# The Essential Guide of Relays, Nano PLCs, Power Supplies, Interfaces and I/O

Schneider Electric

# The go to guide

## for the most efficient selection

Make the most of your energy℠

# General contents

# Automation

## Zelio

### Relays and smart relays

**Zelio relay range**
Zelio Relay plug-in relays, Zelio Control control and measurement relays, Zelio Count counters, Zelio Time timing relays: These ranges offer ***compactness*** and ***simplicity.***

**Zelio Logic smart relays**
Designed for management of simple automation systems comprising 10 to 40 I/O. Compact or modular, Zelio Logic offers ***flexibility*** and ***simplicity.***

## Twido

### Programmable controllers

**Twido,** ideal for simple installations and small machines: standard applications comprising 10 to 100 I/O (max. 252 I/O). Compact or modular, Twido offers ***flexibility*** and ***simplicity.***

# Contents

## Relays



## Twido Programmable controllers

# Plug-in relays
## Interface and miniature relays

1

| Type of relay | | | Interface relays RSB | | | Miniature relays RXM | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Contact characteristics** | | | | | | | | | |
| **Thermal current Ith in A (temperature ≤ 55°C)** | | | 8 | 12 | 16 | 12 | 10 | 6 | 3 |
| **Number of contacts** | | | 2 "C/O" | 1 "C/O" | 1 "C/O" | 2 "C/O" | 3 "C/O" | 4 "C/O" | 4 "C/O" |
| **Contact material** | | | AgNi | AgNi | AgNi | AgNi | AgNi | AgNi | AgAu |
| **Switching voltage, min. / max.** | | | 5 / 250 VAC/DC | | | 12 / 250 VAC/DC | | | |
| **Switching capacity, min. / max. (mA / VA)** | | | 5 / 2000 | 5 / 3000 | 5 / 4000 | 10 / 3000 | 10 / 2500 | 10 / 1500 | 2 / 1500 |
| **Coil characteristics** | | | | | | | | | |
| **Average consumption, inrush,** | | | 0.75 VA / 0.45 W | | | 1.2 VA / 0.9 W | | | |
| **Permissible voltage variation** | | | 0.8/0.85…1.1 Un (50/ 60Hz or =) | | | 0.8…1.1 Un (50 / 60Hz or =) | | | |
| **References** | | | (1) | (1) | (1) | (2) | (2) | (2) | |
| | **Coil supply voltage** | 6 VDC | **RSB2A080RD** | **RSB1A120RD** | **RSB1A160RD** | – | – | – | – |
| | **on DC** | 12 VDC | **RSB2A080JD** | **RSB1A120JD** | **RSB1A160JD** | **RXM2AB2JD** | **RXM3AB2JD** | **RXM4AB2JD** | **RXM4GB2JD** |
| | | 24 VDC | **RSB2A080BD** | **RSB1A120BD** | **RSB1A160BD** | **RXM2AB2BD** | **RXM3AB2BD** | **RXM4AB2BD** | **RXM4GB2BD** |
| | | 48 VDC | **RSB2A080ED** | **RSB1A120ED** | **RSB1A160ED** | **RXM2AB2ED** | **RXM3AB2ED** | **RXM4AB2ED** | **RXM4GB2ED** |
| | | 60 VDC | **RSB2A080ND** | **RSB1A120ND** | **RSB1A160ND** | – | – | – | – |
| | | 110 VDC | **RSB2A080FD** | **RSB1A120FD** | **RSB1A160FD** | **RXM2AB2FD** | **RXM3AB2ED** | **RXM4AB2ED** | **RXM4GB2ED** |
| | **Coil supply voltage** | 24 VAC | **RSB2A080B7** | **RSB1A120B7** | **RSB1A160B7** | **RXM2AB2B7** | **RXM3AB2B7** | **RXM4AB2B7** | **RXM4GB2B7** |
| | **on AC** | 48 VAC | **RSB2A080E7** | **RSB1A120E7** | **RSB1A160E7** | **RXM2AB2E7** | **RXM3AB2E7** | **RXM4AB2E7** | **RXM4GB2E7** |
| | | 120 VAC | **RSB2A080F7** | **RSB1A120F7** | **RSB1A160F7** | **RXM2AB2F7** | **RXM3AB2F7** | **RXM4AB2F7** | **RXM4GB2F7** |
| | | 220 VAC | **RSB2A080M7** | **RSB1A120M7** | **RSB1A160M7** | – | – | – | – |
| | | 230 VAC | **RSB2A080P7** | **RSB1A120P7** | **RSB1A160P7** | **RXM2AB2P7** | **RXM3AB2P7** | **RXM4AB2P7** | **RXM4GB2P7** |
| | | 240 VAC | **RSB2A080U7** | **RSB1A120U7** | **RSB1A160U7** | – | – | – | **RXM4GB2U7** |

## Sockets for relays

| Type of socket | | | For interface relays RSB | | | For miniature relays RXM | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Mixed input/output type sockets with location for protection module** | | | | | | | | | |
| | | | – | – | – | **RXZE2M114** (5) | – | **RXZE2M114** | **RXZE2M114** |
| | | | – | – | – | **RXZE2M114M** (5) | – | **RXZE2M114M** | **RXZE2M114M** |
| **Separate input/output type sockets with location for protection module** | | | | | | | | | |
| | | | **RSZE1S48M** | **RSZE1S35M** | **RSZE1S48M** (3) | **RXZE2S108M** | **RXZE2S111M** | **RXZE2S114M** | **RXZE2S114M** |
| **Protection modules** | | | | | | | | | |
| | **Diode** | 6…230 VDC | **RZM040W** | | | **RXM040W** | | | |
| | **RC circuit** | 24…60 VAC | **RZM041BN7** | | | **RXM041BN7** | | | |
| | | 110…240 VAC | **RZM041FU7** | | | **RXM041FU7** | | | |
| | **Varistor** | 6…24 VDC or AC | **RZM021RB** (6) | | | **RXM021RB** | | | |
| | | 24…60 VDC or AC | **RZM021BN** (6) | | | **RXM021BN** | | | |
| | | 110…230 VDC or AC | **RZM021FP** (6) | | | **RXM021FP** | | | |
| | | 24 VDC or AC | – | | | – | | | |
| | | 240 VDC or AC | – | | | – | | | |
| | **Multifunction timer module** | 24…230 VDC or AC | – | | | – | | | |
| **Accessories** | | | | | | | | | |
| **Plastic maintaining clamp** | | | **RSZR215** | | | **RXZR335** | | | |
| **Metal maintaining clamp** | | | – | | | **RXZ400** | | | |
| **Label for socket** | | | **RSZL300** | | | **RXZL420** (except RXZE2M114) | | | |
| **Bus jumper** | | 2 poles | – | | | **RXZS2** | | | |
| **DIN rail adapter** | | | – | | | **RXZE2DA** | | | |
| **Panel mounting adapter** | | | – | | | **RXZE2FA** | | | |

*(1) References for relays without socket, for relays with socket, add the letter S to the end of the selected reference. (Example: RSB2A080B7 becomes RSB2A080B7S).*

*(2) References for relays with LED, for relays without LED, replace the number 1 in the reference by 2. (Example: RXM2AB2JD becomes RXM2AB1JD).*

*(3) To use RSB 1A160 ●● relay with socket, terminals must be interconnected.*



Other versions: **please consult your Schneider Electric agency.**

# Zelio Relay

## Plug-in relays
### Universal and power relays

1

| | Universal relays RUM | | | | | Power relays RPM | | | | RPF | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cylindrical/Octal | | | Faston | | | | | | | |
| | 10 | 10 | 3 | 10 | 10 | 15 | 15 | 15 | 15 | 30 (4) | 30 (4) |
| | 2 “C/O” | 3 “C/O” | 3 “C/O” | 2 “C/O” | 3 “C/O” | 1 “C/O” | 2 “C/O” | 3 “C/O” | 4 “C/O” | 2 “N/O” | 2 “C/O” |
| | AgNi | AgNi | AgAu | AgNi | AgNi | AgNi | AgNi | AgNi | AgNi | $AgSnO_2$ | $AgSnO_2$ |
| | 12 / 250 VAC/DC | | | | | 12 / 250 VAC/DC | | | | 12 / 250 VAC/DC | |
| | 10 / 2500 | 10 / 2500 | 3 / 750 | 10 / 2500 | 10 / 2500 | 100 / 3750 | 100 / 3750 | 100 / 3750 | 100 / 3750 | 100 / 7200 | 100 / 7200 |
| | 2…3 VA / 1.4 W | | | | | 0.9 VA / 0.7 W | 1.2 VA / 0.9 W | 1.5 VA / 1.7 W | 1.5 VA / 2 W | 4 VA / 1.7 W | |
| | | | | | | | | | | | |
| | (2) | (2) | – | (2) | (2) | (2) | (2) | (2) | (2) | – | – |
| | – | – | – | – | – | – | – | – | – | – | – |
| | **RUMC2AB2JD** | **RUMC3AB2JD** | **–** | **RUMF2AB2JD** | **RUMF3AB2JD** | **RPM12JD** | **RPM22JD** | **RPM32JD** | **RPM42JD** | **RPF2AJD** | **RPF2BJD** |
| | **RUMC2AB2BD** | **RUMC3AB2BD** | **RUMC3GB2BD** | **RUMF2AB2BD** | **RUMF3AB2BD** | **RPM12BD** | **RPM22BD** | **RPM32BD** | **RPM42BD** | **RPF2ABD** | **RPF2BBD** |
| | **RUMC2AB2ED** | **RUMC3AB2ED** | **RUMC3GB2ED** | **RUMF2AB2ED** | **RUMF3AB2ED** | **RPM12ED** | **RPM22ED** | **RPM32ED** | **RPM42ED** | **–** | **–** |
| | – | – | – | – | – | – | – | – | – | – | – |
| | **RUMC2AB2FD** | **RUMC3AB2FD** | **–** | **RUMF2AB2FD** | **RUMF3AB2FD** | **RPM12FD** | **RPM22FD** | **RPM32FD** | **RPM42FD** | **RPF2AFD** | **RPF2BFD** |
| | **RUMC2AB2B7** | **RUMC3AB2B7** | **RUMC3GB2B7** | **RUMF2AB2B7** | **RUMF3AB2B7** | **RPM12B7** | **RPM22B7** | **RPM32B7** | **RPM42B7** | **RPF2AB7** | **RPF2BB7** |
| | **RUMC2AB2E7** | **RUMC3AB2E7** | **RUMC3GB2E7** | **RUMF2AB2E7** | **RUMF3AB2E7** | **RPM12E7** | **RPM22E7** | **RPM32E7** | **RPM42E7** | **–** | **–** |
| | **RUMC2AB2F7** | **RUMC3AB2F7** | **RUMC3GB2F7** | **RUMF2AB2F7** | **RUMF3AB2F7** | **RPM12F7** | **RPM22F7** | **RPM32F7** | **RPM42F7** | **RPF2AF7** | **RPF2BF7** |
| | – | – | – | – | – | – | – | – | – | – | – |
| | **RUMC2AB2P7** | **RUMC3AB2P7** | **RUMC3GB2P7** | **RUMF2AB2P7** | **RUMF3AB2P7** | **RPM12P7** | **RPM22P7** | **RPM32P7** | **RPM42P7** | **RPF2AP7** | **RPF2BP7** |
| | – | – | – | – | – | – | – | – | – | – | – |

| | For universal relays RUM | | | | | For power relays RPM | | | | For power relays RPF |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | **RUZC2M** | **RUZC3M** | **RUZC3M** | **–** | **–** | **RPZF1** | **RPZF2** | **RPZF3** | **RPZF4** | **–** |
| | – | – | – | – | – | – | – | – | – | – |
| | | | | | | | | | | |
| | **RUZSC2M** | **RUZSC3M** | **RUZSC3M** | **RUZSF3M** | **RUZSF3M** | **–** | **–** | **–** | **–** | **–** |
| | | | | | | 1 and 2 poles | | 3 and 4 poles | | |
| | **RUW240BD** | | | | | **RXM040W** | | **RUW240BD** | | **–** |
| | **–** | | | | | **RXM041BN7** | | **–** | | **–** |
| | **RUW241P7** | | | | | **RXM041FU7** | | **RUW241P7** | | **–** |
| | **–** | | | | | **RXM021RB** | | **–** | | **–** |
| | **–** | | | | | **RXM021BN** | | **–** | | **–** |
| | **–** | | | | | **RXM021FP** | | **–** | | **–** |
| | **RUW242B7** | | | | | **RUW242B7** | | **–** | | **–** |
| | **RUW242P7** | | | | | **–** | | **RUW242P7** | | **–** |
| | **RUW101MW** | | | | | **–** | | **RUW101MW** | | **–** |
| | | | | | | | | | | |
| | **–** | | | | | **–** | | | | **–** |
| | **RUZC200** | | | | | **RPZF1** (for 1 pole relays) | | | | **–** |
| | **RUZL420** | | | | | **–** | | | | **–** |
| | **RUZS2** | | | | | **–** | | | | **–** |
| | **–** | | | | | **RPZ1DA** | **RXZE2DA** | **RPZ3DA** | **RPZ4DA** | **–** |
| | **–** | | | | | **RPZ1FA** | **RXZE2FA** | **RPZ3FA** | **RPZ4FA** | **–** |

*(4) 30A with 13 mm space between relays; 25 A when relay mounting side by side.*

*(5) Max 10 A operating.*

*(6) With LED.*

# Analog Interface

## Universal Thermocouple

| Type | Thermocouple | | | | |
|---|---|---|---|---|---|
| Temperature range | 0…150 °C<br>32…302 °F | 0…300 °C<br>32…572 °F | 0…600 °C<br>32…1112 °F | 0…600 °C<br>32…1112 °F | 0…1200 °C<br>32…2192 °F |
| Output range | 0…10 V / 0…20 mA - 4…20 mA Switchable | | | | |
| Dimensions H x W x D | 80 x 22,5 x 80 mm | | | | |
| Voltage | 24 VDC - Non isolated | | | | |
| References | **RMTJ40BD** | **RMTJ60BD** | **RMTJ80BD** | **RMTK80BD** | **RMTK90BD** |

## Universal PT 100

| Type | PT 100 | | | | |
|---|---|---|---|---|---|
| Temperature range | -40…40 °C<br>-40…104 °F | -100…100 °C<br>-148…212 °F | 0…100 °C<br>32…212 °F | 0…250 °C<br>32…482 °F | 0…500 °C<br>32…932 °F |
| Output range | 0…10 V / 0…20 mA - 4…20 mA Switchable | | | | |
| Dimensions H x W x D | 80 x 22,5 x 80 mm | | | | |
| Voltage | 24 VDC - Non isolated | | | | |
| References | **RMPT10BD** | **RMPT20BD** | **RMPT30BD** | **RMPT50BD** | **RMPT70BD** |



Other versions: **please consult your Schneider Electric agency.**

# Analog Interface

## Optimum PT 100



| Type | PT 100 | | | | |
|---|---|---|---|---|---|
| Temperature range | -40…40 °C<br>-40…104 °F | -100…100 °C<br>-148…212 °F | 0…100 °C<br>32…212 °F | 0…250 °C<br>32…482 °F | 0…500 °C<br>32…932 °F |
| Output range | 0…10 V | | | | |
| Dimensions H x W x D | 80 x 22,5 x 80 mm | | | | |
| Voltage | 24 VDC - Non isolated | | | | |
| References | **RMPT13BD** | **RMPT23BD** | **RMPT33BD** | **RMPT53BD** | **RMPT73BD** |

## Universal Analog Converter

| Type | Analog Converter | | | |
|---|---|---|---|---|
| Input range | 0…10 V or 4…20 mA | 0…10 V / -10…+10 V<br>0…20 mA<br>4…20 mA | 0…50 V / 0…300 V<br>0…500 V | 0…1,5 A / 0…5 A<br>0…15 A |
| Output range | 0…10 V or 4…20 mA | 0…10 V / -10…+10 V<br>0…20 mA<br>4…20 mA Switchable | 0…10 V<br>0…20 mA<br>4…20 mA Switchable | 0…10 V or 0…20 mA<br>ou 4…20 mA |
| Dimensions H x W x D | 80 x 22,5 x 80 mm | | | 80 x 45 x 80 mm |
| Voltage | 24 VDC - Non isolated | 24 VDC - Isolated | 24 VDC - Isolated | 24 VDC - Isolated |
| References | **RMCN22BD** | **RMCL55BD** | **RMCV60BD** | **RMCA61BD** |

1

## 3-phase monitoring relays




| Function | presence of phase +phase sequence | | +phase sequence, +regeneration +phase unbalance, +under/over voltage | |
|---|---|---|---|---|
| Monitoring voltage range | 208…480 VAC | 208…440 VAC | 208…480 VAC | 220 … 440 VAC |
| Outputs | 1 C/O | 2 C/O | 1 C/O | 2 C/O |
| References | **RM17TG00** | **RM17TG20** | **RM17TE00** | **RM35TF30** |


| Function | presence of phase +under/over voltage | | +presence of neutral +under/over voltage |
|---|---|---|---|
| Monitoring voltage range | 208…480 VAC | 220…480 VAC | 120…277 VAC (phase-neutral) |
| Outputs | 1 C/O | 2 C/O | 2 C/O |
| References | **RM17UB310** | **RM35UB330** | **RM35UB3N30** |

## Level / Speed monitoring relays



| Function | Conductive liquid level monitoring | Non-conductive material level monitoring | Over/under Speed monitoring |
|---|---|---|---|
| Power supply | 24…240 VAC/DC | | |
| Monitoring range | 0,25…5 KΩ<br>5…100 KΩ<br>0,05…1 MΩ | Input of sensor :<br>Contact / PNP / NPN | Interval between pulses:<br>0.05…0.5 s, 0.1…1 s, 0.5…5 s<br>1…10 s, 0.1…1 mn, 0.5…5 mn<br>1…10 mn |
| Output | 2 C/O | 1 C/O | 1 C/O |
| Reference | **RM35LM33MW** | **RM35LV14MW** | **RM35S0MW** |

# Relays

## Current / Voltage /Frequency monitoring relays



| Function | Voltage Monitoring<br>Under or Over Voltage | | |
|---|---|---|---|
| **Power Supply** | 24…240 VAC/DC 50/60Hz | | |
| **Monitoring range** | 0.05…0.5 V<br>0.3…3 V<br>0.5…5 V | 1…10 V<br>5…50 V<br>10…100 V | 15…150 V<br>30…300 V<br>60…600 V |
| **Outputs** | 2 C/O | 2 C/O | 2 C/O |
| **References** | **RM35UA11MW** | **RM35UA12MW** | **RM35UA13MW** |

| Function | Voltage Monitoring<br>Under or Over Voltage | | | Under and Over Voltage | |
|---|---|---|---|---|---|
| **Power Supply** | self powered | | | self powered | |
| **Monitoring range** | 9…15 VDC | 20…80 VAC/DC | 65…260 VAC/DC | 20…80 VAC/DC | 65…260 VAC/DC |
| **Outputs** | 1 C/O | 1 C/O | 1 C/O | 1 C/O | 1 C/O |
| **References** | **RM17UAS14** | **RM17UAS16** | **RM17UAS15** | **RM17UBE16** | **RM17UBE15** |

| Function | Current Monitoring<br>over curent | over or under current | | Frequency Monitoring<br>Over or under frequency |
|---|---|---|---|---|
| **Power supply** | 24…240 VAC/DC | 24…240 VAC/DC 50/60 Hz | | 120…277 VAC 50/60 Hz |
| **Monitoring range** | 2…20 A<br>built-in CT | 2…20 mA<br>10…100 mA<br>50…500 mA | 0.15…1.5 A<br>0.5…5 A<br>1.5…15 A | 50 Hz ± 10 Hz<br>or<br>60 Hz ± 10Hz |
| **Output** | 1 C/O | 2 C/O | 2 C/O | 2 C/O |
| **Reference** | **RM17JC00MW** | **RM35JA31MW** | **RM35JA32MW** | **RM35HZ21FM** |

# Lift / Pump / Motor monitoring relays



| Function | Lift motor room temperature monitoring | | |
|---|---|---|---|
| | | | +phase presence<br>+phase sequence |
| **Power supply** | 24…240 VAC/DC 50/60Hz | | |
| **Monitoring range** | input PT100 3 wires<br>Under -1…+11 °C<br>Over +34…+46 °C | | 208…480 VAC 50/60Hz<br>input PT100 3 wires<br>Under -1…+11 °C<br>Over +34…+46 °C |
| **Output** | 1 C/O | 2 NO | 2 C/O |
| **Reference** | **RM35ATL0MW** | **RM35ATR5MW** | **RM35ATW5MW** |

| Function | Pump protection<br>Current monitor<br>+3 phase monitor | Motor Protection<br>Winding Temperature monitor<br>+3 phase monitor | |
|---|---|---|---|
| **Power supply** | self powered<br>(single phase :230 VAC 50/60 Hz) | 24…240 VAC/DC | |
| **Monitoring range** | Current: 0.1…10 A<br>Voltage (three phase):<br>208…480 VAC 50/60Hz | Winding Temperature: PTC sensor<br>Three phase voltage: 208…480 VAC 50/60Hz | |
| **Output** | 1 C/O | 2 NO | 2 NO |
| **Reference** | **RM35BA10** | **RM35TM50MW** | **RM35TM250MW** |



Other versions: **please consult your Schneider Electric agency.**

# Relays

## Control relays for 3-phase supplies



| Function | Rotational direction and presence of phases | | | | | | |
|---|---|---|---|---|---|---|---|
| | | + Undervoltage | + Over and undervoltage | | + Asymmetry | | +Asymmetry + undervoltage |
| Adjustable time delay | without | without | 0.1…10 s | 0.1…10 s | fixed, 0.5 s | 0.1…10 s | without |
| Supply voltage | 220…440V | 380…440V | 400V | 380…440V | 380…440V | 380…440V | 600V |
| Output | 2 C/O | 2 C/O | 2 C/O | 2 C/O | 1 C/O | 2 C/O | 2 C/O |
| References | **RM4TG20** | **RM4TU02** | **RM4TR34** (1) | **RM4TR32** (2) | **RM4TA02** | **RM4TA32** | **8430MPDV32** (5) |

*(1) Relay with fixed voltage thresholds.*

*(2) Relay with adjustable voltage thresholds.*

*(5) Part of our Square D line of control relays.*

## Current and voltage measurement relays

**TABLE 1**

| Voltage | VAC, 50/60 Hz | VDC |
|---|---|---|
| 24…240 V | MW | MW |
| 110…130 V | F | – |
| 220…240 V | M | – |
| 380…415 V | Q | – |

| Function | Detection of over and undercurrent | | over and undercurrent | | | |
|---|---|---|---|---|---|---|
| Measuring range | 3…30 mA<br>10…100 mA<br>0.1…1 A | 0.3…1.5 A<br>1…5 A<br>3…15 A | 0.05 …0.5 V<br>0.3 …3 V<br>0.5…5 V | 1…10 V<br>5…50 V<br>10…100 V | 30…300 V<br>50…500 V | 180…270 V |
| Adjustable time delay | 0.05…30 s | 0.05…30 s | 0.05…30 s | 0.05…30 s | 0.05…30 s | 0.1…10 s |
| Output | 2 C/O | 2 C/O | 2 C/O | 2 C/O | 2 C/O | 2 C/O |
| References | **RM4JA31●●** (3) | **RM4JA32●●** (3) | **RM4UA31●●** (3) | **RM4UA32●●** (3) | **RM4UA33●●** (3) | **RM4UB35** |

*(3) Basic reference. To be completed with the letters indicating the required voltage, as shown in Table 1.*

## Liquid level control relays

**TABLE 2**

| Voltage | RM4-LG01 | RM4-LA32 | |
|---|---|---|---|
| | VAC, 50/60 Hz | VAC, 50/60 Hz | VDC |
| 24 V | B | B | – |
| 24…240 V | – | MW | MW |
| 110…130 V | F | F | – |
| 220…240 V | M | M | – |
| 380…415 V | Q | Q | – |

| Control relays | Empty or fill | |
|---|---|---|
| Sensitivity scale | 5 ... 100 kΩ | 0.25 ... 5 kΩ<br>2.5 ... 50 kΩ<br>25 ... 500 kΩ |
| Time delay | without | adjustable, 0.1 to 10 s |
| Output | 1 C/O | 2 C/O |
| References | **RM4LG01●** (4) | **RM4LA32●●** (4) |

*(4) Basic reference. To be completed with the letters indicating the required voltage, as shown in Table 2.*

| Liquid level control probe type | Measuring electrode and reference electrode | 1 simple stainless steel electrode in PVC protective casing |
|---|---|---|
| Mounting | suspended | suspended |
| Maximum operating temperature | 100°C | 100°C |
| References | **LA9RM201** | **RM79696043** |

# Zelio Count — Counters

## Totalisers





| Display | Mechanical | | | | LCD |
|---|---|---|---|---|---|
| **Supply voltage** | 24 VDC | | | | Battery |
| **Number of digits displayed** | 5 | 6 | 6 | 8 | 8 |
| **Counting frequency** | 20 Hz | 10 Hz | 25 Hz | 25 Hz | 7.5 kHz |
| **Type of zero reset** | Manual | Without | Manual | Without | Manual (1) |
| **Front face dimensions, W x H** | 41.5 x 31 mm | 30 x 20 mm | 60 x 50 mm | 60 x 50 mm | 48 x 24 mm |
| **References** | **XBKT50000U10M** | **XBKT60000U00M** | **XBKT60000U10M** | **XBKT80000U00M** | **XBKT81030U33E** |

*(1) With electrical interlocking.*


| Display | Mechanical | | LCD | | | |
|---|---|---|---|---|---|---|
| **Supply voltage** | 115 V | 115 V | Battery | | | |
| **Number of digits displayed** | 5 | 6 | 8 | 6 | 6 | 8 |
| **Counting frequency** | 10 | 10 | 10 Hz | 25 Hz | 25 Hz | 7.5 kHz |
| **Type of input** | Contact | Contact | Voltage | Contact/Solid state | Voltage | Slow input-volt free contact of NPN translator. Fast input-voltage |
| **Type of zero reset** | Front panel | Front panel | Front panel (2) External voltage | Front panel for partial counter/Front panel or external contact for total reset | | Front panel (3) External contact |
| **Front face dimensions W x H** | 41.5 x 31 | | 48 x 24 mm | | | |
| **Front face protection** | IP40 | IP40 | IP56 | IP56 | IP66 | IP66 |
| **Certification** | UL, cUR | UL, cUR | cULus, CSA | cULus, CSA | cULus, CSA | cULus, CSA |
| **Catalogue numbers** | **XBKT5000U11M** | **XBKT60000U11M** | **RC87610050** | **RC87610240** | **RC87610250** | **RC87810340** |

*(2) Reset can be inhibited by switch setting on the unit. (3) External contact required to enable reset.*

## Hour counters

| Display | LCD | LCD | LCD |
|---|---|---|---|
| **Supply voltage** | Battery | Battery | Battery |
| **Number of digits / display** | 6 | 6 | 8 (999,999.99 h)/(Mode: 1/100 hour) |
| **Type of input** | Voltage free contact | Voltage | Transistor |
| **Type of zero reset** | Front Panel (3)/External contact | Front Panel (2)/External contact | Front Panel (1) |
| **Front face dimensions W x H** | 48 x 24 mm | 48 x 24 mm | 48 x 24 mm |
| **Front face protection** | IP64 | IP68 | IP54 |
| **Certification** | cULus, CSA | cULus, CSA | - |
| **Catalogue numbers** | **RC87610440** | **RC87610150** | **XBKH8100 0033E** |

*(1) With electrical interlocking.*

*(2) Reset can be inhibited by switch setting on the unit.*

*(3) External contact required to enable reset.*


| Display | | | LCD | | LED | |
|---|---|---|---|---|---|---|
| **Number of digits / display** | | | 6 | | | |
| **Counting frequency** | | | 5 kHz | | | |
| **Type of rest** | | | Manual, electric and automatic | | | |
| **Front face dimensions, W x H** | | | 48 x 48 mm | | | |
| **Preselection number** | | | 1 | 2 | 1 | 2 |
| **Certification** | | | UL cUR | UL cUR | UL cUR | UL cUR |
| **Front face protector** | | | IP65 | IP65 | IP65 | |
| **Catalogue number** | Supply voltage | 24 VDC | **XBKP61130G30E** | **XBKP61230G30E** | **XBKP62130G30E** | **XBKP62230G30E** |
| | | 115 VAC | **XBKP61130G31E** | **XBKP61230G31E** | - | - |
| | | 230 VAC | **XBKP61130G32E** | **XBKP61230G32E** | **XBKP62130G32E** | **XBKP62230G32E** |



Other versions: **please consult your Schneider Electric agency.**

# Timing relays
## Modular timers




| Type of modular timer width 17.5 mm, relay output | On-delay | Multifunction | | |
|---|---|---|---|---|
| External control | no | – | | – |
| Supply voltage | 24 VDC - 24 ...240 VAC | 24 VDC - 24 ...240 VAC | | 12 ... 240VAC/DC |
| Timing range | 0.1 s…100 h | 0.1 s…100 h | 0.1 s…10 h | 0.1 s…100 h |
| Output | 1 C/O | 1 C/O | 1 C/O | 1 C/O |
| References | **RE11RAMU** | **RE11RMMU** (1) | **RE11RMEMU** (2) | **RE11RMMW** (1) |

*(1) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation, Pulse output, Timing after closing/opening of control contact.*

*(2) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation.*


| Type of modular timer width 17.5 mm, relay output | Asymmetrical flashing | Pulse on energisation | Off delay | Timing on impulse |
|---|---|---|---|---|
| External control | – | – | – | – |
| Supply voltage | 24 VDC - 24…240 VAC | 24 VDC - 24…240 VAC | 24 VDC - 24…240 VAC | 24 VDC - 24…240 VAC |
| Timing range | 0.1 s…100 h | 0.1 s…100 h | 0.1 s…100 h | 0.1 s…100 h |
| Output | 1 C/O | 1 C/O | 1 C/O | 1 C/O |
| References | **RE11RLMU** | **RE11RHMU** | **RE11RCMU** | **RE11RBMU** |


| Type of modular timer width 17.5 mm, solid-state output | On-delay | Off-delay | Multifunction (3) |
|---|---|---|---|
| Supply voltage | 24…240 VAC/DC | 24…240 VAC | 24…240 VAC |
| Timing range | 0.1 s…100 h | 0.1 s…100 h | 0.1 s…100 h |
| Output | solid-state | solid-state | solid-state |
| References | **RE11LAMW** | **RE11LCBM** | **RE11LMBM** |

*(3) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation, Pulse output, Timing after closing/opening of control contact.*




| Panel-mounted relays | | Timer on-delay | Asymmetrical flasher | Multifunction (4) | Multifunction (5) |
|---|---|---|---|---|---|
| Power supply | | 24…240 VAC/DC | | | |
| Time range | | 0,02 s…300 h | | | |
| Output | | 2 relay 5 A | | | |
| Reference | | RE48ATM12MW | RE48ACV12MW | RE48AMH13MW (6) | RE48AML12MW |
| | Back panel mounting socket | RUZC2M | RUZC3M | RUZC2M | RUZC3M |
| | Front panel mounting socket | **RE48ASOC8SOLD** (7) | **RE48ASOC11SOLD** (7) | **RE48ASOC8SOLD** (7) | **RE48ASOC11SOLD** (7) |

*(4) Timer on-delay / pulse on energization.*

*(5) Timer on-delay / calibrator / timer off-delay / symmetrical flasher.*

*(6) 1 selectable in instantaneous.*

*(7) Not CSA certified.*

# Timing relays

## Industrial timers




| Type of single function relay<br>width 22.5 mm, relay output | On-delay | | Off-delay | | |
|---|---|---|---|---|---|
| **External control** | no | yes | no | yes | yes |
| **Supply voltage** | 24 VAC/DC<br>110…240 VAC | 24 VAC/DC<br>42…48 VAC/DC<br>110…240 VAC | 24...240 VAC/DC | 24 VAC/DC<br>42…48 VAC/DC<br>110…240 VAC | 24 VAC/DC<br>42…48 VAC/DC<br>110…240 VAC |
| **Timing range** | 0.05 s...300 h | 0.05 s...300 h | 0.05 s...10 mn | 0.05 s...300 h | 0.05 s...300 h |
| **Output** | 1 C/O | 2 C/O (1) | 1 C/O | 2 C/O (1) | 1 C/O |
| **References** | **RE7TL11BU** | **RE7TP13BU** | **RE7RB11MW** | **RE7RL13BU** | **RE7RM11BU** |

*(1) 1 selectable in instantaneous mode.*




| Type of relay<br>width 22.5 mm, relay output | Single function | | Multifunction | |
|---|---|---|---|---|
| | Asymmetrical flashing | Pulse on energisation | 6 functions (2) | 8 functions (3) |
| **External control** | yes | no | – | – |
| **Supply voltage** | 24 VAC/DC<br>42…48 VAC/DC<br>110…240 VAC | 24 VAC/DC<br>110…240 VAC | 24 VAC/DC<br>42…48 VAC/DC<br>110…240 VAC | 24 VAC/DC<br>110…240 VAC |
| **Timing range** | 0.05 s...300 h | 0.05 s...300 h | 0.05 s...300 h | 0.05 s...300 h |
| **Output** | 1 C/O | 1 C/O | 1 C/O | 2 C/O (4) |
| **References** | **RE7CV11BU** | **RE7PE11BU** | **RE7ML11BU** | **RE7MY13BU** |

*(2) RE7ML11BU functions: On-delay, Off-delay, Pulse on energisation with start on energisation, Pulse on energisation with start on opening of remote control contact, Flashing with start during the OFF period, Flashing with start during the ON period.*

*(3) REMY13BU functions: On-delay, Off-delay, Pulse on energisation with start on energisation, Pulse on energisation with start on opening of remote control contact, Flashing with start during the OFF period, Flashing with start during the ON period, Star-delta starting with double On-delay timing, Star-delta starting with contact for switching to star connection.*

*(4) 1 selectable in instantaneous mode.*

## Miniature plug-in relays, relay output


| Functions | | | |
|---|---|---|---|
| **Timing ranges** | 7 switchable ranges | 0.1 s…1 s - 1 s…10 s - 0.1 min…1 min - 1 min…10 min - 0.1 h…1 h - 1 h…10 h - 10 h…100 h | |
| **Relay output** | | 4 timed C/O contacts | 2 timed C/O contacts |
| **Rated current** | | 3 AC 5 A | AC 5 A |
| **Voltages** | 24 VDC | **RE XL4TMBD** | **RE XL2TMBD** |
| | 24 VAC 50/60 Hz | **RE XL4TMB7** | **RE XL2TMB7** |
| | 120 VAC 50/60 Hz | **RE XL4TMF7** | **RE XL2TMF7** |
| | 230 VAC 50/6 0 Hz | **RE XL4TMP7** | **RE XL2TMP7** |
| **Socket with mixed contact terminals** | With screw clamp | **RXZE2M114** | **RXZE2M114** |
| | With connector | **RXZE2M114M** | **RXZE2M114M** |



Other versions: **please consult your Schneider Electric agency.**

# Smart relays
## Compact, SR2




| Compact smart relays | | With display, a.c. power supply | | | | | |
|---|---|---|---|---|---|---|---|
| **Supply voltage** | | 24 VAC | | 100…240 VAC | | | |
| **Number of inputs/outputs** | | 12 | 20 | 10 | 12 | 20 | 20 |
| **Number of inputs** | Discrete inputs | 8 | 12 | 6 | 8 | 12 | 12 |
| **Number of outputs** | | 4 relay | 8 relay | 4 relay | 4 relay | 8 relay | 8 relay |
| **Dimensions, W x D x H (mm)** | | 71.2x59.5x107.6 | 124.6x59.5x107.6 | 71.2x59.5x107.6 | | 124.6x59.5x107.6 | |
| **Clock** | | yes | yes | no | yes | no | yes |
| **References** | | **SR2B121B** | **SR2B201B** | **SR2A101FU** (1) | **SR2B121FU** | **SR2A201FU** (1) | **SR2B201FU** |

*(1) Programming on smart relay in LADDER language only.*


| Compact smart relays | | With display, d.c. power supply | | | | | |
|---|---|---|---|---|---|---|---|
| **Supply voltage** | | 12 VDC | | 24 VDC | | | |
| **Number of inputs/outputs** | | 12 | 20 | 10 | 12 | 20 | 20 |
| **Number of inputs** | Discrete inputs | 8 | 12 | 6 | 8 | 12 | 12 |
| | including 0-10 V analogue inputs | 4 | 6 | - | 4 | 2 | 6 |
| **Number of outputs** | | 4 relay | 8 relay | 4 relay | 4 | 8 relay | 8 |
| **Dimensions, W x D x H (mm)** | | 71.2x59.5x107.6 | 124.6x59.5x107.6 | 71.2x59.5x107.6 | | 124.6x59.5x107.6 | |
| **Clock** | | yes | yes | no | yes | no | yes |
| **References** | | **SR2B121JD** | **SR2B201JD** | **SR2A101BD** (1) | **SR2B12●BD** (2) | **SR2A201BD** (1) | **SR2B20●BD** (2) |

*(1) Programming on smart relay in LADDER language only.*

*(2) Replace the ● by number 1 to order a smart relay with relay output or by 2 for a smart relay with transistor output (Example: SR2B121BD).*


| Compact smart relays | | Without display and without buttons | | | | | |
|---|---|---|---|---|---|---|---|
| **Supply voltage** | | 100…240 VAC | | | 24 VDC | | |
| **Number of discrete inputs/outputs** | | 10 | 12 | 20 | 10 | 12 | 20 |
| **Number of inputs** | **Discrete inputs** | 6 | 8 | 12 | 6 | 8 | 12 |
| | **including 0-10 V analogue inputs** | – | – | – | – | 4 | 6 |
| **Number of outputs** | | 4 relay | 4 relay | 8 relay | 4 relay | 4 relay | 8 relay |
| **Dimensions, W x D x H (mm)** | | 71.2x59.5x107.6 | | 124.6x59.5x107.6 | 71.2x59.5x107.6 | | 124.6x59.5x107.6 |
| **Clock** | | no | yes | yes | no | yes | yes |
| **References** | | **SR2D101FU** (1) | **SR2E121FU** | **SR2E201FU** | **SR2D101BD** (1) | **SR2E121BD** (3) | **SR2E201BD** (3) |

*(1) Programming on smart relay in LADDER language only.*

*(3) To order a smart relay for a 24 VAC supply (no analogue inputs), delete the letter D from the end of the reference (SR2E121B and SR2E201B).*

# Zelio Logic — Smart relays

## Modular, SR3



| Modular smart relays* | | With display | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Supply voltage** | | 24 VAC | | 100…240 VAC | | 12 VDC | 24 VDC | |
| **Number of inputs/outputs** | | 10 | 26 | 10 | 26 | 26 | 10 | 26 |
| **Number of inputs** | Discrete inputs | 6 | 16 | 6 | 16 | 16 | 6 | 16 |
| | including 0-10 V analogue inputs | – | – | – | – | 6 | 4 | 6 |
| **Number of outputs** | | 4 relay | 10 relay | 4 relay | 10 relay | 10 relay | 4 | 10 |
| **Dimensions, W x D x H (mm)** | | 71.2x59.5x107.6 | 124.6x59.5x107.6 | 71.2x59.5x107.6 | 124.6x59.5x107.6 | 124.6x59.5x107.6 | 71.2x59.5x107.6 | 124.6x59.5x107.6 |
| **Clock** | | yes | yes | yes | yes | yes | yes | yes |
| **References** | | **SR3B101B** | **SR3B261B** | **SR3B101FU** | **SR3B261FU** | **SR3B261JD** | **SR3B10●BD** (1) | **SR3B26●BD** (1) |

**The modular base can be fitted with one I/O extension module. The 24 VDC modular base can be fitted with one communication module and/or one I/O extension module.*

*(1) Replace the ● by number 1 to order a smart relay with relay output or by 2 for a smart relay with transistor output (Example: SR3B101BD).*


| Extension modules for Zelio Logic SR3B●●●●● (2) | | Communication | | Discrete Inputs/Outputs | | | Analogue Inputs/Outputs |
|---|---|---|---|---|---|---|---|
| **Network** | | Modbus | Ethernet | – | | | – |
| **Number of inputs/outputs** | | – | – | 6 | 10 | 14 | 4 |
| **Number of inputs** | Discrete | – | – | 4 | 6 | 8 | – |
| | Analogue (0…10 V, 0…20 mA, PT100) | – | – | – | – | – | 2 (1 PT100 max.) |
| **Number of outputs** | Relay | – | – | 2 relay | 4 relay | 6 relay | – |
| | Analogue (0…10 V) | – | – | – | – | – | 2 |
| **Dimensions, W x D x H (mm)** | | 35.5x59.5x107.6 | | 35.5x59.5x107.6 | 72x59.5x107.6 | | 35.5x59.5x107.6 |
| **References** | 24 VAC | – | – | **SR3XT61B** | **SR3XT101B** | **SR3XT141B** | – |
| | 100…240 VAC | – | – | **SR3XT61FU** | **SR3XT101FU** | **SR3XT141FU** | – |
| | 12 VDC | – | – | **SR3XT61JD** | **SR3XT101JD** | **SR3XT141JD** | – |
| | 24 VDC | **SR3MBU01BD** | **SR3NET01BD** | **SR3XT61BD** | **SR3XT101BD** | **SR3XT141BD** | **SR3XT43BD** |

*(2) The power supply of the extension modules is provided via the Zelio Logic modular relays.*

## Zelio Soft 2 software and programming tools


| Zelio Soft 2 software, connecting cables, wireless connecting, memory | Multilingual programming software | Connecting cables | | Wireless connection | Back-up memory |
|---|---|---|---|---|---|
| **Description** | PC CD-ROM (Windows 98, NT, 2000, XP) (3) | Serial PC/Smart relay | USB PC/Smart relay | Bluetooth interface | EEPROM |
| **References** | **SR2SFT01** | **SR2CBL01** | **SR2USB01** | **SR2BTC01** | **SR2MEM02** |

*(3) CD-ROM including Zelio Soft 2 programming software, an application library, a self-training manual, installation instructions and a user's manual.*

## Communication interface for SR2/SR3

| Interface, modems, Zelio Logic Alarm software | Communication interface | Modems (4) | | Alarm management software |
|---|---|---|---|---|
| **Supply voltage** | 12…24 VDC | 12…24 VDC | 12…24 VDC | – |
| **Description** | – | Analogue modem | GSM modem | PC CD-ROM (Windows 98, NT, 2000, XP) |
| **Dimensions, W x D x H (mm)** | 72x59.5x107.6 | 120.7x35x80.5 | 111x 25.5x54.5 | – |
| **References** | **SR2COM01** | **SR2MOD01** | **SR2MOD02** | **SR2SFT02** |

*(4) Must be used in conjunction with communication interface SR2COM01.*



Other versions: **please consult your Schneider Electric agency.**

# Programmable controllers

## Bases



**Simplicity, ease of use**

New

Ethernet Ready

| Type of base | | Compact | | | |
|---|---|---|---|---|---|
| **Number of digital i/O** | | 10 | 16 | 24 | 40 |
| **Number of digital inputs (24 VDC)** | | 6 sink/source | 9 sink/source | 14 sink/source | 24 sink/source |
| **Number of digital outputs** | | 4 relay (2 A) | 7 relay (2 A) | 10 relay (2 A) | 14 relay (2 A), 2 solid-state (1 A) |
| **Type of connection** | | Screw terminals (non removable) | | | |
| **Possible I/O expansion modules** | | – | – | 4 | 7 |
| **Counting** | | 3 x 5 kHz, 1 x 20 kHz | | | |
| **PWM positioning** | | – | | | 2 x 7 kHz |
| **Serial ports** | | 1 x RS 485 | 1 x RS 485; option: 1 x RS 232C or RS 485 | | |
| **Protocol** | | Modbus master/slave, ASCII, I/O relocation | | | |
| **Ethernet port** | | – | – | – | RJ45 Ethernet |
| **Dimensions, W x D x H** | | 80 x 70 x 90 mm | 80 x 70 x 90 mm | 95 x 70 x 90 mm | 157 x 70 x 90 mm |
| **References** | Supply voltage 100…240 VAC | **TWDLCAA10DRF** | **TWDLCAA16DRF** | **TWDLCAA24DRF** | **TWDLCAE40DRF** (1) |
| | Supply voltage 19.2…30 VDC | **TWDLCDA10DRF** | **TWDLCDA16DRF** | **TWDLCDA24DRF** | **TWDLCDE40DRF** (1) |
| | Real-time clock (option) | **TWDXCPRTC** | | | |
| | Display unit (option) | **TWDXCPODC** | | | |
| | Memory cartridge (option) | **TWDXCPMFK32** (3) | | | **TWDXCPMFK64** (4) |

*(1) 40 I/O version without Ethernet also available: TWDLCAA40DRF and TWDLCDA40DRF.*

**Compactness, flexibility**

| Type of base | | Modular | | |
|---|---|---|---|---|
| **Number of digital i/O** | | 20 | | 40 |
| **Number of digital inputs (24 VDC)** | | 12 sink/source | 12 sink/source | 24 sink/source |
| **Number of digital outputs** | | 8 transistor, source (0.3 A) | 6 relay (2 A) & 2 trans., source (0.3 A) | 16 transistor, source (0.3 A) |
| **Type of connection** | | HE10 connector | Removable screw terminals | HE10 connector |
| **Possible I/O expansion modules** | | 4 | 7 | 7 |
| **Supply voltage** | | 24 VDC | | |
| **Counting** | | 2 x 5 kHz, 2 x 20 kHz | | |
| **PLS/PWM positioning** | | 2 x 7 kHz | | |
| **Serial ports** | | 1 x RS 485; option: 1 x RS 232C or RS 485 | | |
| **Protocol** | | Modbus master/slave, ASCII, I/O relocation | | |
| **Dimensions, W x D x H** | | 35.4 x 70 x 90 mm | 47.5 x 70 x 90 mm | 47.5 x 70 x 90 mm |
| **References** | | **TWDLMDA20DTK** (2) | **TWDLMDA20DRT** | **TWDLMDA40DTK** (2) |
| | Real-time clock (option) | **TWDXCPRTC** | | |
| | Display unit (option) | **TWDXCPODM** | | |
| | Memory cartridge (option) | **TWDXCPMFK32** (3) | **TWDXCPMFK64** (4) | |

*(2) Sink version transistor outputs also available: TWDLMDA20DUK and TWDLMDA40DUK.*

*(3) Application backup, program transfer.*

*(4) Memory expansion, application backup, program transfer.*

1


| Type of module | | Analogue inputs | | | | |
|---|---|---|---|---|---|---|
| **Number of inputs** | | 2 I | 2 I | 4 I | 8 I | 8 I |
| **Connection** | | Removable screw terminals | | | | |
| **Inputs** | Range | Thermocouples type K, J, T | 0…10 V (1)<br>4…20 mA (2) | 0…10 V (1)<br>4…20 mA (2)<br>°C | 0…10 V (1)<br>4…20 mA (2) | PTC/NTC |
| | Resolution | 12 bits (4096 points) | | | 10 bits (1024 points) | |
| **Measuring accuracy** | | 0.2% of the full scale value | | | | |
| **Supply voltage** | | 24 VDC | | | | |
| **Dimensions, W x D x H** | | 23.5 x 70 x 90 mm | | | | |
| **References** | | **TWDAMI2LT** | **TWDAMI2HT** | **TWDAMI4LT** | **TWDAMI8HT** | **TWDARI8HT** |

*(1) Non differential.*

*(2) Differential.*


| Type of module | | Analogue Outputs, Inputs/Outputs (mixed) | | | | |
|---|---|---|---|---|---|---|
| **Number of inputs and/or outputs** | | 1 O | 2 O | 2 I / 1 O | 2 I / 1 O | 4 I / 2 O |
| **Connection** | | Removable screw terminals | | | | |
| **Inputs** | Range | – | – | 0…10 V (1)<br>4…20 mA (2) | Thermocouple type K, J & T<br>3-wire Pt 100 thermal probe | 0…10 V (1)<br>4…20 mA (2) |
| | Resolution | – | – | 12 bits (4096 points) | 12 bits (4096 points) | 12 bits (4096 points) |
| **Outputs** | Range | 0…10 V (1)<br>4…20 mA (2) | ± 10 V | 0…10 V (1)<br>4…20 mA (2) | 0…10 V (1)<br>4…20 mA (2) | 0…10 V (1)<br>4…20 mA (2) |
| | Resolution | 12 bits | 11 bits + sign | 12 bits | 12 bits | 12 bits |
| **Measuring accuracy** | | 0.2% of the full scale value | | | | |
| **Supply voltage** | | 24 VDC | | | | |
| **Dimensions, W X D x H** | | 23.5 x 70 x 90 mm | | | | |
| **References** | | **TWDAMO1HT** | **TWDAVO2HT** | **TWDAMM3HT** | **TWDALM3LT** | **TWDAMM6HT** |

*(1) Non differential.*

*(2) Differential.*

| Type of module | | | Digital Inputs/Outputs | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Number of inputs and/or outputs** | | | 8 | 16 | 16 | 32 | 4 I / 4 O | 16 I / 8 O |
| **Connection** | | | Removable screw terminals | | HE10 connectors | | Removable screw terminals | Spring terminals (non removable) |
| **References** | Inputs | 24 VDC sink | **TWDDDI8DT** | – | – | – | – | – |
| | | 24 VDC sink/source | – | **TWDDDI16DT** | **TWDDDI16DK** | **TWDDDI32DK** | | |
| | | 120 V sink | **TWDDAI8DT** | – | – | – | – | – |
| | Outputs | Relay (2 A) | **TWDDRA8RT** | **TWDDRA16RT** | – | – | – | – |
| | | Transistor, source (0.1 A) | **TWDDD08TT** (3) | – | **TWDDD016TK** (3) | **TWDDD032TK** (3) | – | – |
| | Inputs, 24 VDC sink/source + Outputs, relay (2 A) | | – | – | – | – | **TWDDMM8DRT** | **TWDDMM24DRF** |

*(3) Sink version transistor outputs also available: TWDDDO8UT, TWDDDO16UK and TWDDDO32UK.*

# Programmable controllers

## Communication modules for Twido Compact and Modular bases





| Type of module | Serial interface | | | Serial interface adaptor | | |
|---|---|---|---|---|---|---|
| **Physical layer (non isolated)** | RS 232C | RS 485 | | RS 232C | RS 485 | |
| **Connection** | Mini-DIN connector | | Screw terminals | Mini-DIN connector | | Screw terminals |
| **Protocol** | Modbus master/slave, ASCII, I/O relocation | | | | | |
| **Twido base compatibility** | Modular base TWDLMDA | | | Compact base TWDLCAA16/24DRF<br>Modular base via integrated display module TWDXCPODM | | |
| **References** | **TWDNOZ232D** | **TWDNOZ485D** | **TWDNOZ485T** | **TWDNAC232D** | **TWDNAC485D** | **TWDNAC485T** |



| Type of module | CANopen expansion | Ethernet interface | Modbus isolation module | Modbus junction module | AS-Interface master |
|---|---|---|---|---|---|
| **Number of modules** | 1 | 1 | – | – | 2 (1) |
| **Connection** | SUB-D9 | RJ45 | RJ45 | RJ45 | Removable screw terminals |
| **Twido base compatibility** | 20, 24 or 40 I/O base | All models | All models | All models | 20, 24 or 40 I/O base |
| **References** | **TWDNCO1M** | **499TWD01100** | **TWDXCAISO** | **TWDXCAT3RJ** | **TWDNOI10M3** |

*(1) 2 modules max., 62 digital slaves max., 7 analogue slaves max., AS-Interface/M3, V 2.11 (profile S.7.4 not supported).*

## Programming software

| Software, connecting cables, interfaces | TwidoSuite software | TwidoAdjust software | Connecting cables | | Bluetooth® USB adaptor | Bluetooth® gateway |
|---|---|---|---|---|---|---|
| **Application** | PC with Windows 2000® or XP | Pocket PC 2003 or 2005 | Twido/PC USB port | Twido/PC serial port | For PC not fitted with Bluetooth® | For Twido controller |
| **References** | **TWDBTFU10** | **TWDSMD1002V30M** | **TSXCUSB485** | **TSXPCX1031** (2) | **VW3A8115** | **VW3A8114** |

*(2) For Twido Extreme: order the reference VW3A8106.*

# Bases



**Robustness**

New

| Type of base | | Twido Extreme |
|---|---|---|
| **Number of I/O** | | 41 |
| **Degree of protection** | | IP67 |
| **Temperature** | | -40…+110°C, storage -55…+155°C |
| **Relative humidity** | | 90% without condensation |
| **Number of inputs** | Digital | 13 (short-circuit protected) |
| | Analogue | 8 (including 1 input configurable to PWM) |
| | PWM | 1 |
| **Number of outputs** | Digital | 16* (short-circuit protected) |
| | PWM or PLS | 3 |
| **Supply voltage** | | 12 or 24 VDC |
| **Counting** | | 1 x 10 kHz |
| **Communication ports** | | RS 485, CAN J1939, CANopen master |
| **Serial link protocols** | | Modbus RTU master/slave, ASCII |
| **Dimensions, W x D x H** | | 165.51 x 45.70 x 225 mm |
| **References** | | **TWDLEDCK1** |

** 16 outputs in 12 VDC. Limited to 8 outputs in 24 VDC.*

| Fixing and connection | Fixing kit | 70-pin connector | Pre-wired 70-pin connector |
|---|---|---|---|
| **Details** | 4 spacers,<br>8 washers,<br>8 shock mounts | 80 pins,<br>80 blanking plugs,<br>1 cover | Pre-wired with 1.5 m long cable,<br>free wires other end |
| **Degree of protection** | – | IP67 | IP67 |
| **References** | **TWDXMTK4** | **TWDFCNK70** | **TWDFCWK70L015** |

| Separate components | Crimping tool | RJ45 programming connector |
|---|---|---|
| **Application** | Crimping wires onto pins<br>of 70-pin connector | Connecting Twido Extreme<br>to a programming PC |
| **References** | **TWDXMTCT** | **TWDNAK70P** |

# Power Supplies & Transformers

*single/three phase*
*100-500 V 72 W-960 W*

## Universal Power Supplies

### Performance and service for your automated systems

A new generation of regulated switch mode power supplies for single and three-phase networks delivering 3 A to 40 A. Their extremely wide operating range and their integration of a large number of new functions make them the new reference in universal power supply.

## Optimum, Modular Power Supplies

### Simple and compact

Designed for simple applications and machines, optimum and modular power supplies are primarily appreciated for their highly compact size.

single phase
100-240 V 7 W-145 W

*single phase*
*100-240 V 60 W-240 W*

## Dedicated Power Supplies

### Tailor-made for your repetitive machines...

Designed for simple and repetitive commercial machines, a range of competitive high quality dedicated power supplies.

# Contents



**Discover on pages 2/26 and 2/27 the function modules – the answer to the different problems like network cut, 24 VDC circuit overload and availability.**

# More service...

## Network cuts

Network voltage interrupts create equipment operating irregularity that can result in production losses and even require maintenance team intervention for restarting.

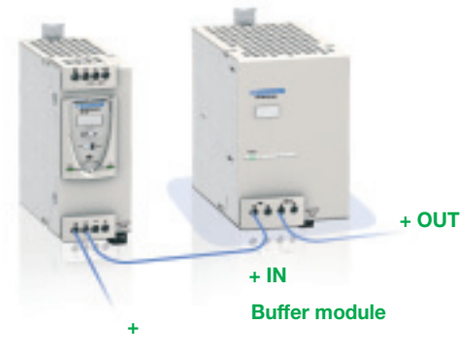
### Phaseo universal solutions can:

- Render microcuts “transparent” for equipment
- Enable equipment stop with necessary data backup, so allowing restart without problems at return of network voltage.

2

### Buffer module solution

**Microcuts < few secondes**

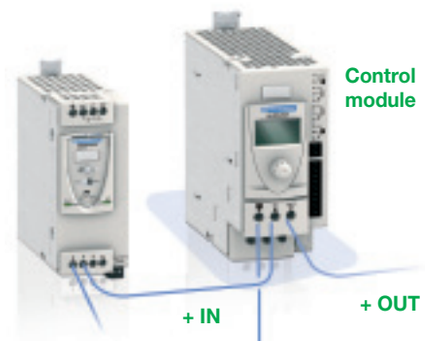


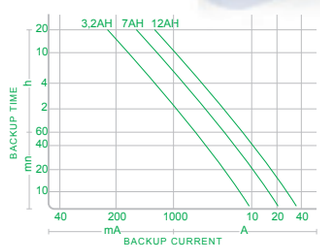

### Simple and efficient

- No setting required
- Diagnostic relay contact (module charge state)
- Standard and backup circuit separation possible.


### Battery backup solution

**Cuts > few secondes**




### Total confidence

- Battery state automatic test
- Advanced and user-friendly diagnostics:
  - **Power supply** operation
  - **Battery** operation
  - **Fault** presence.


### Flexible and adaptable

- 2 current supply modules are available:
  - Backup until complete battery discharge (battery is however disconnected before overdischarge)
  - Backup for an adjustable time period, keeping energy in reserve in case of a closely following cut.

### Quick installation

- Copy of configuration between 2 modules using memory cartridge
- Quick configuration of battery control module by a single selector switch and display pictograms.



Other versions: **please consult your Schneider Electric agency.**

## 24 VDC circuit overload

Protection of circuits supplied in DC low voltage has traditionally been by fuses or electromechanical circuit-breakers. In certain cases (notably short-circuits) this protection is not sufficiently selective, and electronic protection of the power supply suspends low voltage supply before downstream protections can react.

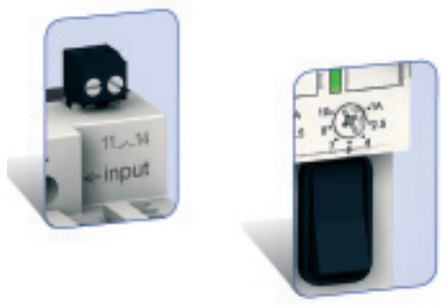
**The Phaseo solution is a 4-starter electronic protection module, dedicated to ABL 8R/W Universal power supplies.**

**Each of these starters is adjustable from 1 to 10 A.**

**Starter protection solution**


### High-performance solution ensuring service continuity

- Selectivity enabling isolation of fault circuits only
- Advanced diagnostics by LED and relay contact
- Manual opening of each circuit by switch
- Lead-sealed settings.




### Minimised stock levels

- 1 product reference each covering 1 to 10 A.

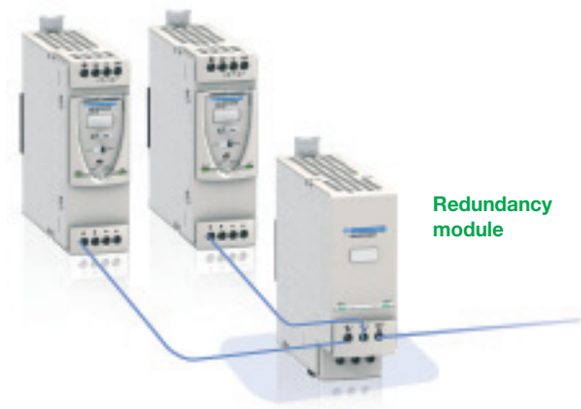
## Availability

On certain equipment, the consequences of a 24 V control voltage breakdown can be extremely detrimental and can justify paralleling 2 or more power supplies to maintain faultless operating continuity.

**The Phaseo solution consists of coupling 2 universal power supplies with an electronic redundancy module.**

**The primaries of these power supplies can be on the same or on different networks.**

**Redundancy solution**




### Service continuity in total confidence

- Advanced diagnostics by LED
- C/O contact enables signalling of fault in one of the 2 power supplies and alerts maintenance.

# Power supplies
## Modular, Optimum, Universal



| Type of power supply | Modular, regulated switch mode with automatic reset | | | | | |
|---|---|---|---|---|---|---|
| Rated input voltage | 100…240 VAC | | | | | |
| Rated output voltage | 24 V | | | | 5 V | 12 V |
| Rated power / Rated current | 7.5 W / 0.3 A | 15 W / 0.6 A | 30 W / 1.2 A | 60 W / 2.5 A | 20 W / 4 A | 25 W / 2 A |
| Reset | Auto | | | | | |
| Conformity to IEC 61000-3-2 | Without | | | | | |
| Certifications | cULus, cCSAus, TUV, CE, C-Tick | | | | | |
| Dimensions (mm) | 36x59x90 | | 54x59x90 | 72x59x90 | 54x59x90 | |
| Fixing (mm) | DIN rail 35x7.5 or 35x15 or on panel mount by screw | | | | | |
| References | **ABL8MEM24003** | **ABL8MEM24006** | **ABL8MEM24012** | **ABL7RM24025** | **ABL8MEM05040** | **ABL8MEM12020** |

| Type of power supply | Universal, regulated switch mode with automatic or manual reset | | |
|---|---|---|---|
| Rated input voltage | 100…120 VAC and 200…500 VAC | | |
| Rated output voltage | 24 V | | |
| Rated power / Rated current | 72 W / 3 A | 120 W / 5 A | 240 W / 10 A |
| Permissible temporary inrush current (boost) | 1.5 In during 4 s | | |
| Conformity to IEC 61000-3-2 | Yes | | |
| Diagnostic relay (output voltage > 21.6V) | No | Yes | |
| Certifications | UL (in progress), cCSAus, CB scheme, CE | | |
| Dimensions (mm) | 44x120x143 | 56x120x143 | 85x140x143 |
| Fixing (mm) | DIN rail 35x7.5 or 35x15 | | |
| References | **ABL8RPS24030** | **ABL8RPS24050** | **ABL8RPS24100** |



Other versions: **please consult your Schneider Electric agency.**




| | Optimums, regulated switch mode | | | |
|---|---|---|---|---|
| | 100…240 VAC | | | |
| | 24 V | | 12 V | 48 V |
| | 72 W / 3 A | 120 W / 5 A | 60 W / 5 A | 144 W / 2.5 A |
| | Auto | | Auto or manual | |
| | No | | Yes | |
| | cULus, cCSAus, TUV, CE, C-Tick | | | |
| | 27x120x120 | 54x120x120 | | |
| | DIN rail 75x7.5, 35x7.5 or 35x15 | | | |
| | **ABL8REM24030** | **ABL8REM24050** | **ABL7RP1205** | **ABL7RP4803** |





| | Universal, regulated switch mode with automatic or manual reset | | |
|---|---|---|---|
| | 100…120 VAC and 200…240 VAC | 3 x 380…500 VAC | |
| | 24 V | | |
| | 480 W / 20 A | | 960 W / 40 A |
| | 1.5 In during 4 s | | |
| | Yes | | |
| | Yes | | |
| | UL (in progress), cCSAus, CB scheme, CE | | |
| | 145x140x143 | 95x155x143 | 165x155x143 |
| | DIN rail 35x7.5 or 35x15 | | |
| | **ABL8RPM24200** | **ABL8WPS24200** | **ABL8WPS24400** |

| **Type of module** | **Converters DC/DC** | |
|---|---|---|
| **Compatibility** | Output connection of Universal power supplies ABL8RPS24… and ABL8WPS24… | |
| **Rated output voltage** | 5 V | 12 V |
| **Rated output current** | 6 A | 2 A |
| **Certifications** | UL (in progress), cCSAus, CB scheme, CE | |
| **Dimensions (mm)** | 44x140x146 | |
| **Fixing (mm)** | DIN rail 35x7.5 or 35x15 | |
| **References** | **ABL8DCC05060** | **ABL8DCC12020** |

# Power supplies
## Modular, Optimum, Universal





| Type of module | | Microcuts and cuts network solutions. Fixing Omega rail clip-in (1) | | |
|---|---|---|---|---|
| **Compatibility** | | Output connection of Universal power supplies ABL8RPS24… and ABL8WPS24… | | |
| **Technology** | | Buffer module | battery backup module + battery | |
| **Rated voltage** | | 40 A | 20 A | 40 A |
| **Holding time 1A** | | 2 s typique | adjustable from 10 s to 24 H (battery depending) | |
| **Holding time for maximum current** | | 100 ms typique | adjustable from 10 s to 30 mn (battery depending) | adjustable from 10 s to 10 mn (battery depending) |
| **Certifications** | | UL (in progress), cCSAus, CB scheme, CE | | |
| **Dimensions (mm)** | | 85x140x146 | 86x175x143 | 86x175x143 |
| **Fixing (mm)** | | DIN rail 35x7.5 or 35x15 (1) | | |
| **References Control module** | | **ABL8BUF24400** | **ABL8BBU24200** | **ABL8BBU24400** |
| **References battery** | 3,2AH (2) | **–** | **ABL8BPK24A03** | **ABL8BPK24A03** |
| | 7AH (2) | **–** | **ABL8BPK24A07** | **ABL8BPK24A07** |
| | 12AH (2) | **–** | **ABL8BPK24A12** | **ABL8BPK24A12** |

*(1) Battery module except 7AH and 12AH. For battery module 3.2AH with ABL1A02 kit.*

*(2) Battery to be chosen according to the graph page 2/26.*


| Type of module | Redundancy power supplies solutions |
|---|---|
| **Compatibility** | Connection of 2 power supplies inputs<br>up to 20 A (1 power supply 40A) |
| **Rated output voltage** | 24 V |
| **Rated output current** | 40 A |
| **Certifications** | UL (in progress), cCSAus, CB scheme, CE |
| **Dimensions (mm)** | 44x140x146 |
| **Fixing (mm)** | DIN rail 35x7.5 ou 35x15 |
| **References** | **ABL8RED24400** |

| Type of module | Starter protection solution |
|---|---|
| **Compatibility** | Output connection of Universal power supplies<br>ABL8RPS24… and ABL8WPS24… |
| **Rated output current** | 10A par voie |
| **Calibres** | 1 / 2.5 / 4 / 5 / 7 / 8 / 10 A |
| **Nombre de voies** | 4 |
| **Relais de défaut** | Yes |
| **Coupure manuelle (1 par voie)** | Two-pole |
| **Certifications** | UL (in progress), cCSAus, CB scheme, CE |
| **Dimensions (mm)** | 71x109x110 |
| **Fixing (mm)** | DIN rail 35x7.5 or 35x15 or on panel mount by screw |
| **References** | **ABL8PRP24100** |



Other versions: **please consult your Schneider Electric agency.**

# Power supplies
## Dedicated

| Type of power supply | | Dedicated, regulated switch mode | | | | | |
|---|---|---|---|---|---|---|---|
| **Input voltage** | | 85…264 VAC | | | | 85…132 VAC / 170…264 VAC | |
| **Output voltage** | | 12 VDC | | 24 VDC | | 24 VDC | |
| **Power / rated current** | | 60 W / 5 A | 100 W / 8.3 A | 60 W / 2.5 A | 100 W / 4.2 A | 150 W / 6.2 A | 240 W / 10 A |
| **Certifications** | | UL, c CSA us, CE, Ctick | | | | | |
| **Dimensions WxDxH (mm)** | | 150x38x98 | 200x38x98 | 150x38x98 | 200x38x98 | 200x50x98 | 200x65x98 |
| **Fixing (mm)** | | Panel mount by scew, by bracket ABL1A01 (1) , on DIN rail 35mm by panel ABL1A02 (1). | | | | | |
| **References** | Without filter | **ABL1REM12050** | **–** | **ABL1REM24025** | **ABL1REM24042** | **ABL1REM24062** | **ABL1REM24100** |
| | With filter (2) | **–** | **ABL1RPM12083** | **–** | **ABL1RPM24042** | **ABL1RPM24062** | **ABL1RPM24100** |

*(1) Has to order separately.*

*(2) Anti harmonic IEC/EN 61000-3-2.*

# 9070 Industrial control transformers
## For control circuits

2

| Type of power supply | | Control Circuit Transformers | | | | | |
|---|---|---|---|---|---|---|---|
| Rated UL/CSA | | 50VA | 75VA | 100VA | 150VA | 200VA | 250VA |
| Rated CE | | 50VA | 75VA | 100VA | 150VA | 200VA | 160VA |
| Inrush UL VA at 20% Power fctor / at 40% Power factor | | | | | | | |
| | 95% of secondary voltage | 193/151 | 271/210 | 339/266 | 666/529 | 588/459 | 1416/1057 |
| | 90% of secondary voltage | 266/215 | 396/318 | 499/404 | 893/731 | 815/659 | 1910/1494 |
| | 85% of secondary voltage | 339/282 | 520/430 | 659/549 | 1120/942 | 1041/866 | 2388/1936 |
| Certification | | "UL-E612939, CSA LR 37055, EN61558/01.89 (TUV)" | | | | | |
| Catalogue Number | | | | | | | |
| | Non fused | 9070T50* | 9070T75* | 9070T100* | 9070T150* | 9070T200* | 9070T250* |
| | Fused (primary and secondary) | 9070TF50* | 9070TF75* | 9070TF100* | 9070TF150* | 9070TF200* | 9070TF250* |

** Complete the catalogue number by adding the voltage code from Table 1.*

## Table 1 - Voltage Codes

| Primary Voltage | Secondary Voltage | Voltage Code | Accessory key |
|---|---|---|---|
| 120 | 120 | D24 | I |
| 120 | 12/24 | D13 | I |
| 208 | 24 | D14 | I |
| 208 | 120 | D3 | I |
| 277 | 24 | D25 | I |
| 277 | 120 | D4 | I |
| 380 | 110 | D6 | I |
| 415 | 110 | D17 | I |
| 480 | 240 | D12 | I |
| 480 | 277 | D22 | I |
| 600 | 120 | D5 | I |
| 600 | 12/24 | D36 | I |
| 600 | 120/240 | D37 | I |
| 120/240 | 24 | D23 | I |
| 208/230/460 | 115 | D20 | II |
| 208/240/277/380/480 | 24 | D19 | III |
| 208/277 | 120 | D51 | I |
| 208/277/380 | 95/115 | D18 | II |
| 230/460/575 | 95/115 | D32 | II |
| 240/480 | 24 | D2 | I |
| 240/480 | 120 | D1 | I |
| 240/480 | 120/240 | D31 | I |
| 240/480 | 24/120 | D15 | I |
| 380/400/415 | 12/24 | D52 | I |
| 380/400/415 | 115/230 | D33 | I |



Other versions: **please consult your Schneider Electric agency.**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 300VA | 350VA | 500VA | 750VA | 1000VA | 1500VA | 2000VA | 3000VA | 5000VA |
| | 200VA | 300VA | 350VA | 500VA | 750VA | 1000VA | 1500VA | 2000VA | 3000VA |
| | 1634/1194 | 1894/1392 | 3197/2374 | 3770/2887 | 6587/4706 | 19324/15066 | 31384/24794 | 26539/19355 | 53111/39368 |
| | 2184/1681 | 2592/2005 | 4104/3195 | 5515/4391 | 9079/6886 | 23983/19361 | 38777/31630 | 39934/30721 | 85265/66309 |
| | 2709/2169 | 3261/2621 | 4981/4019 | 7231/5945 | 11430/9051 | 28607/23756 | 46161/38667 | 52713/42216 | 116277/93882 |
| | | | | | | “UL-E61293, cULE61239, EN61558/01.89 (TUV)” | | | |
| | 9070T50* | 9070T350* | 9070T500* | 9070T750* | 9070T1000* | 9070T1500* | 9070T2000* | 9070T3000* | 9070T5000* |
| | 9070TF50* | 9070TF350* | 9070TF500* | 9070TF750* | 9070TF1000* | 9070TF1500* | 9070TF2000* | - | - |

| Accessories | | Accessory Key | | | Description |
|---|---|---|---|---|---|
| | | I | II | III | |
| Finger safe covers | | | | | |
| | 9070FSC-1 | 25-200VA | 25-100VA | n/a | 2 covers per kit |
| | 9070FSC-2 | 250-5000VA | 150-5000VA | n/a | |
| | 9070FSC-23 | n/a | n/a | 25-5000 | |
| Field Installable Fuse Options | | | | | |
| | Primary Only | | | | |
| | 9070FB-2A | 25-200VA | 25-150VA | n/a | 2 pole fuse block, 1-1/2in x 13/32in midget fuse |
| | 9070FB-2B | 250-2000 | 200-1500 | 25-1500 | |
| | Primary and Secondary | | | | |
| | 9070FB-3A | 25-200VA | 25-150VA | n/a | 3 pole fuse blk , 1-1/2in x 13/32in midget fuse |
| | 9070FB-3B | 250-2000 | 200-1500 | 25-1500 | |
| | Secondary Only | | | | |
| | 9070FB-1A | 25-200VA | 25-150VA | n/a | 1 pole fuse blk , 1-1/2in x 13/32in midget fuse |
| | 9070FB-1B | 250-2000 | 200-1500 | 25-1500 | |
| | | | | | |
| | 9070SF25A | 25-200VA | 25-150VA | n/a | 1 pole fuse blk , 1-1/4in x 1/4in fuse |
| | 9070SF25B | 250-2000 | 200-1500 | 25-1500 | |
| | | | | | |
| | 9070SF41A (1) | 25-200VA | 25-150VA | n/a | secondary fuse clip , 1-1/2in x 13/32in midget fuse |
| | 9070SF41B (1) | n/a | 200-2000 | 25-2000 | |
| Fuse Pullers | | | | | |
| | 9070FP1 | | All | | used with fuse blk , 1-1/2in x 13/32in fuses |

*(1) Cannot be installed on voltage codes D13, D15, D18, D31, D32, D33, D35, D36, D37, D39, D52.*

# Interfaces and I/Os

## AB1 Terminals Blocks 3 connection technologies:

- Screw technology type AB1 VV Rugged and reliable
- Spring technology type AB1 RRN Quick and reliable
- Insulation displacement technology type AB1 AA Quick and innovativ

## Advantys Telefast pre-wired system:

Simplify your cabling by replacing long and difficult cable runs incorporating traditional terminals by Telefast sub-bases.

Advantys Telefast ABE7 - IP 20

Advantys Telefast ABE9 - IP 67

## Advantys AS-Interface cabling system:

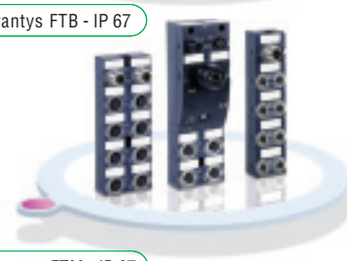
Take the direct route for simplicity and security by connecting all the components of an automation system on the yellow cable.

**Optimised block**

Advantys OTB - IP 20

Advantys FTB - IP 67

**Modular system**



Advantys STB - IP 20

Advantys FTM - IP 67

## Modicon Momentum distributed inputs/outputs:

Simplify machine architectures by connecting the sensors and actuators distributed throughout your machines via a fieldbus.

# Contents

## Distributed I/O solution Advantys STB

- **The intelligence** integrated in Advantys STB and its software responds perfectly to your needs by simplifying the implementation of your automation systems. She offer too a simple integration solution of human/machine dialog, motor starter, speed drives, electronic valves,...through a simple “drag and drop”.

- **Simplicity:** connectors and sockets simplify installation and commissioning; removable memory card enable islandconfiguration to be copied in a few seconds.

- **Adaptability:** The modular and evolutionary design of the range, I/O modules, network interfaces and options available enable you to design a system suited to your needs.

- **Open:** Advantys STB can be interfaced with the main fieldbuses: CANopen, DeviceNet, Ethernet, Fipio, InterBus, Modbus Plus, Profibus DP.

## Connection



## Interfaces and pre-wired system



## Distributed inputs/outputs

# Terminal blocks

## Spring clamp technology

| Clip-on mounting on 35 mm rails | | Terminal blocks (sold in lots of 100) | End covers (sold in lots of 100) | Commoning link (sold in lots of 100) |
|---|---|---|---|---|
| **12 AWG** | Conducting | **AB1RRN235U2GR** | **AB1RRNAC242GR** | **AB1RRAL22** (1) |
| | Protective earth conductor | **AB1RRNTP235U2** | **AB1RRNTPAC242** | – |
| **10 AWG** | Conducting | **AB1RRN435U2GR** | **AB1RRNAC442GR** | **AB1RRAL42** (1) |
| | Protective earth conductor | **AB1RRNTP435U2** | **AB1RRNTPAC442** | – |
| **8 AWG** | Conducting | **AB1RRN635U2GR** | **AB1RRNAC642GR** | **AB1RRNAL62** (2) |
| | Protective earth conductor | **AB1RRNTP635U2** | **AB1RRNTPAC642** | – |
| **6 AWG** | Conducting | **AB1RRN1035U2GR** (3) | **AB1RRNAC1042GR** | **AB1RRNAL102** |
| | Protective earth conductor | **AB1RRNTP1035U2** (3) | **AB1RRNTPAC1042** | – |
| **4 AWG** | Conducting | **AB1RRN1635U2GR** (3) | **AB1RRNAC1642GR** | **AB1RRNAL162** |
| | Protective earth conductor | **AB1RRNTP1635U2** (3) | **AB1RRNTPAC1642** | – |
| **2 AWG** | Conducting | **AB1RRN3535U2GR** (4) | – | **AB1RRAL352** |
| | Protective earth conductor | **AB1RRNTP3535U2** (4) | – | – |

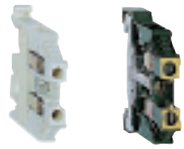
*(1) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1RRAL22 becomes A1BRRAL23).*

*(2) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1RRNAL62 becomes A1BRRNAL64).*

*(3) Sold in lots of 50.*

*(4) Sold in lots of 10.*

## Screw clamp technology



| Clip-on mounting on 35 mm rails | | Terminal blocks (sold in lots of 100) | End covers (sold in lots of 100) | Commoning link (sold in lots of 100) |
|---|---|---|---|---|
| **12 AWG** | Conducting | **AB1VV235U** | **AB1AC24** | **AB1ALN22** (1) |
| | Protective earth conductor | **AB1TP235U** | **AB1AC25** | – |
| **10 AWG** | Conducting | **AB1VV435U** | **AB1AC24** | **AB1ALN42** (1) |
| | Protective earth conductor | **AB1TP435U** | **–** | – |
| **8 AWG** | Conducting | **AB1VV635U** | **AB1AC6** | **AB1ALN62** (1) |
| | Protective earth conductor | **AB1TP635U** | **–** | – |
| **6 AWG** | Conducting | **AB1VVN1035U** (2) | **AB1ACN10** | **AB1ALN102** (1) |
| | Protective earth conductor | **AB1TP1035U** (2) | **–** | – |
| **4 AWG** | Conducting | **AB1VVN1635U** (2) | **AB1ACN16** | **AB1ALN162** (1) |
| | Protective earth conductor | **AB1TP1635U** (2) | **–** | – |
| **2 AWG** | Conducting | **AB1VVN3535U** (3) | _ | **AB1ALN352** (1) |
| | Protective earth conductor | **AB1TP3535U** (3) | **–** | – |
| **2/0 AWG** | Conducting | **AB1VVN7035U** (3) | _ | **AB1ALN702** |
| **300 kcmil** | Conducting | **AB1VVN15035U** (4) | _ | **AB1ALN1502** (1) |

*(1) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1ALN22 becomes AB1ALN23).*

*(2) Sold in lots of 50.*

*(3) Sold in lots of 20.*

*(4) Sold in lots of 10.*

## Insulation displacement technology

| Clip-on mounting on 35 mm rails | | 2-way terminal blocks (sold in lots of 100) | End covers (sold in lots of 10) | 2-pole commoning link (1) (sold in lots of 10) |
|---|---|---|---|---|
| **18 AWG** | Conducting | **AB1AA135U2GR** | **AB1AAAC122GR** | **AB1RRAL22** |
| | Protective earth conductor | **AB1AATP135U2** | **AB1AAAC122VE** | – |
| **14 AWG** | Conducting | **AB1AA235U2GR** | **AB1AAAC122GR** | **AB1RRAL22** |
| | Protective earth conductor | **AB1AATP235U2** | **AB1AAAC122VE** | – |

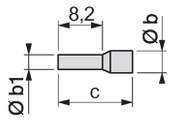
*(1) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1RAL22 becomes AB1RAL23).*



Other versions: **please consult your Schneider Electric agency.**

# DZ5/AZ5 — Insulated cable ends
## Conforming to NFC 63-023 (1)

| mm² | Øb | Øb1 | c |
|---|---|---|---|
| 22 | 3 | 1.4 | 13 |
| 20 | 3.1 | 1.6 | 13 |
| 18 | 3.4 | 1.8 | 13.5 |
| 16 | 4 | 2.1 | 13.5 |
| 14 | 4.6 | 2.7 | 14.5 |

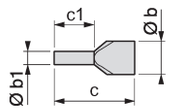



| Type | | | Single cable ends (2) Sold in lots of 10 x 100 | | |
|---|---|---|---|---|---|
| Packaging | | | Individual or “strings” of bags | Dispenser pack | Markable cable ends |
| Conductor AWG | 22 | White | DZ5CE005 | AZ5CE005 | DZ5CA005 |
| in mm² | 20 | Grey | DZ5CE007 | AZ5CE007 | DZ5CA007 |
| | 18 | Red | DZ5CE010 | AZ5CE010 | DZ5CA010 |
| | 16 | Black | DZ5CE015 | AZ5CE015 | DZ5CA015 |
| | 14 | Blue | DZ5CE025 | AZ5CE025 | DZ5CA025 |

*(2) UL certified products. Not CSA certified.*

3

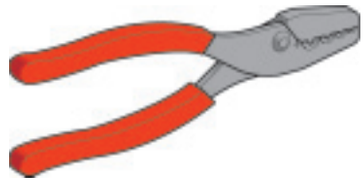
| mm² | Øb | Øb1 | c | c1 |
|---|---|---|---|---|
| 20 | 2.8 x 5 | 1.8 | 15 | 8 |
| 18 | 3.4 x 5.4 | 2.05 | 15 | 8 |
| 16 | 3.6 x 6.6 | 2.3 | 15 | 8 |
| 14 | 4.2 x 7.8 | 2.9 | 18.5 | 10 |




| Type | | | Double cable ends Sold in lots of 5 x 100 |
|---|---|---|---|
| Packaging | | | Dispenser pack |
| Conductor c.s.a. | 2 x 20 | Grey | AZ5DE007D |
| in mm² | 2 x 18 | Red | AZ5DE010D |
| | 2 x 16 | Black | AZ5DE015D |
| | 2 x 14 | Blue | AZ5DE025D |

*(1) For insulated cable ends conforming to DIN46228, please refer to your Schneider Electric agency.*

## Cabling accessories



| Type | Pliers/cutters | | | | |
|---|---|---|---|---|---|
| Functions | Stripping | Cutting/stripping | Crimping | Crimping (ratchet) | Crimping |
| For cable AWG | 28-12 | 20-12 | 22-6 | 0.25 to 6 mm² | 8-2 |
| References | AT1PA7 | AT2PE1 | AT1PA2 | AT2PA5 | AT2PA4 |

# Terminal blocks

## Screw clamp technology

| Mounting on 35mm 7 or Square D track | Terminal block (Sold in lots of 50) | End barrier (Sold in lots of 10) | 2-pole jumper (Sold in lots of 10) |
|---|---|---|---|
| **#22–10 AWG** | 9080GM6 | 9080GM6B | 9080GH700 (3) |
| **#22–8 AWG** | 9080GR6 | 9080GM6B | 9080GH72 |
| **#22–10 AWG** | 9080GK6 | 9080GK6B (1) | 9080GH72 |
| **#18–4 AWG** | 9080GC6 | 9080GC6B | 9080GH74 |
| **#12 AWG–1/0** | 9080GD6 (2) | 9080GD6B | 9080GH76 |
| **#6 AWG–250 kcmil** | 9080GE6 (2) | – | – |

*(1) Sold in lots of 50.*
*(2) Sold in lots of 10.*
*(3) Sold in lots of 20.*



## Interfacing fuseholders

| Fuse Type | | Type M | Class CC | Class H | Class H | Class R | Class R |
|---|---|---|---|---|---|---|---|
| **Maximum voltage rating** | | 600 | 600 | 250 | 600 | 250 | 600 |
| **Maximum current rating** | | 30 | 30 | 30 | 30 | 30 | 30 |
| | 1-pole | 9080FB1611M | 9080FB1611CC | 9080FB1211 | 9080FB1611 | 9080FB1211R | 9080FB1611R |
| | 2-pole | 9080FB2611M | 9080FB2611CC | 9080FB2211 | 9080FB2611 | 9080FB2211R | 9080FB2611R |
| | 3-pole | 9080FB3611M | 9080FB3611CC | 9080FB3211 | 9080FB3611 | 9080FB3211R | 9080FB3611R |

## Power Distribution Blocks

| Splitter Blocks | | Aluminum Lugs | | | | Copper Lugs | |
|---|---|---|---|---|---|---|---|
| **Main wire (Number of wires in)** | | (1) #14–2 AWG | (1) #14–2/0 AWG | (1) #6–350 kcmil | (1) #6–600 kcmil | (1) #18–1/0 AWG | (1) #6–250 kcmil |
| **Branch wire (Number of wires out)** | | (1) #14–2 AWG | (1) #14–2/0 AWG | (1) #6–350 kcmil | (1) #6–600 kcmil | (1) #18–1/0 AWG | (1) #6–250 kcmil |
| **Maximum voltage rating** | | 600 | 600 | 600 | 600 | 600 | 600 |
| **Maximum current rating—Cu wire** | | 115 | 175 | 310 | 420 | 150 | 255 |
| | 1-pole | 9080LBA161101 | 9080LBA162101 | 9080LBA163101 | 9080LBA164101 | 9080LBC162101 | 9080LBC163101 |
| | 2-pole | – | 9080LBA262101 | – | – | – | – |
| | 3-pole | 9080LBA361101 | 9080LBA362101 | 9080LBA363101 | 9080LBA364101 | 9080LBC362101 | 9080LBC363101 |

| Splitter Blocks | | Aluminum Lugs | | | | | |
|---|---|---|---|---|---|---|---|
| **Main wire (Number of wires in)** | | (1) #14–2 AWG | (1) #14–2/0 AWG | (1) #6–400 kcmil | (1) #6–400 kcmil | (1) #6–400 kcmil | (1) #4–500 kcmil |
| **Branch wire (Number of wires out)** | | (4) #18–10 AWG | (4) #14–4 AWG | (4) #14–2 AWG | (6) #14–2 AWG | (8) #14–2 AWG | (12) #14–2 AWG |
| **Maximum voltage rating** | | 600 | 600 | 600 | 600 | 600 | 600 |
| **Maximum current rating—Cu wire** | | 115 | 175 | 335 | 335 | 335 | 380 |
| | 1-pole | 9080LBA161104 | 9080LBA162104 | 9080LBA163104 | 9080LBA163106 | 9080LBA164108 | 9080LBA165112 |
| | 2-pole | 9080LBA261104 | 9080LBA262104 | 9080LBA263104 | 9080LBA263106 | 9080LBA264108 | 9080LBA265112 |
| | 3-pole | 9080LBA361104 | 9080LBA362104 | 9080LBA363104 | 9080LBA363106 | 9080LBA364108 | 9080LBA365112 |



Other versions: **please consult your Schneider Electric agency.**

# Telefast® pre-wired system
## Passive I/O sub-bases « Discrete »


| Type of connection sub-base | | Optimum | | | |
|---|---|---|---|---|---|
| **Number of channels** | | 16 | 16 | | |
| **Max. current per channel** | | 0.5 A | 0.5 A | | |
| **Control voltage / output voltage** | | 24 VDC / 24 VDC | 24 VDC / 24 VDC | | |
| **LED per channel** | | – | With | | |
| **Number of terminals per channel/on row number** | | 1/2 | 1/1 | 2/2 | 3/3 |
| **Dimensions (WxDxH)** | | 55 x 59 x 67 mm | 106 x 60 x 49 mm | | |
| **References** | | – | **ABE7H16C11** | **ABE7H16C21** | **ABE7H16C31** |
| | Cable L = 1 m | **ABE7H20E100** (1) | – | – | – |
| | Cable L = 2 m | **ABE7H20E200** (1) | – | – | – |
| | Cable L = 3 m | **ABE7H20E300** (1) | – | – | – |
| Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m (2) | | | **ABFH20H100** | | |

*(1) Connection cable supplied for PLCs.*

*(2) For a 2 m length cable, replace the number 1 in the reference by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).*

| Type of connection sub-base | Universal | | | | | |
|---|---|---|---|---|---|---|
| **Number of channels** | 16 | | | | | |
| **Max. current per channel** | 0.5 A | | | | | |
| **Control voltage / output voltage** | 24 VDC / 24 VDC | | | | | |
| **LED per channel** | – | With | – | – | With | With |
| **Number of terminals per channel/on row number** | 1/1 | 1/1 | 1/2 | 2/2 | 2/2 | 3/3 |
| **Dimensions (WxDxH)** | 125 x 58 x 70 mm | | 84 x 58 x 70 mm | 125 x 58 x 70 mm | | |
| **References** | **ABE7H16R10** | **ABE7H16R11** | **ABE7H16R50** | **ABE7H16R20** | **ABE7H16R21** | **ABE7H16R31** |
| Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: **ABFH20H100** (2) | | | | | | |

*(2) For a 2 m length cable, replace the number 1 in the reference by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).*

| Type of connection sub-base | | | For counter and analogue channels | Passive distribution with shielding continuity | Distribution and supply of analogue channels |
|---|---|---|---|---|---|
| **Number of channels** | | | 1 counter channel (3) | 8 | 8 |
| **Max. current per channel** | | | 25 mA | 25 mA | 25 mA |
| **Control voltage / output voltage** | | | 24 VDC / 24 VDC | | |
| **Number of terminals per channel** | | | 2 | 2 or 4 | 2 or 4 |
| **Dimensions (WxDxH)** | | | 143 x 58 x 70 mm | 125 x 58 x 70 mm | 125 x 58 x 70 mm |
| **References** | | | **ABE7CPA01** | **ABE7CPA02** | **ABE7CPA03** |
| Connection cable recommended for Modicon PLCs (4) | TSX Micro | L = 2.5 m | **TSXCCPS15** | – | – |
| | Premium | L = 3 m | **TSXCAP030** | | |

*(3) Or 8 inputs + 2 outputs, analogue.*

*(4) Connection cables available for other PLCs, please refer to your Schneider Electric agency.*

# Telefast® pre-wired system

## Sockets with plug-in relays and terminals

| Type of connection sub-base | With soldered solid-state relay inputs | | With soldered solid-state relay outputs | | With soldered electro-mechanical relay outputs | |
|---|---|---|---|---|---|---|
| **Number of channels** | 16 | | 16 | | 16 | |
| **Max. current per channel** | 12 mA | | 0.5 A | | 2 A | 5 A |
| **Input voltage / output voltage** | 24 VDC / - | 110 VAC / - | - / 24 VDC | | - / 5…30 VDC, 250 VAC | |
| **Number of contacts** | – | | – | | 1 N/O | |
| **Polarity distribution** | – | | – | | (1) | Volt-free |
| **Number of terminals per channel** | 2 | | | | | |
| **Dimensions (WxDxH)** | 206 x 58 x 77 mm | | | | | |
| **References** | **ABE7S16E2B1** | **ABE7S16E2F0** | **ABE7S16S2B0** (2) | **ABE7S16S1B2** | **ABE7R16S111** | **ABE7R16S210** |
| Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: **ABFH20H100** (3) | | | | | | |

*(1) Contact common per group of 8 channels.*

*(2) With fault detection signal (can only be used with modules with protected outputs).*

*(3) For a 2 m length cable, replace the number 1 in the reference by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomesABFH20H200).*

| Type of connection sub-base | With plug-in electromechanical relays | | | | | |
|---|---|---|---|---|---|---|
| **Number of channels** | 16 | | | | | |
| **Max. current per channel** | 5 A | 2.5 A | | | 4 A | 5 A |
| **Control voltage / output voltage** | 24 VDC / 5…24 VDC, 230 VAC | | | | | |
| **Number of contacts** | 1 N/O | | | 1 C/O | | 2 C/O |
| **Polarity distribution** | (4) | (5) | Volt-free | | | |
| **Number of terminals per channel** | 2 | 2 or 3 | | | 2 to 6 | |
| **Dimensions (WxDxH)** | 110x54x89 mm | 211 x 64 x 89 mm | | | 272 x 74 x 89 mm | |
| **References** | **ABE7R16T111** | **ABE7R16T212** | **ABE7R16T210** | **ABE7R16T230** | **ABE7R16T330** | **ABE7R16T370** |
| Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: **ABFH20H100** (6) | | | | | | |

*(4) Contact common per group of 4 channels.*

*(5) Common on both poles.*

*(6) For a 2 m length cable, replace the number 1 in the reference by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).*

## Connection cables for PLCs (7)

| Input/Output functions | | Discrete | Analogue | Analogue and counter | Counter | Axis control |
|---|---|---|---|---|---|---|
| **References** | Cable L = 1 m | **ABFH20H100** | – | – | – | – |
| | Cable L = 2 m | **ABFH20H200** | **ABFY25S200** | – | – | **TSXCXP213** |
| | Cable L = 2.5 m | – | – | **TSXCCPS15** | **TSXCCPH15** | – |
| | Cable L = 3 m | **ABFH20H300** | **TSXCAP030** | – | – | – |
| | Cable L = 6 m | – | – | – | – | **TSXCXP613** |

*(7) Modicon, TSX Micro and Premium PLCs.*

*For other connection cables and accessories, please refer to your Schneider Electric agency.*

# Telefast® connection interfaces

## Sub-bases for Twido controllers

| Type of connection sub-base | Discrete inputs/outputs | | |
|---|---|---|---|
| | | | Solid-state and relay |
| Number of channels | 20 | 20 | 20 |
| Number of inputs | 12 I (1 common for 12 channels) | | |
| Number of outputs | 8 O (1 common for 8 channels) | 8 O, fuse protected (1 common for 8 channels) | 2 O, solid-state<br>6 O, relay (1 common for 6 chnls.) |
| Voltage / current of inputs | 24 VDC / 5…7 mA | | |
| Voltage / current of outputs | 24 VDC / 0.3 A | | Solid-state: 24 VDC / 2 A<br>Relay: 5…30 VDC, 250 VAC / 3 A |
| LED per channel | – | With | – |
| Number of terminals per channel/row number | 2/2 | | |
| Dimensions (WxDxH) | 130 x 62.5 x 83 mm | | |
| References | **ABE7B20MPN20** | **ABE7B20MPN22** | **ABE7B20MRM20** |



## Sub-base for input/output module

| Type of connection sub-base | Discrete outputs | | | |
|---|---|---|---|---|
| | | | | Relay |
| Number of channels | 16 | 16 | 16 | 16 |
| Type of outputs | 16 (1 common for 16 channels) | 16 O (1 common for 16 channels) | 16 O, fuse protected (1 common for 16 channels) | 16 O (1 common for 4 channels) |
| Voltage / current of outputs | 24 VDC / 5 mA | 24 VDC / 0.1 A | | Relay: 5…30 VDC, 250 VAC / 3 A |
| LED per channel | – | | With | – |
| Number of terminals per channel/row number | 2/2 | | | |
| Dimensions (WxDxH) | 106 x 60 x 49 mm | | 130 x 62.5 x 83 mm | |
| References | **ABE7E16EPN20** | **ABE7E16SPN20** | **ABE7E16SPN22** | **ABE7E16SRM20** |

## Connection cables for Twido

| Type of cable | | | For linking Twido and Telefast sub-base | |
|---|---|---|---|---|
| For use with | | | TWDLMDA20DTK/40DTK | TWDDI16DK/32DK/DDO16TK/32TK |
| Type of connectors | | | HE10, 26-pin, at either end | HE10, 20-pin, at either end |
| References | Cable | L = 0.5 m | **ABFT26B050** | **ABFT20E050** |
| | | L = 1 m | **ABFT26B100** | **ABFT20E100** |
| | | L = 2 m | **ABFT26B200** | **ABFT20E200** |

## Accessories

| Type of accessory | Optional clip-in terminals | |
|---|---|---|
| Number of linked terminals | 20 | 12 + 8 |
| References | **ABE7BV20** | **ABE7BV20TB** |

# Advantys ABE9 — Passive splitter boxes

## IP 67

| Type of connection | | | To PLC using multicore cable | |
|---|---|---|---|---|
| **Number of channels** | | | 4 | 8 |
| **Type of female connector** | | | M12, 5-pin | M12, 5-pin |
| **Max. number of signals** | | | 8 | 16 |
| **Max. current per channel** | | | 4 A | |
| **Max. current per splitter box** | | | 16 A (1 mm²) | |
| **Product certification** | | | cULus | |
| **Dimensions (WxDxH)** | | | 50.2 x 42 x 92.2 mm | 50.2 x 42 x 149.2 mm |
| **References** | Without LEDs | Cable L = 5 m | **ABE9C1240L05** | **ABE9C1280L05** |
| | | Cable L = 10 m | **ABE9C1240L10** | **ABE9C1280L10** |
| | With LEDs (1) | Cable L = 5 m | **ABE9C1241L05** | **ABE9C1281L05** |
| | | Cable L = 10 m | **ABE9C1241L10** | **ABE9C1281L10** |

*(1) Green LED: power supply status, yellow LED: channel status.*

| Type of connection | | To PLC using M23 connector | |
|---|---|---|---|
| **Number of channels** | | 4 | 8 |
| **Type of female connector** | | M12, 5-pin | M12, 5-pin |
| **Max. number of signals** | | 8 | 16 |
| **Max. current per channel** | | 4 A | |
| **Max. current per splitter box** | | 16 A | |
| **Product certification** | | cULus | |
| **Dimensions, W X D x H** | | 50.2 x 36.5 x 92.2 mm | 50.2 x 36.5 x 149.2 mm |
| **References** | Without LEDs | **ABE9C1240C23** | **ABE9C1280C23** |
| | With LEDs (1) | **ABE9C1241C23** | **ABE9C1281C23** |

*(1) Green LED: power supply status, yellow LED: channel status.*

## Accessories

| Type of accessory | | Splitter boxes w/o cable | | Terminal connectors | | Sealing plugs |
|---|---|---|---|---|---|---|
| | | Without LEDs | With LEDs | Cable L = 5 m | Cable L = 10 m | (sold in lots of 10) |
| **References** | 4-channel | **ABE9C1240M** | **ABE9C1241M** | **ABE9XCA1405** | **ABE9XCA1410** | **–** |
| | 8-channel | **ABE9C1280M** | **ABE9C1281M** | **ABE9XCA1805** | **ABE9XCA1810** | **–** |
| | for Ø12 connector | **–** | **–** | **–** | **–** | **FTXCM12B** |



Other versions: **please consult your Schneider Electric agency.**

# Advantys OTB

## IP 20 distributed I/O, optimised block

### Interface modules


| Discrete Type of bus | | CANopen Machine bus | Ethernet TCP/IP network (2) | Modbus Series network |
|---|---|---|---|---|
| **Number of I/Os** | | 20 I/O | | |
| **Number of inputs** | | 12 inputs 24 VDC IEC type 1 | | |
| **Number of outputs** | | 6 relay outputs and 2 solid state 24 VDC outputs | | |
| **Connection method** | | Removable terminal block | | |
| **Number of I/O expansion modules** (1) | | 7 discrete or analogue input/output modules, or connection accessories | | |
| **Maximum I/O configuration** | | With interface module base: 132 with screw terminal I/O expansion; 244 with HE10 connector I/O expansion; up to 48 analogue channels | | |
| **Supply voltage** | | 24 VDC | | |
| **Counting** | 5 kHz | 2 channels, 32 bits (0…4 294 967 295 points) dedicated discrete inputs -up counting/down counting with preset | | |
| | 20 kHz | 2 channels, 32 bits (0…4 294 967 295 points) up/down counting, up counting, down counting, frequency meter | | |
| **Pulse generator, 7 kHz** | | 2 PWM function channels (output with pulse width modulation) or PLS function (pulse generator output) | | |
| **Dimension (WxDxH)** | | 55x70x90 mm | | |
| **References** | | **OTB1C0DM9LP** | **OTB1E0DM9LP** | **OTB1S0DM9LP** |

*(1) For the references of discrete I/O and analogue expansion modules, refer to the Twido or Advantys OTB catalogue.*

*(2) Transparent Ready: Class A10.*

3

## Accessories

| Type of accessory | Commoning modules | Documentation |
|---|---|---|
| **Usage** | For grouping input or output commons, max 8 A | User guides for hardware & software |
| **Positioning** | Inter-module | – |
| **Référence** | **OTB9ZZ61JP** | **FTXES00** |

# Advantys FTB

# IP 67 distributed I/O, optimised block

## Interface modules, plastic enclosure

| Type of module | | CANopen machine bus | DeviceNet Fieldbus | ProfiBus Fieldbus | InterBus Fieldbus |
|---|---|---|---|---|---|
| **Number of channels** | | 8 | | | |
| **Type of female connector** | | M12, 5-pin | | | |
| **Max. voltage / current of inputs** | | 24 VDC type 2/200 mA | | | |
| **Max. voltage / current of outputs** | | 24 VDC/1.6 A | | | |
| **Max. current per splitter box** | | 8 A | | | |
| **Product certification** | | cULus | | | |
| **Dimensions, W X D x H** | | 63 x 50.5 x 220 mm | | | 63 x 69 x 220 mm |
| **Diagnostics** | Splitter boxes | By LED for: bus and I/O undervoltage + I/O short-circuit + I/O power supply | | | |
| | Channels | By LED for: I/O short-circuit + wire breakage fault + I/O fault | | | |
| **References** | 16 inputs | **FTB1CN16EP0** | **FTB1DN16EP0** | **FTB1DP16EP0** | **FTB1IB16EP0** |
| | 8 inputs/8 outputs | **FTB1CN08E08SP0** | **FTB1DN08E08SP0** | **FTB1DP08E08SP0** | **FTB1IB08E08SP0** |
| | 12 inputs/4 outputs | **FTB1CN12E04SP0** | **FTB1DN12E04SP0** | **FTB1DP12E04SP0** | **FTB1IB12E04SP0** |
| | 16 configurable inputs/outputs | **FTB1CN16CP0** | **FTB1DN16CP0** | **FTB1DP16CP0** | **FTB1IB16CP0** |

## Interface modules, metal enclosure

| Type of module | | CANopen | DeviceNet | ProfiBus |
|---|---|---|---|---|
| **Number of channels** | | 8 | | |
| **Type of female connector** | | M12, 5-pin | | |
| **Max. voltage / current of inputs** | | 24 VDC type 2/200 mA | | |
| **Max. voltage / current of outputs** | | 24 VDC/1.6 A | | |
| **Max. current per splitter box** | | 8 A | | |
| **Product certification** | | cULus | | |
| **Dimensions (WxDxH)** | | 62.7 x 38.9 x 224.7 mm | | |
| **Diagnostics** | Splitter boxes | By LED for: bus and I/O undervoltage + I/O short-circuit + I/O power supply | | |
| | Channels | By LED for: I/O short-circuit + wire breakage fault + I/O fault | | |
| **References** | 16 inputs | **FTB1CN16EM0** | **FTB1DN16EM0** | **FTB1DP16EM0** |
| | 8 inputs/8 outputs/configurable outputs | **FTB1CN08E08CM0** | **FTB1DN08E08CM0** | **FTB1DP08E08CM0** |
| | 16 configurable inputs/outputs | **FTB1CN16CM0** | **FTB1DN16CM0** | **FTB1DP16CM0** |





Other versions: **please consult your Schneider Electric agency.**

# IP 20 Distributed I/O, modular system

## Communication modules

| Type of module NIM | | Ethernet TCP/IP network |
|---|---|---|
| **Binary speed** | | 10 Mbps |
| **Protocol** | | Modbus TCP/IP |
| **Transparent Ready** | Class | B20 |
| | Embedded Web server | Standard services |
| | Ethernet services | SNMP agent, FDR client (replacement of faulty equipment), BOOTP (allocation of IP addresses by a server) |
| **Max. number of addressable I/O modules** | | 32 per island |
| **Dimensions (WxDxH)** | | 40x70x128,3 mm |
| **Reference** | Standard | **STBNIP2212** |



| Type of module NIM | | Machine bus | Fieldbus | | |
|---|---|---|---|---|---|
| | | CANopen | Fipio | InterBus | Profibus DP |
| **Max. number of addressable I/O modules** | | 32 per island (1) (2) | 32 per island (1) | 32 per island (1) (2) | 32 per island (1) (2) |
| **Binary speed** | | 10 K…1 Mbps | 1 Mbps | 0.5 Mbps | 9.6 K…12 Mbps |
| **Dimensions (WxDxH)** | | 40x70x128,3 mm | | | |
| **Reference** | Standard | **STBNCO2212** | **STBNFP2212** | **STBNIB2212** | **STBNDP2212** |
| | Basic | **STBNCO1010** | **–** | **STBNIB1010** | **STBNDP1010** |

*(1) On 7 segments max.*

*(2) 12 per island on 1 segment max for basic versions.*

| Type of module | | Other networks | | |
|---|---|---|---|---|
| | | Modbus Plus | DeviceNet | |
| **Max. number of addressable I/O modules** | | 32 per island | 32 per island | 12 per island |
| **Speed** | | 1 Mbps | 125, 250 or 500 Kbps | 125, 250 or 500 Kbps |
| **Dimensions (WxDxH)** | | 40x70x128,3 mm | | |
| **Reference** | Standard | **STBNMP2212** | **STBNDN2212** | **–** |
| | Basic | **–** | **–** | **STBNDN1010** |

## Connection accessories

| Type of accessory | | Removable terminals for | |
|---|---|---|---|
| | | 24 VDC power supply | DeviceNet |
| **Use** | | All communication modules | Network link DeviceNet module |
| **Reference** | Screw terminals | **STBXTS1120** (1) | **STBXTS1111** |
| | Spring terminals | **STBXTS2120** (1) | **STBXTS2111** |

*(1) For spare part ordering purpose only, sold in lots of 10 only for spares parts.(STBXTSp120 are delivered systematicaly with STBN●●●●●●).*

| | |
|---|---|
| **Marking label sheets** | **STBXMP6700** |
| **Screwdriver** | **STBXTT0220** |

*Connection accessories: See www.schneider-electric.com.*

## Power distribution modules (1)


| Type of module | | | PDM | | | | Auxiliary Power supply |
|---|---|---|---|---|---|---|---|
| **Connection by removable terminals** | | | Screw STBXTS1130 (2) (3)<br>Spring STBXTS2130 (2) (3) | | | | Screw STBXTS1120 (2)<br>Spring STBXTS2120 (2) |
| **Supply voltage** | | | 24 VDC | | 115…230 VAC | | 24 VDC |
| **Maximum current** | Inputs (4) | | 4 A at 30°C, 2.5 A at 60°C | – | 5 A at 30°C, 2.5 A at 60°C | – | – |
| | Outputs (4) | | 8 A at 30°C, 5 A at 60°C | – | 10 A at 30°C, 2.5 A at 60°C | – | – |
| | Inputs/Outputs (4) | | – | 4 A at 30°C, 2.5 A at 60°C | – | 5 A at 30°C, 2.5 A at 60°C | – |
| | Logique interne 5 V | | – | – | – | – | 1.2 A |
| **Sensor/actuator bus voltage range** | | | 19.2…30 VDC | | 85…265 VAC | | – |
| **Dimensions (WxDxH)** | | | 18.4x70x128.3 mm | | | | |
| **Reference** | Module | Standard | **STBPDT3100K** | – | **STBPDT2100K** | – | **STBCPS2111K** |
| | | Basic | **–** | **STBPDT3105K** | **–** | **STBPDT2105K** | |
| | Base | | **STBXBA2200** (5) | | **STBXBA2200** (5) | | **STBXBA2100** (5) |

*(1) Process power supplies see chapter 2 "Power supply".*
*(2) For spare part ordering purpose only, sold in lots of 10.*
*(3) PDM connector keying pin kit STBXMP7810.*
*(4) PDM fuse kit STBXMP5600.*
*(5) For spare part ordering purpose only.*

## Bus extension modules for standard range



| Type of module | | | "EOS" End of segment | "BOS" Beginning of segment | Extension for CANopen connection devices |
|---|---|---|---|---|---|
| **Connection by removable terminals** | | | **–**<br>**–** | Screw STBXTS1120 (2)<br>Spring STBXTS2120 (2) | Screw STBXTS1110 (3)<br>Spring STBXTS2110 (3) |
| **Use** | | | For placing at end of segment (except for the last) | For placing at head of each extension segment | For placing at end of last segment |
| **Dimensions (WxDxH)** | | | 18.4x70x128.3 mm | | |
| **Reference** | Module | Standard | **STBXBE1100K** | **STBXBE1300K** | **STBXBE2100K** |
| | Base | | **STBXBA2300** (5) | **STBXBA2300** (5) | **STBXBA2000** (5) |

*(2) To be ordered separately, sold in lots of 10.*
*(3) For spare part ordering purpose only, sold in lots of 20.*
*(5) For spare part ordering purpose only.*

## Software and memory card

| Type | | Advantys STB, OTB, FTM, FTB configuration software (PC connection cable supplied) | | | | | Removable memory card |
|---|---|---|---|---|---|---|---|
| **Software User Guide** | | Single station | 3 pack | 10 pack | Unlimited Site | System Aliance Integrator | – |
| **Memory size** | | **–** | | | | | 32 Ko |
| **Reference** | | **STBSPU1000** | **STBSPU1003** | **STBSPU1011** | **STBSPU1130** | **STBSPU1010** | **STBXMP4440** |
| | Hardware User Guide | **STBSUS8800** | | | | | |

## Connection accessories

| Type of accessory | Câble d'extention de bus d'ilot | | | | |
|---|---|---|---|---|---|
| **Length** | 0.3 m | 1 m | 4.5 m | 10 m | 14 m |
| **Reference** | **STBXCA1001** | **STBXCA1002** | **STBXCA1003** | **STBXCA1004** | **STBXCA1006** |
| | **Bus termination module or plug** | | **Programmation connection cable L= 2 m** | | |
| **Reference** | **STBXMP1100** | | **STBXCA4002** | | |

*Connection accessories: See www.schneider-electric.com.*



Other versions: **please consult your Schneider Electric agency.**

# IP 20 Distributed I/O, modular system

## Discrete modules

| Type of module | | | Discrete inputs | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Connection by removable terminals** (1) | | Screw (2) | STBXTS1100 | | | STBXTS1180 | STBXTS1110 | | |
| | | Spring (2) | STBXTS2100 | | | STBXTS2180 | STBXTS2110 | | |
| **Number of channels** | | | 2 | 4 | 6 | 16 | 2 | 2 (isolated) | 2 |
| **Input voltage** | | | 24 VDC | | | | 115 VAC | | 230 VAC |
| **Dimensions (WxDxH)** | | | 13.9x70x128.3 mm | | | | 18.4x70x128.3 mm | | |
| **Reference** | Module | Standard | **STBDDI3230K** | **STBDDI3420K** | **STBDDI3610K** | – | **STBDAI5230K** | **STBDAI5260K** | **STBDAI7220K** |
| | | Basic | – | **STBDDI3425K** | **STBDDI3615K** | **STBDDI3725●●** (4) | – | – | – |
| | Base (3) | | **STBXBA1000** | | | **STBXBA3000** | **STBXBA2000** | | |

| Type of module | | | Discrete solid state outputs | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Connection by removable terminals** (1) | | Screw (2) | STBXTS1100 | | | | | | STBXTS1180 |
| | | Spring (2) | STBXTS2100 | | | | | | STBXTS2100 |
| **Number of channels** | | | 2 | | 4 | | 6 | | 16 |
| **Output voltage** | | | 24 VDC | | 24 VDC | | 24 VDC | | 24 VDC |
| **Output current** | | | 0.5 A | 2 A | 0.25 A | 0.5 A | 0.25 A | 0.5 A | 0.5 A |
| **Dimensions (WxDxH)** | | | 13.9x70x128.3 mm | | | | | | |
| **Reference** | Module | Standard | **STBDDO3200K** | **STBDDO3230K** | – | **STBDDO3410K** | – | **STBDDO3600K** | – |
| | | Basic | – | – | **STBDDO3415K** | – | **STBDDO3605K** | – | **STBDDO3705●●** (5) |
| | Base (3) | | **STBXBA1000** | | | | | | **STBXBA3000** |

| Type of module | | | Discrete outputs | | | |
|---|---|---|---|---|---|---|
| | | | Triac | | Relay | |
| **Connection by removable terminals** (1) | | Screw (2) | STBXTS1100 | | | |
| | | Spring (2) | STBXTS2100 | | | |
| **Number of channels** | | | 2 | 2 (isolated) | 2 “OF” | 2 “O+F” |
| **Output voltage** | | | 115…230 VAC | 115 VAC | 24 VDC ou 115…230 VAC | |
| **Output current** | | | 2 A à 30°C, 1 A à 60°C | | 2 A par contact | 7 A par contact |
| **Dimensions (WxDxH)** | | | 18.4x70x128.3 mm | | | 28.1x70x128.3 mm |
| **Reference** | Module | Standard | **STBDAO8210K** | **STBDAO5260K** | **STBDRC3210K** | **STBDRA3290K** |
| | Base (3) | | **STBXBA2000** | | | **STBXBA3000** |

*(1) For spare part ordering purpose only, sold in lots of 20.*

*(2) I/O connector keying pin kit STBXMP7800.*

*(3) Module keying pin kit STBXMP7700. For spare part ordering purpose only.*

*(4) if connection on Telefast2 order STBXTS6510 or connection on Telefast Twido order STBXTS5510. Add KC for spring clamp & KS for screw clamp terminals.*

*(5) if connection on Telefast2 order STBXTS6610 or connection on Telefast Twido order STBXTS5610. Add KC for spring clamp & KS for screw clamp terminals.*

*Connection accessories: See www.schneider-electric.com.*

## Analog modules


| Type of module (1) | | | Analog inputs | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Connection by removable terminals** | | | Screw STBXTS1100 (2) / Spring STBXTS2100 (2) | | | | | | | |
| **Number of channels** | | | 2 | | | | 4 | | 8 | 2 |
| **Input signal** | | | - 10…+10 V | 0…+10 V | 0…20 mA | 4…20 mA | 4...20 / 0...20 mA | Selectable | Selectable | Multigamme (3) |
| **Resolution** | | | 9 bits + sign | 10 bits | 12 bits | 10 bits | 15 bits + sign | | | |
| **Dimensions (WxDxH)** (mm) | | | 13,9x70x128,3 | | | | 18,4x70x128,3 | | | 13,9x70x128,3 |
| **Reference** | Module | Standard | – | – | **STBACI1230K** | – | **STBACI0320K** | **STBAVI0300K** | **STBACI1400K** (5) | **STBART0200K** |
| | | | – | – | – | – | **STBACI8320K** (4) | – | **STBAVI1400K** (6) | – |
| | | Basic | **STBAVI1275K** | **STBAVI1255K** | – | **STBACI1225K** | – | – | – | – |
| | Base (8) | | **STBXBA1000** | | | | **STBXBA2000** | | | **STBXBA1000** |


| Type of module (1) | | | Analog outputs | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Connection by removable terminals** | | | Screw STBXTS1100 (2) / Spring STBXTS2100 (2) | | | | | | | |
| **Number of channels** | | | 1 | 2 | | | | | | |
| **Output signal** | | | 4...20 mA | - 0...+10 , - 10...+10 V | 0...+10 V | -10 V...+10 V | 0...20 mA | 4...20 mA | 4...20 mA | Selectable (6) |
| **Resolution** | | | 15 bits + sign | 11 bits + sign or 12 bits | 10 bits | 9 bits + sign | 12 bits | 10 bits | 15 bits + sign | |
| **Dimensions (WxDxH)** (mm) | | | 18,4x70x128,3 | 13,9x70x128,3 | | | | | 18,4x70x128,3 | |
| **Reference** | Module | Standard | **STBACO0120K** | **STBAVO1250K** | **–** | **–** | **STBACO1210K** | **–** | **STBACO0220K** | **STBAVO0200K** |
| | | Basic | **–** | – | **STBAVO1255K** | **STBAVO1265K** | **–** | **STBACO1225K** | **–** | **–** |
| | Base (8) | | **STBXBA2000** | **STBXBA1000** | | | | | **STBXBA2000** | |

## Application-specific modules


| Type of module (1) | | | For motor starters TeSys model U | Counter |
|---|---|---|---|---|
| **Connection by connector** | | | 4 RJ45 | Spring STBXTS2150 (2) |
| **Number of inputs/outputs** | | | 12 E / 8 S | 4 E / 2 S |
| **Input voltage** | | | 24 VDC | 24 VDC |
| **Output voltage/current** | | | 24 VDC/0.1 A per channel | 24 VDC/0.5 A |
| **Number of channels** | | | 4 starters-controllers | 1 counter channel 40 kHz |
| **Dimensions (WxDxH)** (mm) | | | 28.1x70x128.3 | |
| **Reference** | Module | Standard | **STBEPI2145K** | **STBEHC3020KC** |
| | Base (8) | | **STBXBA3000** | |
| | Connection cables (8) | | (7) | **–** |
| | | | (7) | **–** |

*(1) Grounding kit (conseilled for counter > 40 kHz): STBXSP3000 (connecting support) + STBXSP3010 (1.5…6 mm² cables) + STBXSP3020 (5…11 mm² cables).*
*(2) For spare part ordering purpose only, sold in lots of 20.*
*(3) Multirange temperature probe thermocouples B, E, J, K, R, S, T. Thermal probe Pt 100, Pt 1000, Ni 100, Ni 1000, cu 10, ± 80 mV.*
*(4) 4 HART-tolerant channels (5) Input signal selectable / channel 0…20 mA and 4…20 mA (6) Input signal selectable / channel 1…5 VDC, 0…5 VDC, 0…10 VDC, ± 5 VDC and ± 10 VDC.*
*(7) LU9R03 (0,3 m), LU9R10 (1 m), 490NTW00002 (2 m), LU9R30 (3 m), 490NTW00005 (5 m), 490NTW00012 (12 m).*
*(8) For spare part ordering purpose only.*



Other versions: **please consult your Schneider Electric agency.**

# IP 67 distributed I/O, modular system

## Interface modules



| Type of bus module | CANopen machine bus | DeviceNet fieldbus | Profibus fieldbus |
|---|---|---|---|
| Max. number of Discrete I/O | 256 | | |
| Max. number of splitter boxes | 16 | | |
| Bus module supply voltage | 24 V DC | | |
| Bus module max. supply current | 9 A | | |
| Product certification | UL/CSA | CULus | |
| Dimensions (WxDxH) | 50 x 50.3 x 151 mm | | |
| References | **FTM1CN10** | **FTM1DN10** | **FTM1DP10** |



## Splitter boxes



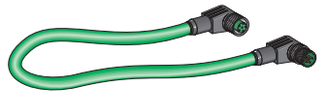

| Type of splitter box | | Discrete inputs/outputs Compact | | Expandable | |
|---|---|---|---|---|---|
| Input voltage | | 24 V DC/type 2/200 mA | | 24 V DC/type 2/200 mA | |
| Output voltage | | 24 V DC | | 24 V DC | |
| Type of output | | Solid-state | | Solid-state | |
| Output current | | 0.5 A | | 0.5 A | |
| Maximum supply current by internal bus | | 4 A | | 4 A | |
| Diagnostics | | Short-circuit on I/O, wire breakage fault, sensor/actuator fault | | | |
| Dimensions (WxDxH) | | 30 x 34.5 x 126 mm | | 30 x 34.5 x 151 mm | |
| I/O connection | | M8 connector | M12 connector | M8 connector | M12 connector |
| References | 8 inputs | **FTM1DE08C08** | **FTM1DE08C12** | **FTM1DE08C08E** | **FTM1DE08C12E** |
| | 8 configurable inputs/outputs | **FTM1DD08C08** | **FTM1DD08C12** | **FTM1DD08C08E** | **FTM1DD08C12E** |
| | 16 inputs | – | **FTM1DE16C12** (1) | – | **FTM1DE16C12E** (1) |
| | 16 configurable inputs/outputs | – | **FTM1DD16C12** (1) | – | **FTM1DD16C12E** (1) |

*(1) Dimensions: 50 x 34.5 x 126 mm.*


| Type of splitter box | | Analogue inputs/outputs Compact | | | |
|---|---|---|---|---|---|
| Type of inputs/outputs | | Current | | Voltage | |
| Measuring range | | 0…20 mA/4…20 mA | | ± 10 V DC/0…10 V DC | |
| Diagnostics | | Short-circuit on I/O, wire breakage fault, sensor/actuator fault | | | |
| Conversion time | | ≤ 2 ms per channel | | | |
| Dimensions (WxDxH) | | 30 x 34.5 x 126 mm | | | |
| Resolution | | 16 bit | 12 bit | 15 bit + sign | 11 bit + sign |
| References | 4 inputs | **FTM1AE04C12C** | – | **FTM1AE04C12T** | – |
| | 4 outputs | – | **FTM1AS04C12C** | – | **FTM1AS04C12T** |

# Accessories for distributed I/O FTM (1)

## Internal bus connection cables

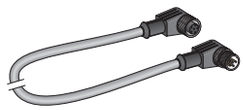


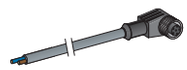
*(1) For sensor/actuator cabling accessories, see page 3/48.*

| Type of cable | | | For linking bus module and splitter boxes |
|---|---|---|---|
| **Type of connector** | | | Elbowed M12, 6-pin, at either end |
| **References** | Cable | L = 0.3 m | **FTXCB3203** |
| | | L = 0.6 m | **FTXCB3206** |
| | | L = 1 m | **FTXCB3210** |
| | | L = 2 m | **FTXCB3220** |
| | | L = 3 m | **FTXCB3230** |
| | | L = 5 m | **FTXCB3250** |



## Auxiliary power supply connection cables





| Type of cable | | | For connection of 24 V DC auxiliary power supply | |
|---|---|---|---|---|
| **Type of connector** | | | Elbowed M12, 6-pin, at either end | Elbowed M12, 6-pin, at one end (other end free) |
| **References** | Cable | L = 0.3 m | **FTXCA3203** | **FTXCA3103** |
| | | L = 0.6 m | **FTXCA3206** | **FTXCA3106** |
| | | L = 1 m | **FTXCA3210** | **FTXCA3110** |
| | | L = 2 m | **FTXCA3220** | **FTXCA3120** |
| | | L = 3 m | **FTXCA3230** | **FTXCA3130** |
| | | L = 5 m | **FTXCA3250** | **FTXCA3150** |

## Accessories

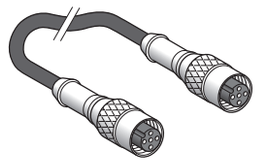
| Type | Line terminator for end of internal bus |
|---|---|
| **Type of connector** | M12 |
| **References** | **FTXCBTL12** |



Other versions: **please consult your Schneider Electric agency.**

# Accessories for distributed I/O FTB/FTM (1)

## Bus connection cables



*(1) For sensor and actuator cabling accessories: see page 3/52.*

| Type of bus | | | CANopen machine bus | DeviceNet fieldbus | ProfiBus fieldbus | InterBus fieldbus |
|---|---|---|---|---|---|---|
| **Type of female connector** | | | M12, 5-pin, at either end | | | – |
| **Connector coding** | | | A encoded | | B encoded | – |
| **References** | Cable | L = 0.3 m | **FTXCN3203** | | **FTXDP3203** | – |
| | | L = 0.6 m | **FTXCN3206** | | **FTXDP3206** | **FTXIB1206** (2) |
| | | L = 1 m | **FTXCN3210** | | **FTXDP3210** | **FTXIB1210** (2) |
| | | L = 2 m | **FTXCN3220** | | **FTXDP3220** | **FTXIB1220** (2) |
| | | L = 3 m | **FTXCN3230** | | **FTXDP3230** | – |
| | | L = 5 m | **TXCN3250** | | **FTXDP3250** | **FTXIB1250** (2) |

*(2) Reference includes the Bus connection cable + the power supply cable.*

3

## Power supply connection cables

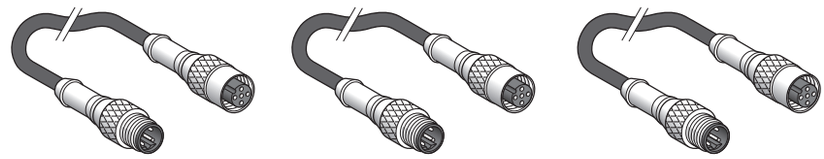
| Type of bus | | | CANopen machine bus | DeviceNet fieldbus | ProfiBus fieldbus |
|---|---|---|---|---|---|
| **Type of female connector** | | | Type 7/8, 5-pin, at either end | | |
| **References** | Cable | L = 0.6 m | **FTXDP2206** | | |
| | | L = 1 m | **FTXDP2210** | | |
| | | L = 2 m | **FTXDP2220** | | |
| | | L = 5 m | **FTXDP2250** | | |
| **Type of female connector** | | | Type 7/8, 5-pin, at one end (other end free) | | |
| | Cable | L = 1.5 m | **FTXDP2115** | | |
| **References** | | L = 3 m | **FTXDP2130** | | |
| | | L = 5 m | **FTXDP2150** | | |

## Accessories

| Type of bus | | CANopen machine bus | DeviceNet fieldbus | ProfiBus fieldbus | InterBus fieldbus |
|---|---|---|---|---|---|
| **References** | Configuration CD-ROM | **FTXES00** | | | |
| | Diagnostics M12 adaptor | **FTXDG12** | | | |
| | Power supply T-connector | **FTXCNCT1** | | | – |
| | Line terminator | **FTXCNTL12** | | **FTXDPTL12** | – |

# Accessories for sensors/actuators

## M12 / M12 jumper cables



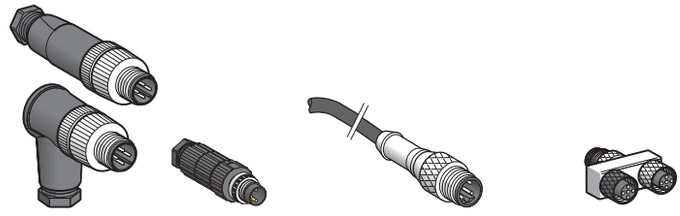
| Type | | | Male / Female jumper cables | | |
|---|---|---|---|---|---|
| Type of male connector, interface side | | | M12, 4-pin, straight, screw thread | M12, 4-pin, straight, screw thread | M12, 5-pin, straight, screw thread |
| Type of female connector, sensor side | | | M12, 3-pin, straight, screw thread | M12, 4-pin, straight, screw thread | M12, 5-pin, straight, screw thread |
| Cable | | | PUR, black | PUR, black | PUR, black |
| **References** | Cable | L = 1 m | **XZCR1511040A1** | **XZCR1511041C1** | **XZCR1511064D1** |
| | | L = 2 m | **XZCR1511040A2** | **XZCR1511041C2** | **XZCR1511064D2** |

3

## M8/M8, M8/M12 and M12/DIN jumper cables

| Type | | | Male / Female jumper cables | | | |
|---|---|---|---|---|---|---|
| Type of male connector, interface side | | | M8, 3-pin straight, screw thread | M12, 3-pin straight, screw thread | M12, 3-pin straight, screw thread | M12, 3-pin straight, screw thread |
| Type of female connector, sensor side | | | M8, 3-pin straight, screw thread | M8, 3-pin straight, clip together | M8, 3-pin straight, screw thread | DIN 43650A elbowed, screw thread |
| Cable | | | PUR, black | PUR, black | PUR, black | PUR, black |
| **References** | Cable | L = 1 m | **XZCR2705037R1** | **XZCR1501040G1** | **XZCR1509040H1** | **XZCR1523062K1** |
| | | L = 2 m | **XZCR2705037R2** | **XZCR1501040G2** | **XZCR1509040H2** | **XZCR1523062K2** |

## Pre-wired connectors and splitter box



| Type | | | Connectors | | Pre-wired connectors | Splitter box “Y” | |
|---|---|---|---|---|---|---|---|
| Type of male connector, interface side | | | M12, 4-pin | M8, 3-pin | M12, 5-pin, straight, screw thread | 1 x M12 | 1 x M12 |
| Type of female connector, sensor side | | | – | – | – | 2 x M12 | 2 x M8 |
| Cable | | | – | – | PUR, black | – | |
| **References** | Straight connector, screw thread | | **XZCC12MDM40B** | **XZCC8MDM30V** | – | **FTXCY1212** | **FTXCY1208** |
| | Elbowed connector, screw thread | | **XZCC12MCM40B** | – | – | – | – |
| | Cable | L = 0.5 m | – | – | **XZCP1564L05** | – | – |
| | | L = 2 m | – | – | **XZCP1564L2** | – | – |



Other versions: **please consult your Schneider Electric agency.**

## Discrete I/O modules

| Type of module | Multibus discrete inputs | | | |
|---|---|---|---|---|
| **Connection** | By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately) | | | |
| **Input voltage** | 24 VDC | | 120 VAC | 230 VAC |
| **Number of channels** | 16 (1 common point) | 32 (2 common points) | 16 (2 common points) | |
| **Dimensions (WxDxH)** | 125 x 47.5 x 141.5 mm (with communication modules or processors)<br>144 x 70 x 141.5 mm (with M1/M1E processors and optional modules) | | | |
| **Reference** | **170ADI34000** | **170ADI35000** | **170ADI54050** | **170ADI74050** |

3

| Type of module | | Multibus discrete outputs | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Relay | Solid state | | Triac | | | |
| **Connection** | | By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately) | | | | | | |
| **Output voltage** | | 5...24 VAC, 24...230 VAC | 24 VDC | | 120 VAC | | 230 VAC | |
| **Number of protected channels** | | 6 (1 common pt) | 16 (2 common pts) | 32 (2 common pts) | 8 (2 common pts) | 16 (2 common pts) | 8 (2 common pts) | 16 (2 common pts) |
| **Output current** | Per channel | 5A | 0,5 A | 0,5 A | 2 A | 0,5 A | 2 A | 0,5 A |
| | Per group of channels | – | 4 A | 8 A | 4 A | 4 A | 4 A | 4 A |
| | Per module | 21A | 8 A | 16 A | 8 A | 8 A | 8 A | 8 A |
| **Dimensions** (WxDxH) | | 125 x 47.5 x 141.5 mm (with communication modules or processors)<br>144 x 70 x 141.5 mm (with M1/M1E processors and optional modules) | | | | | | |
| **Reference** | | **170ADO83030** (1) | **170ADO34000** | **170ADO35000** | **170ADO53050** | **170ADO54050** | **170ADO73050** | **170ADO74050** |

*(1) Scew connectors included.*

| Type of module | | Multibus discrete I/O | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Solid state | | | | | Relay | | Triac |
| **Connection** | | By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately) | | | | | | | |
| **Number of channels** | Inputs | 16 (1 common pt) | 16 (4 com. pts) | 16 (1 com. pt) | 10 (1 common pt) | | | | |
| | Input logic | Positive | Positive (2) | Negative | Positive | | | – | |
| | Outputs | 16 (1 common pt) | 16 (2 common pts) | | 8/4 (1 com. pt) | 12 | 8 (2 common pts) | | 8 (1 com. pt) |
| **Input voltage** | | 12…48 VDC | 24 VDC | | | | | | 120 VAC |
| **Output voltage** | | 12…48 VDC | 24 VDC | | | | 24…230 VAC/20…115 VDC | | 120 VAC |
| **Output current** | Per output | 0,5 A | 0,5 A | | 2 A | 0,5 A | 2 A | | 0,5 A |
| | Per group of channels | – | 4 A | | 4 A | 4/2 A | 8 A | | 4 A |
| | Per module | 8 A | 8 A | | 8 A | 6 A | 16 A | | 4 A |
| **Dimensions** (WxDxH) | | 125 x 47.5 x 141.5 mm (with communication modules or processors)<br>144 x 70 x 141.5 mm (with M1/M1E processors and optional modules) | | | | | | | |
| **Reference** | | **170ADM85010** | **170ADM35010** | **170ADM35015** | **170ADM37010** | **170ADM39010** | **170ADM39030** | **170ARM37030** | **170ADM69051** |

*(2) For a version with high-speed positive logic, replace 0 at the end of the reference with 1. E.g. 170ADM35010 becomes 170ADM35011.*

*Connection accessories: See www.schneider-electric.com.*

## Analog I/O modules

| Type of module | Multibus analog inputs | | |
|---|---|---|---|
| **Connection** | By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately) | | |
| **Number of channels** | 8 isolated | 16 with common point | 4 isolated |
| **Input signal** | ± 5 V, ± 10 V, ± 20 mA, 1…5 V, 4…20 mA | ± 5 V, ± 10 V, 4...20 mA | Multi-range ± 25 mV, ± 10 mV (1) |
| **Resolution** | 14 bits + sign, 15 bits unipolar | 12 bits + sign | 15 bits + sign |
| **Dimensions** (WxDxH) | 125 x 47.5 x 141.5 mm (with communication modules or processors)<br>144 x 70 x 141.5 mm (with M1/M1E processors and optional modules) | | |
| **Reference** | **170AAI03000** | **170AAI14000** | **170AAI52040** |

*(1) Temperature probe: Pt 100, Pt 1000, Ni 100, Ni 1000, Thermocouple: B, E, J, K, N, R, S, T.*

| Type of module | | Multibus analog outputs | | Analog I/O and multibus discrete I/O | | |
|---|---|---|---|---|---|---|
| **Connection** | | By screw terminals 140XTS00200 (to be ordered separately) | | | | |
| **Number of channels** | Inputs | – | | 4 differential + 4 discrete | 6 with com pt + 8 discrete (24 VDC) | |
| | Outputs | 4 | | 2 + 2 discrete (24VDC) | 4 with com pt + 8 discrete (24 VDC) | |
| **Input signal** | | ± 10 V, 0...20 mA | ± 10 V, 4...20 mA | ± 5 V, ± 10 V, ± 20 mA, 1…5 V, 4…20 mA | 0…10 V | ± 10 V |
| **Output signal** | | – | | ± 10 V, 4...20 mA | 0…10 V | ± 10 V |
| **Resolution** | | 12 bits + sign | | 12...14 bits dep. on signal | 14 bits | 14 bits |
| **Dimensions** (WxDxH) | | 125 x 47.5 x 141.5 mm (with communication modules or processors)<br>144 x 70 x 141.5 mm (with M1/M1E processors and optional modules) | | | | |
| **Reference** | | **170AAO12000** | **170AAO92100** | **170AMM09000** | **170ANR12090** | **170ANR12091** |

## Application-specific I/O modules

| Type of module | High-speed counter | Discrete I/O with Modbus port |
|---|---|---|
| **Type of inputs for** | Incremental or absolute encoders | RS 485 Modbus port |
| **Operating voltage** | 24 VDC | 120 VAC |
| **Counting frequency** | 200 kHz | – |
| **Number of channels** | 2 independent | – |
| **Number of discrete I/O** | 2 x 3 inputs/2 x 2 outputs | 6 inputs/3 outputs |
| **Dimensions** (WxDxH) | 125 x 47.5 x 141.5 mm (with communication modules or M1/M1E processors)<br>144 x 70 x 141.5 mm (with M1/M1E processors and optional modules) | |
| **Reference** | **170AEC92000** | **170ADM54080** |



Other versions: **please consult your Schneider Electric agency.**

## Communication modules




| Type of module | Ethernet TCP/IP network | | Fipio (1) fieldbus | InterBus (2) fieldbus | Profibus DP fieldbus |
|---|---|---|---|---|---|
| **Speed** | 10 Mbps | 10/100 Mbps | 1 Mbps | 0.5 Mbps | 9.6 K...12 Mbps |
| **Manager PLC** | – | | Premium | - | - |
| **Redundancy** | No | | No | No | No |
| **Standard services** | Modbus TCP/IP | | – | – | – |
| **Reference** | **170ENT11002** | **170ENT11001** | **170FNT11001** (1) | **170INT11000** (2) | **170DNT11000** |

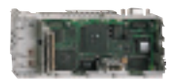
*(1) Fipio version 1 for communication with the TSX7 controller family, use model 170FNT11000 adapter.*

*(2) Generation 4, twisted pair medium: 170INT11003, with optical fiber medium: 170INT12000.*



| Type of module | Other networks Modbus Plus | | DeviceNet |
|---|---|---|---|
| **Speed** | 1 Mbps | | 0.5 Mbps |
| **Manager PLC** | Premium or Quantum | Quantum | – |
| **Redundancy** | No | Yes | No |
| **Standard services** | – | – | – |
| **Reference** | **170PNT11020** | **170PNT16020** | **170LNT71000** |

## Optional modules for M1/M1E processors



| Type of module (3) | Modbus Plus | | Asynchronous serial link |
|---|---|---|---|
| **Communication ports** | 1 Modbus Plus | 2 redundant Modbus Plus | RJ45 |
| **Real-time clock** | Integrated, ± 13 sec/day accuracy | | |
| **Connection** | By 9-way SUB-D connector | | |
| **Reference** | **172PNN21022** | **172PNN26022** | **172JNN21032** |

*(3) Include save battery of the M1/M1E processors application and data memories.*

## Connection accessories

| Type | RS 232C communication cable | | |
|---|---|---|---|
| **Length** | 1 m | 3 m | 6 m |
| **Reference** | **110XCA28201** | **110XCA28202** | **110XCA28203** |

## Power supply module (4)

| Type of power supply module for | Momentum processors |
|---|---|
| **Input voltage** | 120 or 230 VAC (selected by jumper) |
| **Output voltage** | 24 VDC |
| **Output current** | 0.7 A |
| **Dimensions** (WxDxH) | 73 x 44.5 x 146 mm |
| **Reference** | **170CPS11100** |

*(4) Process power supplies see chapter 6 "Power supply".*

# M1/M1E processors

| Type of processor | | M1 | | | | |
|---|---|---|---|---|---|---|
| **Number of I/O** | Discrete | 2048 I/O | | | 2048 I/2048 Q | 8192 I/O |
| | Registers | 2048 words | | | 4096 words | 26048 words |
| **Integrated communication ports** | Modbus | 1 RS 232C | | 1 RS 232C + 1 RS 485 | 1 RS 232C | 1 RS 232C + 1 RS 485 |
| | Ethernet TCP/IP | – | | | | |
| | I/O bus (1) | – | | | 1 I/O port | – |
| **Transparent Ready** | Embedded Web server | – | | | | |
| **Memory capacity** | RAM | 64 Kb | | | 256 Kb | 512 Kb |
| | Flash | 256 Kb | | | 256 Kb | 512 Kb |
| | User, 984 LL language (2) | 2.4 K | | | 12 K | 18 K |
| | User, IEC language (3) | – | | | 160 K | 240 K |
| | Data | 2 K | | | 4 K | 24 K |
| **Cycle time** | | 1 ms/K | 0.63 ms/K | 1 ms/K | 0.63 ms/K | 1 ms/K |
| **Reference** | | **171CCS70000** | **171CCS70010** | **171CCS78000** | **171CCS76000** | **171CCC78010** |

*(1) I/O bus derived from interbus bus.*

*(2) ProWORX 32 or Concept programming software.*

*(3) Concept programming software.*


| Type of processor | | M1 | M1E | | | |
|---|---|---|---|---|---|---|
| **Number of I/O** | Discrete | 8192 I/O | | | | |
| | Registers | 26048 words | | | | |
| **Integrated communication ports** | Modbus | 1 RS 232C | 1 RS 485 | | – | |
| | Ethernet TCP/IP | – | 1 integrated Ethernet port | | | |
| | I/O bus (1) | 1 I/O port | – | | 1 I/O port | |
| **Transparent Ready** | Embedded Web server | – | Standard services (class A10) | | | |
| **Memory capacity** | RAM | 512 Kb | 544 Kb | | | |
| | Flash | 512 Kb | | 1 Mb | 512 Kb | 1 Mb |
| | User, 984 LL language (2) | 18 K | | | | |
| | User, IEC language (3) | 240 K | – | 200 K | – | 200 K |
| | Data | 24 K | | | | |
| **Cycle time** | | 1 ms/K | 0.3 ms/K | | | |
| **Reference** | | **171CCC76010** | **171CCC98020** | **171CCC98030** | **171CCC96020** | **171CCC96030** |

| Type of processor | | 171 CBB97030 |
|---|---|---|
| **Integrated communication ports** | Modbus | 1 RS 232/485 |
| | Ethernet TCP/IP | 4 integrated Ethernet port |
| **Transparent Ready** | Embedded Web server | Standard services (class B) |
| **Memory capacity** | RAM | 512 Kb |
| | Flash | 1 Mb |
| | User, 984 LL language (2) | 18 K |
| | User, IEC language (3) | 200 K |
| | Data | 24 K |
| **Cycle time** | | 0.25 ms/K |
| **Reference** | | **171CBB97030** |

*Connection accessories: See www.schneider-electric.com.*



Other versions: **please consult your Schneider Electric agency.**

# AS-Interface cabling system

(Actuator Sensor Interface)

## Simplicity

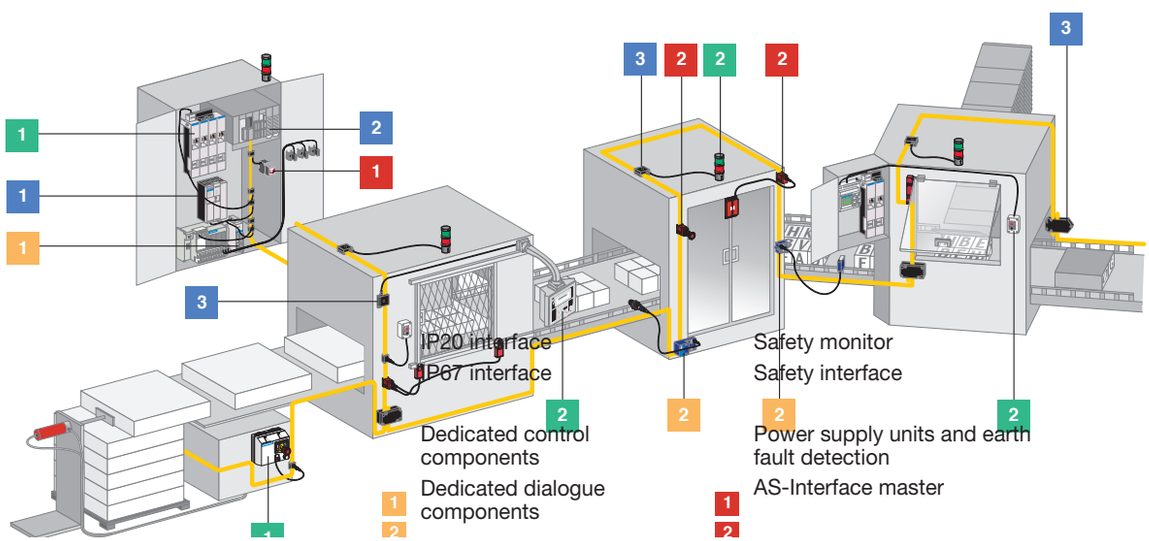
A quick and expandable cabling system:
- Only 1 cable for connecting all the components of an automation system
- Management of communications integrated in the products

## Maximum security

AS-Interface significantly improves the reliability, availability and safety of your machine:
- Cabling errors are eliminated
- Risk of electrical connection failure greatly reduced
- High immunity to electromagnetic interference (EMC)
- The machine's safety function is fully integrated with AS-Interface Safety at work.

## Up to 40% savings in costs

- Savings in time for design, installation, setting-up and commissioning
- Savings in space required in enclosures due to smaller products and elimination of intermediate boxes
- Control cabling eliminated and reduction in cable ducting




Other versions: **please consult your Schneider Electric agency.**

# Contents

These IP20 or IP67 interfaces allow any standard automation component to be connected to the AS-Interface cable.

## Advantys interfaces for generic products



These handle automation functions and can be connected directly to the AS-Interface cable. An integrated circuit (ASIC) built into the products manages all interfacing functions and communication.

## Dedicated components



The incorporation of safety functions in the AS-Interface system is achieved by adding a safety monitor and safety interfaces, connected together with other standard AS-Interface components on the same yellow cable.

## Safety solutions

(see Essential Guide Preventa Safety Solutions)



Sensors and actuators are connected to the processing unit by the AS-Interface system. This system comprises a cable, accessories, a master module and a power supply unit.

## Installation system



The terminals enable the assigning of an address to each interface and component in the system and diagnostics of the installation.

## Tools

# Advantys interfaces for generic products

## IP20 for mounting in enclosure





| Modular interface, width 25 mm V2.1 with standard addressing | Analogue | | Digital | | |
|---|---|---|---|---|---|
| **Number of inputs** | 2 (0…10V) | 2 (0/4…20mA) | 4 | 4 | 4 isolated |
| **Number of outputs** | – | – | 4 relay, 2A | 4 solid state, 0.5A | 4 solid state, 0.5A |
| **Type of addressing** | Standard | | | | |
| **Supply by AS-Interface** | Inputs and sensor supply (200 mA max.) | | | | – |
| **Supply by 24 VDC external source (black AUX cable)** | – | – | – | Outputs | (2) |
| **AS-Interface profile** | S.7.3.F.D | S.7.3.F.D | S.7.0.F.E | S.7.0.F.E | S.7.0.F.E |
| **Maximum consumption from AS-Interface (excluding sensor supply)** | 60 mA | 60 mA | 110 mA | 50 mA | 20 mA |
| **Dimensions (WxDxH)** | 25x77x87 mm | 25x77x87 mm | 25x77x87 mm | 25x77x87 mm | 25x77x87 mm |
| **References** | **ASI20MA2VU** | **ASI20MA2VI** | **ASI20MT4I4OR** | **ASI20MT4I4OS** | **ASI20MT4I4OSA** |
| **Accessory (1) for connection to flat cables** | **TCSATN01N2** | **TCSATN01N2** | **TCSATN01N2** | **TCSATV01N2** | **TCSATV01N2** |

*(1) Or direct screw terminal connection (without accessory), (other accessories, see page 4/65).*

*(2) Inputs, outputs and sensor supply (200 mA max.).*







| Modular interface, width 25 mm V2.1 with extended (A/B) addressing | Digital | | | | |
|---|---|---|---|---|---|
| **Number of inputs** | 4 | 2 | 4 | 4 | 4 isolated |
| **Number of outputs** | – | 1 triac, 2A | 3 relay, 2A | 3 solid state, 0.5A | 3 solid state, 0.5A |
| **Type of addressing** | Extended (A/B) | | | | |
| **Supply by AS-Interface** | Inputs and sensor supply (200 mA max.) (3) | | | | – |
| **Supply by 24 VDC external source (black AUX cable)** | – | – | – | Outputs | (2) |
| **AS-Interface profile** | S.0.A.7.0 | S.3.A.7.0 | S.7.A.7.0 | S.7.A.7.0 | S.7.A.7.0 |
| **Maximum consumption from AS-Interface (excluding sensor supply)** | 50 mA | 40 mA | 90 mA | 50 mA | 20 mA |
| **Dimensions (WxDxH)** | 25x77x87 mm | 25x77x87 mm | 25x77x87 mm | 25x77x87 mm | 25x77x87 mm |
| **References** | **ASI20MT4IE** | **ASI20MT2I1OTE** | **ASI20MT4I3ORE** | **ASI20MT4I3OSE** | **ASI20MT4I3OSAE** |
| **Accessory (1) for connection to flat cables** | **TCSATN01N2** | **TCSATN01N2** | **TCSATN01N2** | **TCSATV01N2** | **TCSATV01N2** |

*(1) Or direct screw terminal connection (without accessory), (other accessories, see page 4/65).*

*(2) Inputs, outputs and sensor supply (200 mA max.).*

*(3) Except ASI20MT4I3ORE (170 mA max.).*



Other versions: **please consult your Schneider Electric agency.**

# Advantys interfaces for generic products

## IP67 for mounting on machine

| Interface<br>V2.1 with extended (A/B) addressing | | | Digital | | | | | |
|---|---|---|---|---|---|---|---|---|
| Number of inputs | | | 4 | 2 | – | 4 | 4 | 4 |
| Input cabling | | | Standard (1 x M12 input) | | | | “Y” (2 x M12 inputs) | |
| Number of outputs | | | – | 2 solid-state, 2A | 3 solid-state, 2A | 3 solid-state, 2A | – | 3 solid-state, 2A |
| Type of addressing | | | Extended (A/B) | | | | | |
| Supply by AS-Interface | | | Inputs and sensor supply (200 mA max. except ASI67FFP22●: 100 mA) | | | | | |
| Supply by 24 VDC external source (black AUX cable) | | | – | Outputs | – | Outputs | – | Outputs |
| AS-Interface profile | | | S.0.A.7.0 | S.B.A.7.0 | S.8.A.7.0 | S.7.A.7.0 | S.0.A.7.2 | S.7.A.7.E |
| Maximum consumption from AS-Interface (excluding sensor supply) | | | 45 mA | 32 mA | 18 mA | 48 mA | 45 mA | 48 mA |
| Dimensions (WxDxH) | | | 45x42x80 mm | 45x42x80 mm | 45x42x80 mm | 60x30.5x151 mm | 45x42x80 mm | 60x30.5x151 mm |
| Connection | IDC | Interface | **ASI67FFP40E** | **ASI67FFP22E** | **ASI67FFP03E** | **ASI67FFP43E** | **ASI67FFP40EY** | **ASI67FFP43EY** |
| | | Standard connection base | **ASI67FFB01** (1) | **ASI67FFB01** (1) | **ASI67FFB01** (1) | **ASI67FFB03** | **ASI67FFB01** (1) | **ASI67FFB03** |
| | M12 connector | Interface + Connection base | **ASI67FMP40E** | **ASI67FMP22E** | **ASI67FMP03E** | **ASI67FMP43E** | **ASI67FMP40EY** | **ASI67FMP43EY** |

*(1) A connection base with fixing centres that are compatible with the ASIB4VM12 connection base is available. Reference ASI67FFB02.*



| Interface<br>V2.1 with standard addressing | | | Digital | | | | |
|---|---|---|---|---|---|---|---|
| Number of inputs | | | 4 | 2 | – | 4 | 4 |
| Input cabling | | | Standard (1 x M12 input) | | | | “Y” (2 x M12 inputs) |
| Number of outputs | | | – | 2 solid-state, 2A | 4 solid-state, 2A | 4 solid-state, 2A | 4 solid-state, 2A |
| Type of addressing | | | Standard | | | | |
| Supply by AS-Interface | | | Inputs and sensor supply (200 mA max. except ASI67FFP22●: 100 mA) | | | | |
| Supply by 24 VDC external source (black AUX cable) | | | – | Outputs | Outputs | Outputs | Outputs |
| AS-Interface profile | | | S.0.0.F.E | S.3.0.F.E | S.8.0.F.E | S.7.0.F.E | S.7.1.F.E |
| Maximum consumption from AS-Interface (excluding sensor supply) | | | 45 mA | 32 mA | 19 mA | 49 mA | 49 mA |
| Dimensions (WxDxH) | | | 45x42x80 mm | 45x42x80 mm | 45x42x80 mm | 60x30.5x151 mm | 60x30.5x151 mm |
| Connection | IDC | Interface | **ASI67FFP40D** | **ASI67FFP22D** | **ASI67FFP04D** | **ASI67FFP44D** | **ASI67FFP44DY** |
| | | Standard connection base | **ASI67FFB01** (1) | **ASI67FFB01** (1) | **ASI67FFB01** (1) | **ASI67FFB03** | **ASI67FFB03** |
| | M12 connector | Interface + Connection base | **ASI67FMP40D** | **ASI67FMP22D** | **ASI67FMP04D** | **ASI67FMP44D** | **ASI67FMP44DY** |

*(1) A connection base with fixing centres that are compatible with the ASIB4VM12 connection base is available. Reference ASI67FFB02.*

| Interface<br>V2.1 (V1 compatible) with standard addressing | | | Digital | | | |
|---|---|---|---|---|---|---|
| Number of inputs | | | 4 | 2 | – | 4 |
| Input cabling | | | Standard (1 x M12 input) | | | |
| Number of outputs | | | – | 2 solid-state, 2A | 4 solid-state, 2A | 4 solid-state, 2A |
| Type of addressing | | | Standard | | | |
| Supply by AS-Interface | | | Inputs and sensor supply (200 mA max. except ASI67FFP22●: 100 mA) | | | |
| Supply by 24 VDC external source (black AUX cable) | | | – | Outputs | Outputs | Outputs |
| AS-Interface profile | | | S.0.0.F.F | S.3.0.F.F | S.8.0.F.F | S.7.0.F.F |
| Maximum consumption from AS-Interface (excluding sensor supply) | | | 45 mA | 32 mA | 19 mA | 49 mA |
| Dimensions (WxDxH) | | | 45x42x80 mm | 45x42x80 mm | 45x42x80 mm | 60x30.5x151 mm |
| Connection | IDC | Interface | **ASI67FFP40A** | **ASI67FFP22A** | **ASI67FFP04A** | **ASI67FFP44A** |
| | | Standard connection base | **ASI67FFB01** | **ASI67FFB01** | **ASI67FFB01** | **ASI67FFB01** |

# Dedicated components
## For control

| TeSys U Control Starter<br>Power base for D.O.L. Starter | | | | Non reversing | | Reversing | |
|---|---|---|---|---|---|---|---|
| Connection by screw clamp | | | | Catalogue Number | Current Rating | Catalogue Number | Current Rating |
| Operational voltage | 200/208 V | 230/240 V | 480 V | | | | |
| Horse power ratings (CSA/UL ratings) | 3 | 3 | 7.5 | LUB12 | 12 A | LU2B12●● | 12 A |
| | 10 | 10 | 20 | LUB32 | 32 A | LU2B32●● | 32 A |



| TeSys U Control units<br>advanced | | class 10 | | class 20 |
|---|---|---|---|---|
| Starting range<br>For motor type | Clip-in mounting on power base | Catalogue Number (1)<br>three-phase | single-phase | three-phase |
| 0.15-0.6 | 12 and 32 | LUCBX6●● | LUCCX6●● | LUCDX6●● |
| 0.35-1.4 | 12 and 32 | LUCB1X●● | LUCC1X●● | LUCD1X●● |
| 1.25-5 | 12 and 32 | LUCB05●● | LUCC05●● | LUCD05●● |
| 3-12 | 12 and 32 | LUCB12●● | LUCC12●● | LUCD12●● |
| 4.5-18 | 32 | LUCB18●● | LUCC18●● | LUCD18●● |
| 8-32 | 32 | LUCB32●● | LUCC32●● | LUCD32●● |

*(1) Basic catalogue number to be completed by adding the voltage from the table below.*

| Standard control circuit voltages | | | |
|---|---|---|---|
| Volts | 24 | 48-72 | 110-240 |
| dc | - | - | - |
| ac | Coil | - | - |
| dc or ac | S.7.D.F.0 | ES (1) | FU (2) |

*(1) dc: 48-72 V, ac:48 V.*

*(2) dc: 110-220 V, ac: 110-240 V.*

| Keypads and Control stations<br>V1 | TeSys Model U<br>V2.1 |
|---|---|
| Type of addressing | Standard |
| Supply by AS-Interface | - |
| Supply by external source (AUX) | Coil |
| AS-Interface profile | S.7.D.F.0 |
| Maximum consumption from AS-Interface | 30 mA280 mA |
| Dimensions (WxDxH) | Depending on LU model |
| Catalogue numbers | ASILUFC5 |
| Recommended accessory for connection to AS-Interface cable (4) | ASIDCPFIL20 |

*For TeSysU information, please refer to catalogue #T8500CT0602EP R0.*



Other versions: **please consult your Schneider Electric agency.**

# Dedicated components
## For dialogue

| Keypads and Control stations<br>V1 | Control stations with 2 pushbuttons<br>Black and white | <br>Illuminated |
|---|---|---|
| Type of addressing | Standard | Standard |
| Supply by AS-Interface | Buttons | Buttons and pilot lights |
| Supply by external source (AUX) | – | – |
| AS-Interface profile | S.3.F | S.3.F |
| Consumption from AS-Interface | < 40 mA | < 80 mA |
| Dimensions (WxDxH) | 68x62x128 mm | 68x68x128 mm |
| References | **XALS2001E** | **XALS2003E** |
| Recommended accessory for connection to AS-Interface cable (4) | **TCSATV011F1** | **TCSATV011F1** |

*(4) Or direct screw terminal connection to AS-Interface and external supply (AUX), (other accessories, see page 4/65).*



| Interface<br>V1 | For 2 control units and 2 pilot lights |
|---|---|
| Number of pages available | – |
| Number of inputs | 2 |
| Number of outputs | 2 solid state, 0.5A |
| Type of addressing | Standard |
| Supply by AS-Interface | Inputs and pilot lights |
| AS-Interface profile | S.3.F |
| Maximum consumption from AS-Interface | 80 mA |
| Dimensions (WxDxH) | 52x15x38 mm |
| References | **XALSZ1E** |

*Direct screw terminal connection to AS-Interface or by accessory for flat cable: XZCG0122, (other accessories, see page 4/65).*

| Indicator banks, Ø 70 mm (7)<br>V1 | Base units and cover | | Illuminated units<br>"Flash" discharge tube | <br>Steady light | Audible unit |
|---|---|---|---|---|---|
| Type of addressing | Standard | Standard | – | – | – |
| Connection to AS-Interface cable and AUX (male M12 connector) | yes | yes, remote L=1m | – | – | – |
| Supply by AS-Interface | (5) | (5) | – | – | – |
| Supply by external source (AUX) | (5) | (5) | – | – | – |
| AS-Interface profile | S.8.F | S.8.F | – | – | – |
| Consumption from AS-Interface, supply by AS-Interface / external | 250 / 30 mA | 250 / 30 mA | – | – | – |
| Light source | – | – | 5 Joule | LED | – |
| Buzzer | – | – | – | – | 70…80 db at 1m |
| References | **XVBC21A** | **XVBC21B** | **XVBC6B●** (6) | **XVBC2B●** (6) | **XVBC9B** |
| Recommended accessory for connection to AS-Interface cable & AUX | **TCSATV011F1** | **TCSATN011F** | | **–** | **–** |

*(5) Illuminated units supplied by AS-Interface or externally, configurable by shunt.*

*(6) To complete the reference, replace the ● by the following number designating the colour: green: 3, red: 4, orange: 5, blue: 6, clear: 7, yellow: 8.*

*(7) To obtain a complete indicator bank, order a base unit + the illuminated or audible units (5 units maximum).*

# Installation system

## Master modules

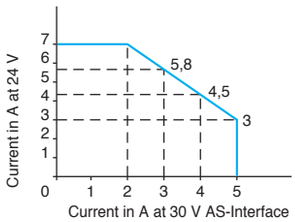



| Platform | Twido | Premium | Micro | Quantum |
|---|---|---|---|---|
| **Maximum number of master modules per PLC** | 2 | 2, 4 or 8 depending on | 1 | 8 (1) |
| **Compatibility with AS-Interface interfaces and components** | V1 / V2.1 | V1 / V2.1 | V1 | V1 |
| **Direct connection to AS-Interface cable** | by terminal block | by terminal block | by terminal block | by terminal block |
| **Maximum number of addresses** | 62 | 62 | 31 | 31 |
| **Type of addressing** | Standard/Extended (A/B) | Standard/Extended (A/B) | Standard | Standard |
| **Compatibility with analogue interfaces** | Yes | Yes | – | – |
| **Compatibility with safety interfaces** | Yes | Yes | Yes | Yes |
| **AS-Interface profile** | M.3 | M.2.E | M.2 | M.2 |
| **References** | **TWDNOI10M3** | **TSXSAY1000** | **TSXSAZ10** | **140EIA92100** |

*(1) 4 per local rack, 4 per remote I/O, 2 per distributed I/O.*

4

## Power supply units







| Type of supply | | AS-Interface | | AS-Interface + Auxiliary | |
|---|---|---|---|---|---|
| **Input voltage** | | 100…240 VAC | 100…240 VAC | 100…240 VAC | 100…120 & 200…240 VAC |
| **AS-Interface output voltage** | | 30 VDC | 30 VDC | 30 VDC | 30 VDC |
| **Auxiliary output voltage** | | – | – | 24 VDC | 24 VDC |
| **AS-Interface nominal power** | | 73 W | 146 W | 73 W | 61-153 W |
| **Auxiliary nominal power** | | – | – | 72 W | 72-168 W |
| **AS-Interface nominal current** | | 2.4 A | 4.8 A | 2.4 A | 5 A (2) |
| **AUX nominal current** | | – | – | 3 A | 7 A (2) |
| **Direct connection to AS-Interface cable** | | by terminal block | by terminal block | by terminal block | by terminal block |
| **Dimensions (WxDxH)** | | 54x120x120 mm | 81x120x120 mm | 81x120x120 mm | 225x135x151.5 mm |
| **References** | without earth fault detection | **ASIABLB3002** | **ASIABLB3004** | **ASIABLM3024** | **TSXSUPA05** |
| | with earth fault detection | **ASIABLD3002** | **ASIABLD3004** | **–** | **–** |

*(2) Power supply unit with constant maximum output, see curve above.*



Other versions: **please consult your Schneider Electric agency.**

# Installation system

## Cables and repeater



| Type | | | Yellow AS-Interface cable | Black Auxiliary cable | Repeater (4) |
|---|---|---|---|---|---|
| **Wire c.s.a.** | | | 2 x 1.5 mm² | 2 x 1.5 mm² | – |
| **References** | Cable | L = 20 m | **XZCB10201** (3) | **XZCB10202** (3) | **–** |
| | | L = 50 m | **XZCB10501** (3) | **XZCB10502** (3) | **–** |
| | | L = 100 m | **XZCB11001** (3) | **XZCB11002** (3) | **–** |
| **Reference of repeater** | | | **–** | **–** | **ASIRPT01** |

*(3) Standard cable. For TPE cable (oil and vapour resistant) add the letter H to the end of the reference, example: XZCB10201 becomes XZCB10201H.*

*(4) Enables an AS-Interface network to be extended by 100 m. Direct connection to the AS-Interface yellow cable by IDC*

4

## Tap-offs for flat cable

**(For connecting interfaces and components)**


| Connection to cable by IDC | | | AS-Interface IP54 | | AS-Interface + Auxiliary IP67 | |
|---|---|---|---|---|---|---|
| **Cable extremity** | | | M12 connector (5) | Bared wires (6) | M12 connector (5) | Bared wires (7) |
| **References** | Cable | L = 1 m | **TCSATN011F1** | **–** | **TCSATV011F1** | **–** |
| | | L = 2 m | **TCSATN011F2** | **TCSATN01N2** | **TCSATV011F2** | **TCSATV01N2** |

*(5) Female 5-pin M12 end connector, screw threaded for connection with M12 male connector.*

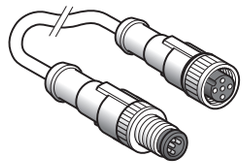
*(6) 2 x 0.34 mm2 for product with terminal block.*

*(7) 4 x 0.34 mm2 for product with terminal block.*


| Connection to cable by IDC | | AS-Interface | 2 AS-Interface or 2 Auxiliary |
|---|---|---|---|
| **Tap-off** | | 1 x M12 connector 5-pin female, screw threaded | 1 flat cable |
| **References** | Tap-off | **TCSATN011F** | **TCSATN02V** |

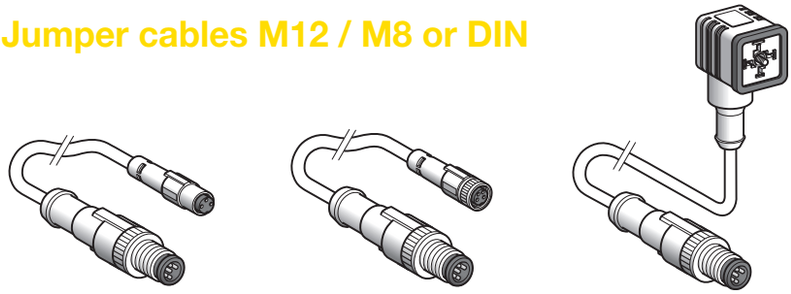
# Installation system

## Jumper cables M12 / M12



| Type | | | Male / Female jumper cable | | |
|---|---|---|---|---|---|
| **Male connector type, interface side** | | | M12, 3-pin, straight, screw thread. | M12, 4-pin, straight, screw thread. | M12, 5-pin, straight, screw thread. |
| **Female connector type, sensor side** | | | M12, 3-pin, straight, screw thread. | M12, 4-pin, straight, screw thread. | M12, 5-pin, straight, screw thread. |
| **Cable** | | | PUR, black | PUR, black | PUR, black |
| **References** | Cable | L = 1 m | **XZCR1511040A1** | **XZCR1511041C1** | **XZCR1511064D1** |
| | | L = 2 m | **XZCR1511040A2** | **XZCR1511041C2** | **XZCR1511064D2** |

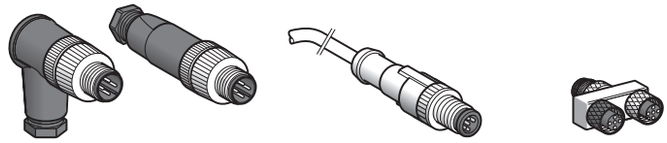
## Jumper cables M12 / M8 or DIN



| Type | | | Male / Female jumper cable | | |
|---|---|---|---|---|---|
| **Male connector type, interface side** | | | M12, 3-pin, straight, screw thread. | M12, 3-pin, straight, screw thread. | M12, 3-pin, straight, screw thread. |
| **Female connector type, sensor side** | | | M8, 3-pin, straight (1) | M8, 3-pin, straight, screw thread. | DIN 43650A, elbowed, screw thrd. |
| **Cable** | | | PUR, black | PUR, black | PUR, black |
| **References** | Cable | L = 1 m | **XZCR1501040G1** | **XZCR1509040H1** | **XZCR1523062K1** |
| | | L = 2 m | **XZCR1501040G2** | **XZCR1509040H2** | **XZCR1523062K2** |

*(1) Clip together connector.*

## Connectors, splitter box



| Type | | Connectors | Pre-wired connectors | Splitter box |
|---|---|---|---|---|
| **Male connector type, interface side** | | M12, 4-pin | M12, 5-pin, straight, screw thread. | 1 x M12, 5-pin, straight, screw thrd. |
| **Female connector type, sensor side** | | – | – | 2 x M12, 5-pin, straight, screw thrd. |
| **Cable** | | – | PUR, black | – |
| **References** | Straight connector, screw thread. | **XZCC12MDM40B** | **–** | **FTXCY1212** |
| | Elbowed connector, screw thread. | **XZCC12MCM40B** | **–** | **–** |
| | Cable L = 0.5 m | **–** | **XZCP1564L05** | **–** |
| | Cable L = 2 m | **–** | **XZCP1564L2** | **–** |

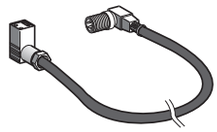
# Tools

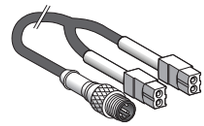
## Adjustment and addressing terminals


| Display | 25 mm LCD screen | 13 mm LCD screen |
|---|---|---|
| Degree of protection | IP40 | IP20 |
| AS-Interface voltage / current measurement | yes | no |
| Addresses stored in memory | yes | no |
| Access to functions | direct by selector switch | by pull-down menu |
| Compatibility | V1/V2 | V1/V2 |
| Operating time | 2500 addressing operations | 250 read/write operations |
| References | **ASITERV2** | **XZMC11** |
| Reference with set of 7 leads + protective cover for terminal | **ASITERV2SET** | – |

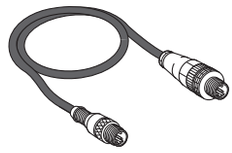


## Addressing accessories for terminals ASITERV2 and XZMC11





| Product connection | Infrared addressing | Socket |
|---|---|---|
| For products | ASISSL… | ABE8… / APP1 / ASILUF… / XBZS43 / ASI20M |
| References | **ASITERIR1** | **XZMG12** |



| Product connection | M12, male | M12, female | Jack plug |
|---|---|---|---|
| For products | (2) | ASI67FMP<br>XVB… / XAL… / LF… | ASI20M… / ASI67FFP… |
| References | **ASITERACC1M** | **ASITERACC1F** | **ASITERACC** |

*(2) Possibility to connect AS-Interface cable using T connector XZCG0120.*

# Schneider Electric

Our products provide quality solutions, meeting all your Automation and Control applications requirements.


# A worldwide presence

- More than 5,000 points of sale in 130 countries.
- A range of products that meet the standards of the country in which they will be used.

# Canadian support

- 200 dedicated sales engineers operate from 22 regional sales centres and from 13 technical service centres accross Canada.
- Our sales engineers are skilled at assessing individual requirements. Combined with the expert support of our product specialists, they will develop the most effective and economical solution for you, taking relevant regulations and standards into account.

# Customer Service:
## 1(800) 565-6699

**Schneider Electric**

Head office
19 Waterman Av
Toronto, Ontario, M4B 1Y2
Tel: (416) 750-8020

T8501CT0601EP R1

September, 2008