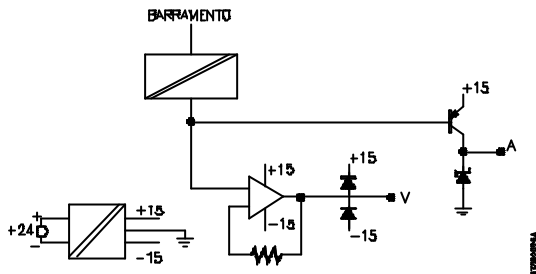


1. Product Description

The QK1222 is one Quark PLC Series card and has 4 analog output points to tension or current signals. The output signals are isolated from the bus and external power supplies.

The simplified circuit for one point is shown below:



2. Integrating Parts

The product package contains:

- QK1222 - 4 AO Multi-Range 12 bits Isolated Card

3. Opcional Parts

The following parts are not part of the product and can be purchased in separate:

- AL-3890: software license for the Calibware Software

The Calibware software handles the calibration of the QK1222 card by means of an IBM PC® compatible microcomputer.

4. Specifications

4.1. General

- I/O capacity: 4
- Analog GND common to all points
- LED card accessing
- Resistive and capacitive loads
- Short-circuit protection
- MTBF: 36000 hours @ 40°C
based on MIL-HDBK-217E
- Mechanical protection: IP 30, finger access and no protection for water
based on IEC Pub. 144(1963)
- Operation temperature: 0 to 60°C
exceed IEC 1131
- Stacking temperature: -25 to 75°C
based on IEC 1131
- Operation humidity: 5 to 95% without condensation
based on IEC 1131 level RH2
- Weight:
net: 450g
packed: 595g

4.2. Electrical

- Output range:
 - tension: -10 to +10 V
 - current: 4 to 20 mA
- Load impedance :
 - tension: 1 kΩ min
 - current: 600 Ω max
- Maximal error @ 25 °C:
 - tension: ±2 LSB
 - current: ±3 LSB
- Maximal power dissipation:

6 W

- Temperature coefficient:
 - ± 100 ppm/°C
- Maximal error:
 - ± 0,5% end of scale
- Resolution:
 - 11 bits + signal
- LSB value:
 - tension: 5 mV
 - current: 8 µA
- Delay time:
 - 1,0 ms
- Temperature stabilization time:
 - 5 min
- Non-linearity:
 - tension: ±1 LSB
 - current: ±1,5 LSB
- Repetibility:
 - 0,007% end of scale
- Monotonic
- No overshoot
- Maximal capacitive load (tension):
 - 90 nF
- Isolation between output and system:
 - 500 Vdc
- Power consumption:
 - +12 V @ 20 mA
 - +24 V @ 350 mA (external power supply)
- Electrostatic Surge Discharge:
 - based on IEC 1131, level 3
- Irradiated electrical field immunity:
 - 10V/m @ 140 MHz
 - based on IEC 1131

4.3. Software

- Microcontrolled card with serial communication interface for calibration
- Ranges:

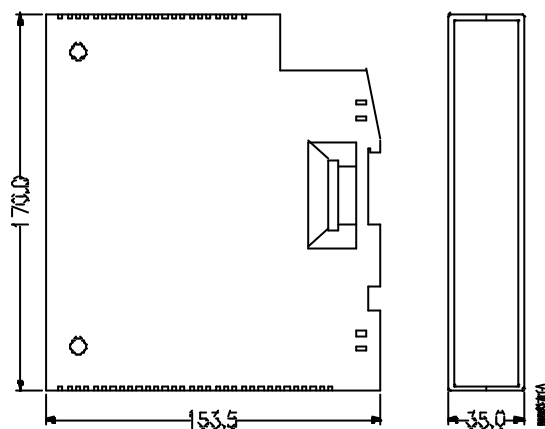
Current mode

Digital value	Analog value
0	4,000 mA
2000	20,000 mA

Tension mode

Digital value	Analog value
0	-10,000 V
4000	10,000 V

5. Physical Dimensions



8. Handbooks

For more information about installation and use of the I/O cards consult also the PLC Utilization Handbook.

For more information about programming consult the Programmer Utilization Handbook.

9. Revisions

The revision of this document is shown at the right upper corner, indicating changes.

ALTUS reserve the rights to change this document without previous notice.

The following historic shows changes to each revision:

Revision: A	Date: 05/23/94
Approval: Júlio Sieczkowski - R&D	
Author: Alexandre Hessler - R&D	

Observations:

- Initial revision of this document

Revision: B	Date: 12/15/94
Approval: Júlio Sieczkowski - R&D	
Author: Alexandre Hessler - R&D	

Observations:

- Diagrams revision

Revision: C	Date: 06/06/95
Approval: Júlio Sieczkowski - R&D	
Author: Alexandre Hessler - R&D	

Observations:

- Technical revision

Revision: D	Date: 09/25/95
Approval: Júlio Sieczkowski - R&D	
Author: Parceria Ltda.	

Observations:

- WINWORD 6.0 document conversion