

## Resin board version NBR12 Part number 88973002



- Vibration resistant
- Extended temperature range
- Outputs via removable connectors
- IP50 seal (connectors)
- DB 9-pin programming port via standard RS 232 cable
- Designed for application-specific functions
- Supplied without connectors. Connectors available (Ref. 88970313, 88970314, 88970315, 88970316)

### Part numbers

|          | Type  | Designation                   | Inputs                           | Outputs                               | Supply  |
|----------|-------|-------------------------------|----------------------------------|---------------------------------------|---------|
| 88973002 | NBR12 | Relay outputs with connectors | 8 digital (including 4 analogue) | 4 solid state 0.5 A (including 1 PWM) | 24 V DC |

### Specifications

#### General environment characteristics for CB, CD, XD, XB, XR and XE product types

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certifications                                                             | CE, UL, CSA, GL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Conformity to standards (with the low voltage directive and EMC directive) | IEC/EN 61131-2 (Open equipment)<br>IEC/EN 61131-2 (Zone B)<br>IEC/EN 61000-6-2,<br>IEC/EN 61000-6-3 (*)<br>IEC/EN 61000-6-4<br>(*) Except configuration (88 970 1.1 or 88 970 1.2) + (88 970 250 or 88 970 270) + 88 970 241 class A (class B in a metal enclosure)                                                                                                                                                                                                                                                                                                        |
| Earthing                                                                   | Not included                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Protection rating                                                          | In accordance with IEC/EN 60529 :<br>IP40 on front panel<br>IP20 on terminal block                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Overvoltage category                                                       | 3 in accordance with IEC/EN 60664-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Pollution                                                                  | Degree : 2 in accordance with IEC/EN 61131-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Max operating Altitude                                                     | Operation : 2000 m<br>Transport : 3048 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Mechanical resistance                                                      | Immunity to vibrations IEC/EN 60068-2-6, test Fc<br>Immunity to shock IEC/EN 60068-2-27, test Ea                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Resistance to electrostatic discharge                                      | Immunity to ESD<br>IEC/EN 61000-4-2, level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Resistance to HF interference                                              | Immunity to radiated electrostatic fields<br>IEC/EN 61000-4-3<br>Immunity to fast transients (burst immunity)<br>IEC/EN 61000-4-4, level 3<br>Immunity to shock waves<br>IEC/EN 61000-4-5<br>Radio frequency in common mode<br>IEC/EN 61000-4-6, level 3<br>Voltage dips and breaks (AC)<br>IEC/EN 61000-4-11<br>Immunity to damped oscillatory waves<br>IEC/EN 61000-4-12                                                                                                                                                                                                 |
| Conducted and radiated emissions                                           | Class B (*) in accordance with EN 55022, EN 55011 (CISPR22, CISPR11) group 1<br>(*) Except configuration (88 970 1.1 or 88 970 1.2) + (88 970 250 or 88 970 270) + 88 970 241 class A (class B in a metal enclosure)                                                                                                                                                                                                                                                                                                                                                       |
| Operating temperature                                                      | -20 → +70 °C<br>except CB and XB versions in VDC : -30 → +70 °C (+40 °C in a non-ventilated enclosure)<br>in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-22                                                                                                                                                                                                                                                                                                                                                                                                          |
| Storage temperature                                                        | -40 → +80 °C in accordance with IEC/EN 60068-2-1 and IEC/EN 60068-2-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Relative humidity                                                          | 95 % max. (no condensation or dripping water) in accordance with IEC/EN 60068-2-30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Mounting                                                                   | On symmetrical DIN rail, 35 x 7.5 mm and 35 x 15 mm, or on panel (2 x Ø 4 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Screw terminals connection capacity                                        | Flexible wire with ferrule =<br>1 conductor : 0.25 to 2.5 mm <sup>2</sup> (AWG 24...AWG 14)<br>2 conductors 0.25 to 0.75 mm <sup>2</sup> (AWG 24...AWG 18)<br>Semi-rigid wire =<br>1 conductor : 0.2 to 2.5 mm <sup>2</sup> (AWG 25...AWG 14)<br>Rigid wire =<br>1 conductor : 0.2 to 2.5 mm <sup>2</sup> (AWG 25...AWG 14)<br>2 conductors 0.2 to 1.5 mm <sup>2</sup> (AWG 25...AWG 16)<br>Tightening torque =<br>0.5 N.m (4.5 lb-in) (tighten using screwdriver diam. 3.5 mm)<br>Also valid for spring cage connectors (ref 88 970 313 and 88 970 317 for the RBT range) |

**General characteristics**

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certifications                  | CE                                                                                                                                                                                                                                                                                                                                                                                                    |
| Protection index                | IP50 (removable connectors)                                                                                                                                                                                                                                                                                                                                                                           |
| Mechanical resistance IEC 61373 | Railway applications - Rolling stock<br>Category 1 class B stock mounted on car<br>Vibration resistance : 5-150 Hz<br>Random sampling : 10 minutes in each direction (X, Y, Z)<br>Sinusoidal sampling : 5 hours in each direction (X, Y, Z)<br>Shock resistance : 3 shocks 3 g/30 ms per direction<br>Dropping : Total of 26 drops on all sides from a height of 1 metre                              |
| Mechanical resistance GAM EG 13 | Terrestrial military vehicles<br>Vibration resistance 5-500 Hz 50 m/s <sup>2</sup><br>Sinusoidal sampling 5 hours in each direction (X, Y, Z)<br>Shock resistance :<br>Acceleration : 150 m/s <sup>2</sup> , duration : 11 ms, 3 shocks per shaft<br>Acceleration : 300 m/s <sup>2</sup> , duration : 11 ms, 3 shocks per shaft<br>Bumps : 1000 half wave sine mechanical bumps 15 g / 6 ms per shaft |
| Operating temperature           | -30 → +70 °C (DC)                                                                                                                                                                                                                                                                                                                                                                                     |
| Storage temperature             | -40 → +80 °C                                                                                                                                                                                                                                                                                                                                                                                          |
| Housing                         | Self-extinguishing UL94V2                                                                                                                                                                                                                                                                                                                                                                             |
| Resin                           | UL approved<br>Self-extinguishing UL94V0<br>Semi-rigid polyurethane resin<br>Solid black appearance<br>Breakdown voltage : 25 kV/mn<br>Water absorption : 0.2 % (24 hours at 23 °C)<br>Shore D hardness : 50 ±5<br>Smoke category : F0                                                                                                                                                                |
| Outputs                         | Removable connectors                                                                                                                                                                                                                                                                                                                                                                                  |
| Breaking current                | 6 A relay output                                                                                                                                                                                                                                                                                                                                                                                      |

**Processing characteristics of CB, CD, XD & XB product types**

|                                            |                                                                                                                                      |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| LCD display                                | CD, XD : Display with 4 lines of 18 characters                                                                                       |
| Programming method                         | Function blocks / SCF (Grafcet) or Ladder                                                                                            |
| Program size                               | 8 Kb : 350 typical blocks, 64 macros maximum, 256 blocks maximum per macro<br>or<br>120 lines in Ladder                              |
| Program memory                             | Flash EEPROM                                                                                                                         |
| Removable memory                           | EEPROM                                                                                                                               |
| Data memory                                | 368 bit/200 words                                                                                                                    |
| Back-up time in the event of power failure | Program and settings in the controller : 10 years<br>Program and settings in the plug-in memory : 10 years<br>Data memory : 10 years |
| Cycle time                                 | FBD : 6 → 90 ms (typically 20 ms)<br>Ladder : typically 20 ms                                                                        |
| Response time                              | Input acquisition time : 1 to 2 cycle times                                                                                          |
| Clock data retention                       | 10 years (lithium battery) at 25 °C                                                                                                  |
| Clock drift                                | Drift < 12 min/year (at 25 °C)<br>6 s/month (at 25 °C with user-definable correction of drift)                                       |
| Timer block accuracy                       | 1 % ± 2 cycle times                                                                                                                  |
| Start up time on power up                  | < 1,2 s                                                                                                                              |

**Characteristics of products with AC power supplied**

|                                |                                                                                                                                               |                                                                                                                                              |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Supply</b>                  |                                                                                                                                               |                                                                                                                                              |
| Nominal voltage                | 24 V AC                                                                                                                                       | 100 → 240 V AC                                                                                                                               |
| Operating limits               | -15 % / +20 %<br>or 20.4 V AC → 28.8 V AC                                                                                                     | -15 % / +10 %<br>or 85 V AC → 264 V AC                                                                                                       |
| Supply frequency range         | 50/60 Hz (+4 % / -6 %)<br>or 47 → 53 Hz/57 → 63 Hz                                                                                            | 50/60 Hz (+4 % / -6 %) or 47 → 53 Hz/57 → 63 Hz                                                                                              |
| Immunity from micro power cuts | 10 ms (repetition 20 times)                                                                                                                   | 10 ms (repetition 20 times)                                                                                                                  |
| Max. absorbed power            | CB12-CD12-XD10-XB10 : 4 VA<br>CB20-CD20 : 6 VA<br>XD10-XB10 with extension : 7.5 VA<br>XD26-XB26 : 7.5 VA<br>XD26-XB26 with extension : 10 VA | CB12-CD12-XD10-XB10 : 7 VA<br>CB20-CD20 : 11 VA<br>XD10-XB10 with extension : 12 VA<br>XD26-XB26 : 12 VA<br>XD26-XB26 with extension : 17 VA |
| Isolation voltage              | 1780 V AC                                                                                                                                     | 1780 V AC                                                                                                                                    |

**Inputs**

|                                                |                                                                                          |                                                                                          |
|------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Input voltage                                  | 24 V AC (-15 % / +20 %)                                                                  | 100 → 240 V AC (-15 % / +10 %)                                                           |
| Input current                                  | 4.4 mA @ 20.4 V AC<br>5.2 mA @ 24.0 V AC<br>6.3 mA @ 28.8 V AC                           | 0.24 mA @ 85 V AC<br>0.75 mA @ 264 V AC                                                  |
| Input impedance                                | 4.6 kΩ                                                                                   | 350 kΩ                                                                                   |
| Logic 1 voltage threshold                      | ≥ 14 V AC                                                                                | ≥ 79 V AC                                                                                |
| Making current at logic state 1                | > 2 mA                                                                                   | > 0.17 mA                                                                                |
| Logic 0 voltage threshold                      | ≤ 5 V AC                                                                                 | ≤ 20 V AC (≤ 28 V AC : XE10, XR06, XR10, XR14)                                           |
| Release current at logic state 0               | < 0.5 mA                                                                                 | < 0.5 mA                                                                                 |
| Response time with LADDER programming          | 50 ms<br>State 0 → 1 (50/60 Hz)                                                          | 50 ms<br>State 0 → 1 (50/60 Hz)                                                          |
| Response time with function blocks programming | Configurable in increments of 10 ms<br>50 ms min. up to 255 ms<br>State 0 → 1 (50/60 Hz) | Configurable in increments of 10 ms<br>50 ms min. up to 255 ms<br>State 0 → 1 (50/60 Hz) |
| Maximum counting frequency                     | In accordance with cycle time (Tc) and input response time (Tr) :<br>1/ ( (2 x Tc) + Tr) | In accordance with cycle time (Tc) and input response time (Tr) :<br>1/ ( (2 x Tc) + Tr) |

|                                           |                             |                             |
|-------------------------------------------|-----------------------------|-----------------------------|
| Sensor type                               | Contact or 3-wire PNP       | Contact or 3-wire PNP       |
| Input type                                | Resistive                   | Resistive                   |
| Isolation between power supply and inputs | None                        | None                        |
| Isolation between inputs                  | None                        | None                        |
| Protection against polarity inversions    | Yes                         | Yes                         |
| Status indicator                          | On LCD screen for CD and XD | On LCD screen for CD and XD |

#### Characteristics of relay outputs common to the entire range

|                                                    |                                                                                                                                                                                                                                                                   |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max. breaking voltage                              | 5 →30 V DC<br>24 →250 V AC                                                                                                                                                                                                                                        |
| Breaking current                                   | CB-CD-XD10-XB10-XR06-XR10 : 8 A<br>XD26-XB26 : 8 x 8 A relays, 2 x 5 A relays<br>XE10 : 4 x 5 A relays<br>XR14 : 4 x 8 A relays, 2 x 5 A relays<br>RBT (Removable Terminal Blocks) versions : verify the maximum current according to the type of connection used |
| Electrical durability for 500 000 operating cycles | Utilization category DC-12 : 24 V, 1.5 A<br>Utilization category DC-13 : 24 V (L/R = 10 ms), 0.6 A<br>Utilization category AC-12 : 230 V, 1.5 A<br>Utilization category AC-15 : 230 V, 0.9 A                                                                      |
| Max. Output Common Current                         | 12 A for O8, O9, OA                                                                                                                                                                                                                                               |
| Minimum switching capacity                         | 10 mA (at minimum voltage of 12 V)                                                                                                                                                                                                                                |
| Minimum load                                       | 12 V, 10 mA                                                                                                                                                                                                                                                       |
| Maximum rate                                       | Off load : 10 Hz<br>At operating current : 0.1 Hz                                                                                                                                                                                                                 |
| Mechanical life                                    | 10,000,000 (operations)                                                                                                                                                                                                                                           |
| Voltage for withstanding shocks                    | In accordance with IEC/EN 60947-1 and IEC/EN 60664-1 : 4 kV                                                                                                                                                                                                       |
| Off-cycle response time                            | Make 10 ms<br>Release 5 ms                                                                                                                                                                                                                                        |
| Built-in protections                               | Against short-circuits : None<br>Against overvoltages and overloads : None                                                                                                                                                                                        |
| Status indicator                                   | On LCD screen for CD and XD                                                                                                                                                                                                                                       |

#### Characteristics of product with DC power supplied

|                                        |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Supply</b>                          |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                  |
| Nominal voltage                        | 12 V DC                                                                                                                                                             | 24 V DC                                                                                                                                                                                                                                                                                                          |
| Operating limits                       | -13 % / +20 %<br>or 10.4 V DC→14.4 V DC (including ripple)                                                                                                          | -20 % / +25 %<br>or 19.2 V DC→30 V DC (including ripple)                                                                                                                                                                                                                                                         |
| Immunity from micro power cuts         | ≤ 1 ms (repetition 20 times)                                                                                                                                        | ≤ 1 ms (repetition 20 times)                                                                                                                                                                                                                                                                                     |
| Max. absorbed power                    | CB12 with solid state outputs : 1.5 W<br>CD12 : 1.5 W<br>CD20 : 2.5 W<br>XD26-XB26 : 3 W<br>XD26-XB26 with extension : 5 W<br>XD26 with solid state outputs : 2.5 W | CB12-CD12-CD20 with solid state outputs - XD10-XB10 with solid state outputs : 3 W<br>XD10-XB10 with relay outputs : 4 W<br>XD26-XB26 with solid state outputs : 5 W<br>CB20-CD20 with relay outputs : 6 W<br>XD26 with relay outputs : 6 W<br>XD10-XB10 with extension : 8 W<br>XD26-XB26 with extension : 10 W |
| Protection against polarity inversions | Yes                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                                                                              |

#### Digital inputs (I1 to IA and IH to IY)

|                                           |                                                                                                                                                                             |                                                                                                                                                                             |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input voltage                             | 12 V DC (-13 % / +20 %)                                                                                                                                                     | 24 V DC (-20 % / +25 %)                                                                                                                                                     |
| Input current                             | 3.9 mA @ 10.44 V DC<br>4.4 mA @ 12.0 V DC<br>5.3 mA @ 14.4 VDC                                                                                                              | 2.6 mA @ 19.2 V DC<br>3.2 mA @ 24 V DC<br>4.0 mA @ 30.0 VDC                                                                                                                 |
| Input impedance                           | 2.7 kΩ                                                                                                                                                                      | 7.4 kΩ                                                                                                                                                                      |
| Logic 1 voltage threshold                 | ≥ 7 V DC                                                                                                                                                                    | ≥ 15 V DC                                                                                                                                                                   |
| Making current at logic state 1           | ≥ 2 mA                                                                                                                                                                      | ≥ 2.2 mA                                                                                                                                                                    |
| Logic 0 voltage threshold                 | ≤ 3 V DC                                                                                                                                                                    | ≤ 5 V DC                                                                                                                                                                    |
| Release current at logic state 0          | < 0.9 mA                                                                                                                                                                    | < 0.75 mA                                                                                                                                                                   |
| Response time                             | 1 →2 cycle times + 6 ms                                                                                                                                                     | 1 →2 cycle times + 6 ms                                                                                                                                                     |
| Maximum counting frequency                | Inputs I1 & I2 : FBD (up to 6 k Hz) & Ladder (1 k Hz)<br>Inputs I3 to IA & IH to IY : In accordance with cycle time (Tc) and input response time (Tr) : 1/ ( (2 x Tc) + Tr) | Inputs I1 & I2 : FBD (up to 6 k Hz) & Ladder (1 k Hz)<br>Inputs I3 to IA & IH to IY : In accordance with cycle time (Tc) and input response time (Tr) : 1/ ( (2 x Tc) + Tr) |
| Sensor type                               | Contact or 3-wire PNP                                                                                                                                                       | Contact or 3-wire PNP                                                                                                                                                       |
| Conforming to IEC/EN 61131-2              | Type 1                                                                                                                                                                      | Type 1                                                                                                                                                                      |
| Input type                                | Resistive                                                                                                                                                                   | Resistive                                                                                                                                                                   |
| Isolation between power supply and inputs | None                                                                                                                                                                        | None                                                                                                                                                                        |
| Isolation between inputs                  | None                                                                                                                                                                        | None                                                                                                                                                                        |
| Protection against polarity inversions    | Yes                                                                                                                                                                         | Yes                                                                                                                                                                         |
| Status indicator                          | On LCD screen for CD and XD                                                                                                                                                 | On LCD screen for CD and XD                                                                                                                                                 |

#### Analogue or digital inputs (IB to IY)

|                     |                 |                 |
|---------------------|-----------------|-----------------|
| CB12-CD12-XD10-XB10 | 4 inputs IB →IE | 4 inputs IB →IE |
| CB20-CD20-XB26-XD26 | 6 inputs IB →IG | 6 inputs IB →IG |

#### Inputs used as analogue inputonly in FBD

|                          |                                  |                                  |
|--------------------------|----------------------------------|----------------------------------|
| Measurement range        | (0 →10 V) or (0 →V power supply) | (0 →10 V) or (0 →V power supply) |
| Input impedance          | 14 kΩ                            | 12 kΩ                            |
| Input voltage            | 14.4 V DC max.                   | 30 V DC max.                     |
| Value of LSB             | 14 mV                            | 29 mV                            |
| Input type               | Common mode                      | Common mode                      |
| Resolution               | 10 bit at max. input voltage     | 10 bit at max. input voltage     |
| Conversion time          | Controller cycle time            | Controller cycle time            |
| Accuracy at 25 °C        | ± 5 %                            | ± 5 %                            |
| Accuracy at 55 °C        | ± 6.2 %                          | ± 6.2 %                          |
| Repeat accuracy at 55 °C | ± 2 %                            | ± 2 %                            |

|                                                     |                                                         |                                                         |
|-----------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|
| Isolation between analogue channel and power supply | None                                                    | None                                                    |
| Cable length                                        | 10 m maximum, with shielded cable (sensor not isolated) | 10 m maximum, with shielded cable (sensor not isolated) |
| Protection against polarity inversions              | Yes                                                     | Yes                                                     |
| Potentiometer control                               | 2.2 kΩ/0.5 W (recommended)<br>10 kΩ max.                | 2.2 kΩ/0.5 W (recommended)<br>10 kΩ max.                |

#### Inputs used as digital inputs

|                                           |                                                                                          |                                                                                          |
|-------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Input voltage                             | 12 V DC (-13 % / +20 %)                                                                  | 24 V DC (-20 % / +25 %)                                                                  |
| Input current                             | 0.7 mA @ 10.44 VDC<br>0.9 mA @ 12.0 VDC<br>1.0 mA @ 14.4VDC                              | 1.6 mA @ 19.2 VDC<br>2.0 mA @ 24.0 V DC<br>2.5 mA @ 30.0 VDC                             |
| Input impedance                           | 14 kΩ                                                                                    | 12 kΩ                                                                                    |
| Logic 1 voltage threshold                 | ≥ 7 V DC                                                                                 | ≥ 15 VDC                                                                                 |
| Making current at logic state 1           | ≥ 0.5 mA                                                                                 | ≥ 1.2 mA                                                                                 |
| Logic 0 voltage threshold                 | ≤ 3 V DC                                                                                 | ≤ 5 V DC                                                                                 |
| Release current at logic state 0          | ≤ 0.2 mA                                                                                 | ≤ 0.5 mA                                                                                 |
| Response time                             | 1 →2 cycle times                                                                         | 1 →2 cycle times                                                                         |
| Maximum counting frequency in FBD         | In accordance with cycle time (Tc) and input response time (Tr) :<br>1/ ( (2 x Tc) + Tr) | In accordance with cycle time (Tc) and input response time (Tr) :<br>1/ ( (2 x Tc) + Tr) |
| Sensor type                               | Contact or 3-wire PNP                                                                    | Contact or 3-wire PNP                                                                    |
| Conforming to IEC/EN 61131-2              | Type 1                                                                                   | Type 1                                                                                   |
| Input type                                | Resistive                                                                                | Resistive                                                                                |
| Isolation between power supply and inputs | None                                                                                     | None                                                                                     |
| Isolation between inputs                  | None                                                                                     | None                                                                                     |
| Protection against polarity inversions    | Yes                                                                                      | Yes                                                                                      |
| Status indicator                          | On LCD screen for CD and XD                                                              | On LCD screen for CD and XD                                                              |

#### Characteristics of relay outputs common to the entire range

|                                                    |                                                                                                                                                                                              |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max. breaking voltage                              | 5 →30 V DC<br>24 →250 V AC                                                                                                                                                                   |
| Max. Output Common Current                         | 12A (10A UL) for O8, O9, OA                                                                                                                                                                  |
| Breaking current                                   | CB-CD-XD10-XB10-XR06-XR10 : 8 A<br>XD26-XB26 : 8 x 8 A relays, 2 x 5 A relays<br>XE10 : 4 x 5 A relays<br>XR14 : 4 x 8 A relays, 2 x 5 A relays                                              |
| Electrical durability for 500 000 operating cycles | Utilization category DC-12 : 24 V, 1.5 A<br>Utilization category DC-13 : 24 V (L/R = 10 ms), 0.6 A<br>Utilization category AC-12 : 230 V, 1.5 A<br>Utilization category AC-15 : 230 V, 0.9 A |
| Minimum switching capacity                         | 10 mA (at minimum voltage of 12 V)                                                                                                                                                           |
| Minimum load                                       | 12 V, 10 mA                                                                                                                                                                                  |
| Maximum rate                                       | Off load : 10 Hz<br>At operating current : 0.1 Hz                                                                                                                                            |
| Mechanical life                                    | 10,000,000 (operations)                                                                                                                                                                      |
| Voltage for withstanding shocks                    | In accordance with IEC/EN 60947-1 and IEC/EN 60664-1 : 4 kV                                                                                                                                  |
| Off-cycle response time                            | Make 10 ms<br>Release 5 ms                                                                                                                                                                   |
| Built-in protections                               | Against short-circuits : None<br>Against overvoltages and overloads : None                                                                                                                   |
| Status indicator                                   | On LCD screen for CD and XD                                                                                                                                                                  |

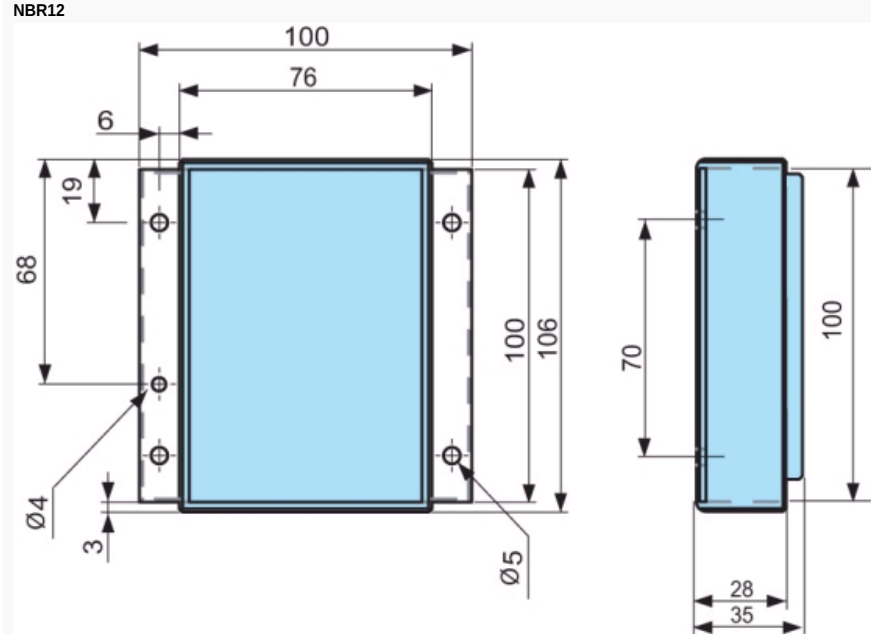
#### Digital / PWM solid state output

|                                                  |                                                                                                                                                                                                                        |                                                                                                                                                                                                                        |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PWM solid state output*                          | CB12 : O4<br>XD26 : O4 →O7                                                                                                                                                                                             | CD12-XD10-XB10 : O4<br>CD20-XD26-XB26 : O4 →O7                                                                                                                                                                         |
| * Only available with "FBD" programming language | * Only available with "FBD" programming language                                                                                                                                                                       |                                                                                                                                                                                                                        |
| Breaking voltage                                 | 10.4 →30 V DC                                                                                                                                                                                                          | 19.2 →30 V DC                                                                                                                                                                                                          |
| Nominal voltage                                  | 12-24 VDC                                                                                                                                                                                                              | 24 V DC                                                                                                                                                                                                                |
| Nominal current                                  | 0.5 A                                                                                                                                                                                                                  | 0.5 A                                                                                                                                                                                                                  |
| Max. breaking current                            | 0,625 A                                                                                                                                                                                                                | 0,625 A                                                                                                                                                                                                                |
| Voltage drop                                     | ≤ 2 V for I = 0.5 A (at state 1)                                                                                                                                                                                       | ≤ 2 V for I = 0.5 A (at state 1)                                                                                                                                                                                       |
| Response time                                    | Make ≤ 1 ms<br>Release ≤ 1 ms                                                                                                                                                                                          | Make ≤ 1 ms<br>Release ≤ 1 ms                                                                                                                                                                                          |
| Operating frequency                              | 1 Maximum on inductive load                                                                                                                                                                                            | 1 Maximum on inductive load                                                                                                                                                                                            |
| Built-in protections                             | Against overloads and short-circuits : Yes<br>Against overvoltages (*) : Yes<br>Against inversions of power supply : Yes<br>(*) In the absence of a volt-free contact between the logic controller output and the load | Against overloads and short-circuits : Yes<br>Against overvoltages (*) : Yes<br>Against inversions of power supply : Yes<br>(*) In the absence of a volt-free contact between the logic controller output and the load |
| Min. load                                        | 1 mA                                                                                                                                                                                                                   | 1 mA                                                                                                                                                                                                                   |
| Maximum incandescent load                        | 0,2 A / 12 V DC<br>0,1 A / 24 V DC                                                                                                                                                                                     | 0,1 A / 24 V DC                                                                                                                                                                                                        |
| Galvanic isolation                               | No                                                                                                                                                                                                                     | No                                                                                                                                                                                                                     |
| PWM frequency                                    | 14.11 Hz<br>56.45 Hz<br>112.90 Hz<br>225.80 Hz<br>451.59 Hz<br>1806.37 Hz                                                                                                                                              | 14.11 Hz<br>56.45 Hz<br>112.90 Hz<br>225.80 Hz<br>451.59 Hz<br>1806.37 Hz                                                                                                                                              |
| PWM cyclic ratio                                 | 0 →100 % (256 steps for CD, XD and 1024 steps for XA)                                                                                                                                                                  | 0 →100 % (256 steps for CD, XD and 1024 steps for XA)                                                                                                                                                                  |
| Max. Breaking current PWM                        | 50 mA                                                                                                                                                                                                                  | 50 mA                                                                                                                                                                                                                  |
| Max. cable length PWM                            | 20 m                                                                                                                                                                                                                   | 20 m                                                                                                                                                                                                                   |
| PWM accuracy at 120 Hz                           | < 5 % (20 % →80 %) load at 10 mA                                                                                                                                                                                       | < 5 % (20 % →80 %) load at 10 mA                                                                                                                                                                                       |
| PWM accuracy at 500 Hz                           | < 10 % (20 % →80 %) load at 10 mA                                                                                                                                                                                      | < 10 % (20 % →80 %) load at 10 mA                                                                                                                                                                                      |
| Status indicator                                 | On LCD screen for XD                                                                                                                                                                                                   | On LCD screen for CD and XD                                                                                                                                                                                            |

Accessories

| Type    | Description                                                                      | Code     |
|---------|----------------------------------------------------------------------------------|----------|
| M3 Soft | Multilingual programming software containing specific library functions (CD-ROM) | 88970111 |
| PA      | 1.80 m serial link cable : DB9 M / DB9 F                                         | 88970123 |
| PA      | PC : USB →DB9 (RS 232) link cable                                                | 88950105 |
| MA      | Removable connector (spring cage) kit for NBR12, CD12 RBT                        | 88970313 |

Dimensions (mm)



mm

Product adaptations

- 40 cm wire
- Extended power supply range (9 →18 VDC), (16 →36 VDC)
- Remote polyester keyboard
- UL, CSA, GL certification
- Integration of all available electrical functions in the catalogue (e.g. : Bluetooth® module, Pt100 input, 0-20 mA input, 0-10 V power output, etc)
- Changing the number of I/O

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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