



K-QNA500-A 8IO, Advanced power quality analyzers

Code: Q20932. DESCATALOGADO

> Protocol: Modbus/TCP | ZMODEM | FTP | webserver (HTTP)

> Memory: 4 GB

> Memory: Yes

> Events / Waveform (1 = yes): Yes

> Web server: Yes

> Energy accuracy: 0,2S

> Communications: RS-232 | RS-485 | Ethernet

> Transistor output: 8

> Digital inputs: 8

> Harmonics: 50

> Class: A

> Mounting: Pannel | DIN rail | Wall-mounted

### Description

QNA 500 is a modular power quality analyzer designed to measure and record the main electrical parameters and transient disturbances. The measurement is taken in true root mean square (TRMS), with 5 AC voltage inputs, 4 AC current inputs (via ... /5 A current transformers) and a leakage current input.

#### **Application**

QNA0500 is designed to supervise the electric installation and problems relating to electric power quality, in order to control production processes and manage incidents. It integrates easily with SCADA applications and interacts with commercially available PLCs, and so can be part of more global data acquisition systems and report to users the information they require at any time. Its modularity and the addition of M-108 modules enable the user to also control energy consumption, states of switches or loads, send alarms, and even connect/disconnect loads according to configurable conditions.

When combined with CIRCUTOR PowerVision Plus software, the user can configure customised reports to assess the correct running of the electric installation, and can apply standards such as the EN-50160, event tables such as CBEMA, UNIPEDE or others. By automating this information, the user can view the most important data needed for the relevant analysis with just one click .







Modular power quality analyzer

Code: Q20932.

### **Specifications**

| Auxiliary battery power supply           |   |  |
|--|---|--|
| Battery type                             | Ni-MH extraíble ( base module)  |  |
| AC power supply                          |   |  |
| Consumption                              | 26 VA   |  |
| Frequency                                | 5060 HZ (Alim.Aux.:módulo base)   |  |
| Nominal voltage                          | 90300 Vc.a.(Alim.Aux.:módulo base)  |  |
| DC power supply                          |   |  |
| Nominal voltage                          | 100300 Vdc (Aux. power base module)   |  |
| Mechanical characteristics               |   |  |
| Size (mm) width x height x depth         | 174 x 125 x 173.3 (mm)  |  |
| Envelope                                 | Self-extinguishing V0 plastic   |  |
| Differential current measurement         | ≤ 2,5 mm2   |  |
| Fastening                                | DIN rail 46227 (EN 50022) or Bottom Panel   |  |
| Weight (kg)                              | 2,3   |  |
| Environmental characteristics            |   |  |
| Protection class                         | IP 41   |  |
| Relative humidity (without condensation) | 595%  |  |
| Working temperature                      | -10+60 °C   |  |
| Standards                                |   |  |
| Certifications                           | CE, UL, VDE   |  |
| Electrical safety, Maximum height (m)    | 2000  |  |
| Electrical safety, Installation category | CAT IV (600 V) o CAT III (1000 V) IEC 61010   |  |
| Standards                                | IEC 664, VDE 0110, UL 94, IEC 801, IEC 348, IEC 571-1, EN 61000-6-3, EN 61000-6-1, EN 61010-1, EN 61000-4-11, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 55011, IEC 61000-4-30 Class A or Class S |  |
| Current measurement circuit              |   |  |
| Sampling frequency                       | 512 samples / cycle   |  |
| Phase current measuring range            | 1120% of In (In: 5A)  |  |
| Permanent overload                       | 120% In (In: 5A, Imax: 6A)  |  |
|  |   |  |
| Maximum pulse current                    | 100 A   |  |
|  | 100 A   |  |







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| Frequency measuring range  |                                       |   |
|--|---------------------------------------|---|
| Insulation voltage 1,2/50 µs (8/20 µs) 6 kV Maximum permanent measurement voltage 1500 V (Ph-Ph)  Electrical characteristics  Insulation voltage, circuit 1,2/50 µs (8/20 µs) 6 kV  Communication Network  Protocol ModBus/TEP, Cirbus, TEP/IP Technology / Interface Ethernet  Electrical safety  Insulation Double insulated electric shock protection class III (IEE 61010-1)  Pigital inputs  Input / output insulation  Quantity 8 Input / output insulation 5 kV  Quantity 8 Communipion (per input) 2,5 mW  Quentity 9 Insulation 75 µs  Appearating voltage 12-18 Vsc  Leskage current measurement (ID)  Sampling frequency 64 samplus / cycle Measurement range 0-3 A Maximum current 3A  Digital relay outputs  Quentity 8 Quentity 950 V Maximum power 84 set de estado sólido (Optomosfet)  Quentity 950 V Maximum resistance RGN 30 Q Maximum resistance RGN 30 Q Maximum power 950 mW Maximum switching capacity 550 rW  Measurement accuracy  Current unbalance (Kd) 45 % (IEE 61000-4-30 class A) Voltage unbulance (Kd) 45 % (IEE 61000-4-30 class A)  | Frequency measuring range             | 42.569 Hz   |
| Maximum permanent measurement voltage   1500 V (Pn-Ph)   | Nominal voltage                       | 0500V Ph-N / 0866V Ph-Ph  |
| Electrical characteristics  Insulation voltage, circuit  Communication Network  Protocol MedBus/TCP, Girbus, TCP/IP Technology / Interface Ethernet  Electrical safety  Insulation Double-insulated electric shock protection class II (EC 61010-1)  Digital inputs  Digital inputs  S kV Quantity 8 Consumption (per input) 2,5 mW Type Optocoupler  Minimum signal width 15 ps Operating voltage 12-18 Vide  Leakage current measurement (IO)  Sampling frequency 64 samples / cycle Measurement range 0-3 A Maximum current 30 mA  Digital relay outputs  Quantity 8 Operating current 310 mA Type Reié de estado solido (Optomostet)  Operating voltage 250 V Maximum resistance RON 30 Ω Maximum resistance RON 30 Ω Maximum resistance RON 40 Maximum switching capacity 500 mW  Measurement accuracy  Current unbalance (Kd) 45 % (EC61000-4-30 class A) Voltage unbalance (Kd) 45 % (EC61000-4-30 class A)   | Insulation voltage                    | 1.2/50μs (8/20μs) 6 kV  |
| Insulation voltage, circuit  Communication Network  Protocol Tethnology Interface  Electrical safety  Insulation  Double-insulated electric shock protection class II (EC 61010-1)  Digital inputs  Input/output insulation  S HV Quantity Qu | Maximum permanent measurement voltage | 1500 V (Ph-Ph)  |
| Communication Network           Protocol         ModBus/TCP, Cirbus, TCP/IP           Technology / Interface         Elbernet           Electrical safety           Insulation         Double-Insulated electric shock protection class II (IEC 61010-1)           Digital inputs           Input / output insulation         5 kV           Quantity         8           Consumption (per input)         2,5 mW           Type         Optocoupler           Minimum signal width         15 μs           Operating voltage         12-18 Vdc           Leakage current measurement (ID)           Sampling frequency         64 samples / cycle           Measurement range         0-3 A           Maximum current         3 A           Digital relay outputs           Quantity         8           Operating current         130 mA           Type         Reié de estado solido (Optomosfet)           Operating voltage         250 V           Maximum resistance RON         30 0           Maximum power         500 mW           Measurement accuracy           Current unbalance (Kd)         45 % (IEC61000-4-30 class A)           Voltage unb  | Electrical characteristics            |   |
| Protocol Tecnnology / Interface Electrical safety  Insulation Double-insulated electric shock protection class II (IEC 61010-1)  Digital inputs  Input / output insulation S kV Quantity B a Consumption (per input) Type Optocoupler Minimum signal width Digital voltage 12-18 Vdc  Leskage current measurement (IO)  Sampling frequency Measurement range O-3 A Maximum current A B Digital relay outputs  Quantity B a Quantity B a Quantity B a Maximum current A 3 A  Digital relay outputs  Quantity B a C a C a C a C a C a C a C a C a C a C   | Insulation voltage, circuit           | 1.2/50μs (8/20μs) 6kV   |
| Electrical safety  Insulation Double-insulated electric shock protection class II (IEC 61010-1)  Digital inputs  Input/output insulation S kV  Quantity 8 8  Consumption (per input) 2,5 mW  Type Optocoupler Measurement (ID)  Sampling frequency 64 samples / cycle Measurement range 0-3 A  Analomum current 30 A  Digital regulated outputs  Quantity 8  Quentity 8  Refe de estado sólido (Optomosfet)  Quantity 9  Maximum resistance RON 30 Q  Maximum power SOO mW  Measurement accuracy  Current unbalance (Kd) 4.5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) 4.5 % (IEC61000-4-30 class A)   | Communication Network                 |   |
| Electrical safety  Insulation Double-insulated electric shock protection class II (IEC 61010-1)  Digital inputs  Input/output insulation 5 kV  Quantity 8 Consumption (per input) 2,5 mW Type Optocoupler  Minimum signal width 15 µs Operating voltage 12-18 Vdc  Leakage current measurement (ID)  Sampling frequency 64 samples / cycle  Measurement range 0-3 A  Digital relay outputs  Operating current 3 A  Digital relay outputs  Quantity 8 Operating current 130 mA Type 8elé de estado sólido (Optomosfet) Operating voltage 250 V  Maximum resistance RON 30 Q  Maximum power 500 mW  Maximum switching capacity 500 mW  Measurement accuracy  Current unbalance (Kd) 45 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) 45 % (IEC61000-4-30 class A)  | Protocol                              | ModBus/TCP, Cirbus, TCP/IP  |
| Digital inputs  Input/output insulation 5 kV  Quantity 8  Consumption (per input) 2,5 mW  Type Optocupier  Minimum signal width 15 μs  Operating voltage 12-18 Vdc  Leakage current measurement (ID)  Sampling frequency 64 samples / cycle  Measurement range 0-3 A  Maximum current 3 A  Digital relay outputs  Quantity 8  Operating current 130 mA  Type Reié de estado sólido (Optomosfet)  Operating voltage 250 V  Maximum power 500 mW  Maximum power 500 mW  Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)   | Technology / Interface                | Ethernet  |
| Input/ Output insulation 5 kV Quantity 8 Consumption (per input) 2,5 mW Type Optocoupler Minimum signal width 15 µs Operating voltage 12-18 Vdc  Leakage current measurement (ID)  Sampling frequency 64 samples / cycle Measurement range 0-3 A Maximum current 3 A  Digital relay outputs  Quantity 8 Operating outrent 130 mA Type Relé de estado sólido (Optomosfet) Operating voltage 250 V Maximum resistance RON 30 Q Maximum power 500 mW Maximum power 500 mW  Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A) Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)  | Electrical safety                     |   |
| Input/output insulation 5 kV  Quantity 8 Consumption (per input) 2,5 mW  Type Optocoupler  Minimum signal width 15 μs Operating voltage 12-18 Vdc  Leakage current measurement (ID)  Sampling frequency 64 samples / cycle  Measurement range 0-3 A  Maximum current 3 A  Digital relay outputs  Quantity 8 Operating current 130 mA  Type Relé de estado sólido (Optomosfet)  Operating voltage 250 V  Maximum resistance RON 30 Ω  Maximum power 500 mW  Maximum switching capacity 500 mW  Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)   | Insulation                            | Double-insulated electric shock protection class II (IEC 61010-1) |
| Quantity 8   Consumption (per input) 2,5 mW   Type Optocoupler   Minimum signal width 15 μs   Operating voltage 12-18 Vdc    Leakage current measurement (ID)  Sampling frequency 64 samples / cycle   Measurement range 0-3 A   Maximum current 3 A   Digital relay outputs   Quantity 8   Operating current 130 mA   Type Relé de estado sólido (Optomosfet)   Operating voltage 250 V   Maximum resistance RON 30 Ω   Maximum power 500 mW   Maximum switching capacity 500 mW   Measurement accuracy   Current unbalance (Kd) ±5 % (IEC61000-4-30 class A)   Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)   | Digital inputs                        |   |
| Consumption (per input)  Type Optocoupler  Minimum signal width 15 µs  Operating voltage 12-18 Vdc  Leakage current measurement (ID)  Sampling frequency 64 samples / cycle Measurement range 0-3 A  Maximum current 3 A  Digital relay outputs  Quantity 8 Operating current 130 mA  Type Relé de estado sólido (Optomosfet) Operating voltage 250 V  Maximum resistance RON 30 Q  Maximum power 500 mW  Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A) Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)  | Input/output insulation               | 5 kV  |
| Type Optocoupler  Minimum signal width 15 μs  Operating voltage 12-18 Vdc  Leakage current measurement (ID)  Sampling frequency 64 samples / cycle  Measurement range 0-3 A  Maximum current 3 A  Digital relay outputs  Quantity 8  Operating current 130 mA  Type Relé de estado sólido (Optomosfet)  Operating voltage 250 V  Maximum resistance RON 30 Ω  Maximum power 500 mW  Maximum power 500 mW  Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)   | Quantity                              | 8   |
| Minimum signal width  Operating voltage  12-18 Vdc  Leakage current measurement (ID)  Sampling frequency 64 samples / cycle  Measurement range 0-3 A  Maximum current 3 A  Digital relay outputs  Quantity 8 Operating current 130 mA  Type Relé de estado sólido (Optomosfet)  Operating voltage 250 V  Maximum resistance RON 30 Ω  Maximum power 500 mW  Maximum switching capacity 500 mW  Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A) Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)   | Consumption (per input)               | 2,5 mW  |
| Operating voltage     12-18 Vdc       Leakage current measurement (ID)     64 samples / cycle       Measurement range     0-3 A       Maximum current     3 A       Digital relay outputs       Quantity     8       Operating current     130 mA       Type     Relé de estado sólido (Optomosfet)       Operating voltage     250 V       Maximum resistance RON     30 Ω       Maximum power     500 mW       Maximum switching capacity     500 mW       Measurement accuracy       Current unbalance (Kd)     ±5 % (IEC61000-4-30 class A)       Voltage unbalance (Kd)     ±5 % (IEC61000-4-30 class A)  | Туре                                  | Optocoupler   |
| Leakage current measurement (ID)       Sampling frequency     64 samples / cycle       Measurement range     0-3 A       Maximum current     3 A       Digital relay outputs       Quantity     8       Operating current     130 mA       Type     Relé de estado sólido (Optomosfet)       Operating voltage     250 V       Maximum resistance RON     30 Ω       Maximum power     500 mW       Maximum switching capacity     500 mW       Measurement accuracy       Current unbalance (Kd)     ±5 % (IEC61000-4-30 class A)       Voltage unbalance (Kd)     ±5 % (IEC61000-4-30 class A)   | Minimum signal width                  | 15 µs   |
| Sampling frequency  Measurement range  0-3 A  Maximum current  3 A   Digital relay outputs  Quantity  8  Operating current  130 mA  Type  Relé de estado sólido (Optomosfet)  Operating voltage  250 V  Maximum resistance RON  30 Ω  Maximum power  500 mW  Maximum switching capacity  500 mW  Measurement accuracy  Current unbalance (Kd)  ±5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd)  ±5 % (IEC61000-4-30 class A)  | Operating voltage                     | 12-18 Vdc   |
| Measurement range       0-3 A         Maximum current       3 A         Digital relay outputs         Quantity       8         Operating current       130 mA         Type       Relé de estado sólido (Optomosfet)         Operating voltage       250 V         Maximum resistance RON       30 Ω         Maximum power       500 mW         Maximum switching capacity       500 mW         Measurement accuracy         Current unbalance (Kd)       ±5 % (IEC61000-4-30 class A)         Voltage unbalance (Kd)       ±5 % (IEC61000-4-30 class A)  | Leakage current measurement (ID)      |   |
| Measurement range       0-3 A         Maximum current       3 A         Digital relay outputs         Quantity       8         Operating current       130 mA         Type       Relé de estado sólido (Optomosfet)         Operating voltage       250 V         Maximum resistance RON       30 Ω         Maximum power       500 mW         Maximum switching capacity       500 mW         Measurement accuracy         Current unbalance (Kd)       ±5 % (IEC61000-4-30 class A)         Voltage unbalance (Kd)       ±5 % (IEC61000-4-30 class A)  | Sampling frequency                    | 64 samples / cycle  |
| Digital relay outputs       Quantity     8       Operating current     130 mA       Type     Relé de estado sólido (Optomosfet)       Operating voltage     250 V       Maximum resistance RON     30 Ω       Maximum power     500 mW       Maximum switching capacity     500 mW       Measurement accuracy       Current unbalance (Kd)     ±5 % (IEC61000-4-30 class A)       Voltage unbalance (Kd)     ±5 % (IEC61000-4-30 class A)  |                                       | 0-3 A   |
| Quantity       8         Operating current       130 mA         Type       Relé de estado sólido (Optomosfet)         Operating voltage       250 V         Maximum resistance RON       30 Ω         Maximum power       500 mW         Maximum switching capacity       500 mW         Measurement accuracy         Current unbalance (Kd)       ±5 % (IEC61000-4-30 class A)         Voltage unbalance (Kd)       ±5 % (IEC61000-4-30 class A)  |                                       | 3 A   |
| Quantity       8         Operating current       130 mA         Type       Relé de estado sólido (Optomosfet)         Operating voltage       250 V         Maximum resistance RON       30 Ω         Maximum power       500 mW         Maximum switching capacity       500 mW         Measurement accuracy         Current unbalance (Kd)       ±5 % (IEC61000-4-30 class A)         Voltage unbalance (Kd)       ±5 % (IEC61000-4-30 class A)  | Digital relay outputs                 |   |
| Type Relé de estado sólido (Optomosfet)  Operating voltage 250 V  Maximum resistance RON 30 Ω  Maximum power 500 mW  Maximum switching capacity 500 mW  Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)   | Quantity                              | 8   |
| Operating voltage       250 V         Maximum resistance RON       30 Ω         Maximum power       500 mW         Maximum switching capacity       500 mW         Measurement accuracy         Current unbalance (Kd)       ±5 % (IEC61000-4-30 class A)         Voltage unbalance (Kd)       ±5 % (IEC61000-4-30 class A)  | Operating current                     | 130 mA  |
| Maximum resistance RON       30 Ω         Maximum power       500 mW         Maximum switching capacity       500 mW         Measurement accuracy         Current unbalance (Kd)       ±5 % (IEC61000-4-30 class A)         Voltage unbalance (Kd)       ±5 % (IEC61000-4-30 class A)  | Туре                                  | Relé de estado sólido (Optomosfet)                                |
| Maximum power 500 mW  Maximum switching capacity 500 mW  Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)  | Operating voltage                     | 250 V   |
| Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)   | Maximum resistance RON                | 30 Ω  |
| Measurement accuracy  Current unbalance (Kd) ±5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)   | Maximum power                         | 500 mW  |
| Current unbalance (Kd) ±5 % (IEC61000-4-30 class A)  Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)   | Maximum switching capacity            | 500 mW  |
| Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)  | Measurement accuracy                  |   |
| Voltage unbalance (Kd) ±5 % (IEC61000-4-30 class A)  | Current unbalance (Kd)                | ±5 % (IEC61000-4-30 class A)                                      |
|  |                                       |   |
|  |                                       |   |







Technology / Type

### K-QNA500-A 810

Modular power quality analyzer

Code: Q20932.

| Protocol                            | Modbus RTU                              |
|-------------------------------------|---|
| Serial communication                |   |
| Sampling frequency                  | 512 samples/cycle per channel           |
| Analoque to digital converter (ADC) | 24 bits                                 |
| Processor                           |   |
| Voltage harmonics (THD)             | According to IEC 61000-4-7              |
| Current harmonics (THD)             | According to IEC 61000-4-7              |
| Pst Flicker                         | According to IEC 61000-4-15             |
| Phase voltage measurement           | 0,1 % (IEC-61000-4-30 class A)          |
| Active power measurement (kW)       | 0,2 % (in accordance with IEC 62053-22) |

Communications through the BASE module (mandatory). Check the maximum number of modules that can be connected for each BASE system. The QNA500 include the Power Vision+ software Each unit is made up of a BASE module (power supply) + measuring module + inputs/outputs module (according to each type). Compatible with PowerStudio (version 4.02 and higher).

RS-232|RS-485







Modular power quality analyzer

Code: Q20932.

#### Dimensions Connections



