# B&R X20DO4529

## 01 Function and selected configuration

### Product function

B&R X20DO4529 gives the control application access to four changeover circuits while keeping each channel electrically isolated. Its relay contacts, external suppression and terminal voltage class must be selected together for the connected actuators.

### Selected configuration

Each channel provides NC, COM and NO terminals through the X20TB12 terminal block. The X20BM11 or X20BM15 bus module provides the supported X20 connection. Although channels are isolated, the terminal block must use either mains voltage or safety extra-low voltage; the two voltage classes must not be mixed.

### Functional path

PLC output register → X20 bus update → Four relay contacts → External actuator circuits

| | |
|---|---|
| Contact arrangement | Four single-channel isolated changeover relays |
| Nominal loads | 1 A at 30 VDC or 0.5 A at 115 VAC |
| Output mapping | Four individual bits or one packed USINT |

Nominal output current is 1 A at 30 VDC or 0.5 A at 115 VAC, with maximum switching capacity of 30 W or 62.5 VA. Contact resistance is 75 mΩ under the 6 VDC / 1 A test condition. Inrush current is limited to 2 A per channel. There is no internal suppression, so AC loads require an RC network or VDR and DC loads require a reverse diode, RC network or VDR as appropriate.

# X20DO4529

## 02 Technical operating envelope

| | |
|---|---|
| Output channels | 4 |
| Contact arrangement | Relay changeover contacts |
| Isolation | Channel-to-channel, bus and I/O supply |
| DC nominal output | 1 A at 30 VDC |
| AC nominal output | 0.5 A at 115 VAC |
| Switching capacity | Maximum 30 W / 62.5 VA |
| Inrush current | Maximum 2 A per channel |
| Switching delay | ≤4 ms, ON and OFF |

| | |
|---|---|
| Bus power | 0.8 W |
| Internal suppression | None |
| Minimum cycle | 100 µs |
| Output register | USINT; bits 0–3 |
| Horizontal operation | -25 to +60 °C |
| Vertical operation | -25 to +50 °C |
| Protection | IP20 |

Contact limits depend on DC or AC load conditions. The single-channel isolation rating does not waive terminal voltage-class segregation or external power isolation.

### Signal interpretation

Electrical channel isolation does not permit mains and SELV voltage classes to be mixed on the terminal block. Isolate external actuator power before connecting or removing the terminal block.

### Interface boundary

A 100 µs bus update and a SyncOut offset below 60 µs describe data transfer. The relay contact itself has an ON/OFF switching delay up to 4 ms.

# X20DO4529

## 03 System integration and applications

### DC auxiliary switching

Operate suitable DC loads up to the specified contact rating, with external transient suppression.

### 115 VAC control circuits

Use the changeover relay outputs for the selected AC control-voltage class and load rating.

### Normally closed indication

The NC and COM contacts support an engineered de-energized contact path; validate the application-specific fail state.

### Packed digital mapping

Function model 0 can expose the four output states as individual bits or a single USINT for the approved I/O map.

### System and supply context

The module requires an X20TB12 terminal block and a supported X20BM11 or X20BM15 bus module. Actuators use an external supply and any required load-suppression components.

### Application boundary

Use changeover contacts for discrete loads within the DC or AC switching envelope. Observe the common terminal voltage-class rule even though each relay channel is isolated.

### Why is the 100 µs cycle of X20DO4529 not its relay response time?

The cycle specifies communication and I/O updating. Mechanical contact switching can take up to 4 ms in either direction, so a fast bus cycle does not create microsecond relay operation.

# X20DO4529

## 04 Engineering selection decisions

### May X20DO4529 switch 115 VAC on one channel and SELV on another?

No. Voltage classes must not be mixed on the terminal block. Use either the mains-voltage class or safety extra-low voltage, even though the individual channels are isolated.

### Which protection components are needed when X20DO4529 drives inductive loads?

There is no internal suppression. AC loads require an RC combination or VDR; DC loads can use an inverse diode, RC combination or VDR appropriate to the circuit.

### What happens to the temperature limit when X20DO4529 is mounted vertically?

The operating range changes from -25 to +60 °C for horizontal mounting to -25 to +50 °C for vertical mounting. Additional altitude derating applies above 2000 m.

### Does the 2 A inrush limit of X20DO4529 permit a continuous 2 A load?

No. The nominal contact ratings remain 1 A at 30 VDC or 0.5 A at 115 VAC. The 2 A value is the per-channel inrush limit, not a continuous output rating.

| | |
|---|---|
| Check switching capacity | Respect the voltage/current envelope, 2 A inrush limit and maximum switching power. |
| Allow relay delay | Do not treat the 100 µs bus update as the contact switching time. |

# X20DO4529

## 05 Configuration boundary and references

### Lifecycle and support

The current manufacturing and factory-support phase of X20DO4529 is not confirmed. Product availability alone does not establish its lifecycle status.

### Replacement assessment

Match the relay changeover design, X20 terminal/bus modules, voltage class, load suppression and I/O mapping. Transistor output modules are not automatic replacements.

### Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains selection and system context. The separate installation guide covers preparation, connection, tests and handover; it does not replace manufacturer instructions.

### Technical basis

B&R X20DO4529 Data Sheet, V3.20, September 2024.

### Related product navigation

- B&R X20CP1486
- B&R X20CP1485

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries