

Presentation

INTERBUS is a fieldbus, designed for distributing sensor and actuator devices in a master/slave topology. The I/O slaves are serviced in a deterministic manner over a twisted-pair network. INTERBUS is best suited for talking to groups of I/O rather than individual I/O points. As such, INTERBUS slaves are typically available in 8, 16 or 32-channel blocks.

In the Quantum Automation Series, two INTERBUS master modules are available – **140 NOA 611 10** (generation 3) and **140 NOA 622 00** (generation 4). These Quantum INTERBUS masters can control Momentum slave devices (with INTERBUS communication module), as well as third-party products designed to operate on the fieldbus. Over 300 industrial vendors provide INTERBUS-compatible products, assuring open, cost-effective and wide-ranging connectivity.

The Quantum INTERBUS master modules interface with up to 4096 input and output points distributed over as many as 512 slave devices on the fieldbus. The INTERBUS data rate is 500 kbps, with data transferred to the Quantum CPU for logic processing on every scan. Up to three INTERBUS master modules can be supported in a local Quantum backplane.

INTERBUS products use the remote bus technique, which enables data transfers over 12.8 km (8 miles) across all 512 devices.

Electrical voltage levels on the Quantum remote bus are RS-485, with full-duplex mode communications. INTERBUS command words are pre-programmed in the INTERBUS master module. This is an INTERBUS standard that supports 16-function programmability. Four pre-programmed bits are defined:

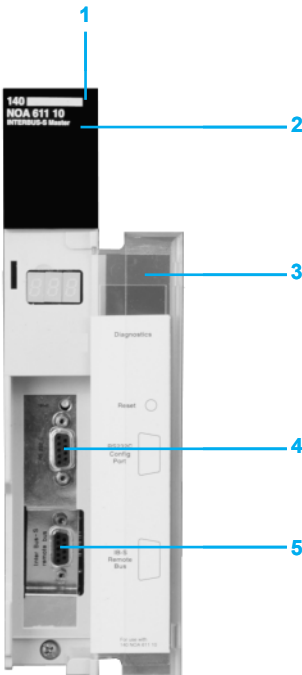
- Startup with configuration check
- Start network
- Stop network
- Clear display

An additional INTERBUS feature provided in the Quantum master is the peripheral communications protocol (PCP), which supports limited data communications to intelligent devices. PCP version 1.5 allows word communications to intelligent slaves, for advanced functions such as drive setup, parameterization or non-I/O data transfer. Many third-party slave devices available today do not support PCP capability, but it is supported in the Quantum master modules.

Description

The **140 NOA 611 10 / 622 00** INTERBUS module front panels comprise:

- 1 Model number and color code
- 2 LED array consisting of:
 - R (green) Ready. The firmware is running correctly and the module is ready for service.
 - Active (green). Communication with the Quantum CPU is active.
 - F (red). Fault on the module.
 - IB-S Run (green). The INTERBUS is functioning normally and carrying data.
 - BS Off (yellow). One or more bus segments are shut down.
 - Master (red). Processor fault. Fault on the INTERBUS processor, or the communication processor has failed.
 - RBUS (red). Remote bus fault. The remote bus has been diagnosed as defective.
 - LBUS (red). Peripheral bus fault. The peripheral bus has been diagnosed as defective.
 - Slave (red). An INTERBUS node has reported a (module) fault.
 - DEA202 (red). Initialization fault with the DEA 202.
 - Memory (red). Memory fault.
 - Start Up (red). The INTERBUS master is not operational.
- 3 Removable, hinged door and customer identification label.
- 4 RS 232C port.
- 5 INTERBUS port.



Loadable software

The **140 NOA 611 00** INTERBUS generation 3 module requires a loadable driver called ULEX, an intelligent module driver that provides 256 input data registers and 256 output data registers per logic scan. One ULEX instruction can support up to three **140 NOA 611 10** modules. ULEX is provided with the Quantum INTERBUS user manual (840 USE 419 00) (in English).

The Quantum INTERBUS master module can take advantage of various software packages for full-feature performance. PCP communications utilize two other 984 Ladder Logic loadable instructions – ICNT and ICOM. ICNT establishes a connection link to a slave device; ICOM communicates with the slave device.

The **140 NOA 622 00** generation 4 INTERBUS module is configured with SYCON software, reference **SYC SPU LF•CD28M** (sold separately).

Characteristics

Module type		140 NOA 611 10	140 NOA 622 00
INTERBUS compatibility		Generation 3	Generation 4
Type		INTERBUS master, PCP V1.5	INTERBUS master, PCP V2.0
Data interface	INTERBUS	RS 485, isolated (test voltage 500 V)	
	RS 232C	Per DIN 66.020, non-isolated for configuration tool	
	Cable length	m	20 maximum (shielded)
	Data transfer frequency	Kbps	500
Memory	RAM	bytes	256 K + 32 for data; 2 K dual-port RAM; 64 K multi-port RAM
	EPROM	bytes	128 K + 256 K firmware
	EEPROM	bytes	64 K INTERBUS command sequence
Bus current required		mA	800
Max. number of modules in INTERBUS local rack		3	2 with 140 CPU 113 03 6 with 140 CPU 434 12A and CPU 534 14B
Rack type		Local	
Power dissipation		W	4
Compatibility	CPUs	All CPUs, version 2.0 or higher, except the 140 CPU 113 02	140 CPU 113 03 140 CPU 434 12A or 140 CPU 534 14B
	Software	Concept version 2.1 or higher, ProWORX NxT version 2.0 or higher, ProWORX 32 version 1.0 SR1 or higher	Concept version 2.5 SR2 or higher
Approvals		CE, UL/CSA	CE, cUL

References

Description	Type	Reference	Weight kg
INTERBUS master module	Generation 3 (1)	140 NOA 611 10	0.900
	Generation 4 (2)	140 NOA 622 00	0.900

Connection accessories and documentation

Description	Length	Reference	Weight kg
Preconnected cables	0.25 m	170 MCI 025 00	–
	1.00 m	170 MCI 100 01	–
Remote bus cables	100 m	TSX IBS CA 100	–
	400 m	TSX IBS CA 400	–
	By the meter	KAB 3225 LI	–
INTERBUS female/9-pin connector for remote bus cables	–	170 XTS 009 00	–
SYCON configuration software, single-user license for 140 NOA 622 00 module, compatible with Concept	–	SYS SPU LFU CD28M	–
RS 232 programming cables	3.7	990 NAA 263 20	–
	15.5	990 NAA 263 50	–
140 NOA 611 10 user manual	–	840 USE 419 00	–
140 NOA 622 00 user manual	–	840 USE 497 01	–

(1) Compatible with Concept/ProWORX programming software.

(2) Compatible with Concept programming software.