltage Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Edon phase, The most unbalanced phase                                                                                                              | Uab Ubc Uac                                                                                                                                                                                                           | •     |       |                  | •    |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                    | Uab Ubc Uac                                                                                                                                                                                                           | •     | •     | •                | •    | •                         |
| Current Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                    | Uab Ubc Uac                                                                                                                                                                                                           | •     | •     | •                | •    | •                         |
| Displacement Power Factor I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Each phase,Total                                                                                                                                   | DPFa,DPFb,DPFc,TOT                                                                                                                                                                                                    | •     | •     | •                | •    | •                         |
| _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Current                                                                                                                                            | la lb lc,avg                                                                                                                                                                                                          | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Voltage                                                                                                                                            | Ua Ub Uc,avg                                                                                                                                                                                                          | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Power                                                                                                                                              | Pa,Pb,Pc,Qa,Qb,Qc,Sa,Sb,Sc,Psum,Qsum,Ssum                                                                                                                                                                             | •     | •     | •                | •    | •                         |
| _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Current<br>Voltage                                                                                                                                 | la Ib Ic,avg<br>Ua Ub Uc,avg                                                                                                                                                                                          | •     | •     | •                | •    | •                         |
| _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Power                                                                                                                                              | Pa,Pb,Pc,Qa,Qb,Qc,Sa,Sb,Sc,Psum,Qsum,Ssum                                                                                                                                                                             | •     |       | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Current total harmonic percentage                                                                                                                  | ITHDa(%), ITHDb(%),ITHDc(%),ITHD avg(%)                                                                                                                                                                               | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Voltage total harmonic percentage                                                                                                                  | UTHDa(%), UTHDb(%),UTHDc(%),UTHD avg(%)                                                                                                                                                                               | •     | •     | •                | •    | •                         |
| Harmonic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Current subharmonic percentage                                                                                                                     | ITHDa(%), ITHDb(%),ITHDc(%)                                                                                                                                                                                           | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Current subharmonic value                                                                                                                          | ITHDa(A), ITHDb(A),ITHDc(A)                                                                                                                                                                                           | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Voltage subharmonic percentage                                                                                                                     | UTHDa(%), UTHDb(%),UTHDc(%)                                                                                                                                                                                           | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Voltage subharmonic value 51 times in the meantime                                                                                                 | UTHDa(V), UTHDb(V),UTHDc(V)                                                                                                                                                                                           | •     | •     | •                | •    | •                         |
| - I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Five                                                                                                                                               |                                                                                                                                                                                                                       | •     | •     | _                | •    | _                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Three                                                                                                                                              |                                                                                                                                                                                                                       |       |       |                  |      |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                    | Record time, amplitude value, voltage RMS 1/2 value of each phase                                                                                                                                                     |       |       |                  |      |                           |
| Power quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Voltage swell,dip                                                                                                                                  | and voltage waveform of each phase                                                                                                                                                                                    |       | •     | •                | •    | •                         |
| r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Waveform display                                                                                                                                   | Ua,Ub,Uc,Ia,Ib,Ic                                                                                                                                                                                                     |       | •     |                  | •    |                           |
| Waveform                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Waveform reading (UDP protocol)                                                                                                                    | Ua,Ub,Uc,Ia,Ib,Ic                                                                                                                                                                                                     |       | •     | •                |      |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Active Energy                                                                                                                                      | EPa,EPb,EPc,EPsum                                                                                                                                                                                                     | •     |       |                  | •    |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Reactive Energy                                                                                                                                    | EQa,EQb,EQc,EQsum                                                                                                                                                                                                     | •     |       |                  |      |                           |
| _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Apparent Energy                                                                                                                                    | ESa,ESb,ESc,ESsum                                                                                                                                                                                                     | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Electric energy pulse output                                                                                                                       |                                                                                                                                                                                                                       | -     |       |                  |      |                           |
| Digital signal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Digital input                                                                                                                                      |                                                                                                                                                                                                                       |       |       | •                | •    |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Relay output                                                                                                                                       |                                                                                                                                                                                                                       |       |       | •                | •    |                           |
| Temperature and humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Temperature                                                                                                                                        | Three channels                                                                                                                                                                                                        |       |       | •                | •    |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Humidity                                                                                                                                           | One channel                                                                                                                                                                                                           |       |       | •                | •    |                           |
| , and the second | 3 Tariff Demand (some time ago)                                                                                                                    | Controlled by modbus                                                                                                                                                                                                  |       |       |                  |      |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Demand (some time ago)                                                                                                                             | Current la lb lc,avg                                                                                                                                                                                                  | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Maximum Demand(Maximum value of<br>Demand)                                                                                                         | Active/Reactive/Apparent Power: Psum,Qsum,Ssum                                                                                                                                                                        | •     |       | •                | •    |                           |
| ,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Voltage                                                                                                                                            | Ua Ub Uc,avg                                                                                                                                                                                                          | •     | •     | •                | •    | •                         |
| - I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N line-to-earth voltage                                                                                                                            | Ue                                                                                                                                                                                                                    | •     | •     |                  | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Current                                                                                                                                            | la lb lc,avg                                                                                                                                                                                                          | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | N line current                                                                                                                                     | In                                                                                                                                                                                                                    | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Active Power                                                                                                                                       | Pa,Pb,Pc,Psum                                                                                                                                                                                                         | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Reactive Power                                                                                                                                     | Qa,Qb,Qc,Qsum                                                                                                                                                                                                         | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Apparent Power Power Factor                                                                                                                        | Sa,Sb,Sc,Ssum PFa,PFb,PFc,avg                                                                                                                                                                                         | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Power Factor<br>Frequency                                                                                                                          | Fa,Fb,Fc,avg                                                                                                                                                                                                          | •     | •     | •                | •    | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                    | USB flash disk download                                                                                                                                                                                               | •     | •     |                  |      | •                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16GB memory                                                                                                                                        |                                                                                                                                                                                                                       |       |       |                  |      |                           |
| Full parameter record                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 16GB memory<br>SD card                                                                                                                             | 1GB                                                                                                                                                                                                                   |       |       |                  |      |                           |
| Full parameter record                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SD card                                                                                                                                            |                                                                                                                                                                                                                       |       |       | •                | •    |                           |
| Full parameter record                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                    | 1GB                                                                                                                                                                                                                   | •     | •     | •                | •    | •                         |
| Full parameter record  Communication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SD card  Communication interface                                                                                                                   | 1GB<br>RS485 port,Half duplex                                                                                                                                                                                         | •     | •     |                  | •    | •                         |
| Full parameter record  Communication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SD card  Communication interface  Communication protocol                                                                                           | 1GB<br>RS485 port,Half duplex<br>Ethernet port                                                                                                                                                                        |       |       | •                | •    | 1                         |
| Full parameter record  Communication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SD card  Communication interface  Communication protocol  1.3 inch Color OLED                                                                      | 1GB RS485 port,Half duplex Ethernet port RJ45-Modbus-TCP                                                                                                                                                              | •     |       | •                |      | 1                         |
| Full parameter record  Communication  Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SD card  Communication interface  Communication protocol                                                                                           | 1GB RS485 port,Half duplex Ethernet port RJ45-Modbus-TCP                                                                                                                                                              |       |       | •                |      | 1                         |