

SH ARC-Mx-HUB

Modular ARCNET hubs
with 3 or 5 ports



Scope of application

The maximum expansion of an ARCNET network segment is limited by the signaling method and the bit rate. Hubs can connect several segments in series to expand networks. But then, the suppression of bit jitter and the regeneration of signal levels and signal shapes will be of importance. Although common hubs regenerate signal levels they do not reduce but sometimes even increase bit jitter.

In contrast the SH ARC-Mx-HUB regenerates signals and reduces bit jitter. With a very short signal transfer time of less than 3 bits, multiple SH ARC-Mx-HUBs can be cascaded as long as the timeout conditions of all connected ARCNET nodes are met.

Further areas of application of the SH ARC-Mx-HUB are:

Linking different signaling standards

In ARCNET networks with different physical transfer standards repeaters it is crucial to interconnect the signaling variety. The SH ARC-Mx-HUB may contain up to 3 or 5 different ARCNET interface modules. In this way junctions between segments using various signaling methods (sine dipulse, RS485/EIA-485, RS485AC and optical) via coaxial, twisted pair or fiber optic cables can be implemented without problems.

Implementing Stubs

Depending on the spatial arrangement of network participants, nodes may be connected to the next segment via so called stub cables. For that you may equip the SH ARC-Mx-HUB – beside its function as a repeater – with an additional third channel.

Design & Functionality

The SH ARC-Mx-HUB uses the FPGA-based hub controller SH IP-CORE-ARCHUB by SOHARD. ARCNET signals are checked and regenerated; signal levels and shapes are restored and the cycles reestablished. This will regenerate

Specification

Compatibility	ANSI/ATA 878.1, CE for industrial environment
Power requirements	AC: 115/230 VAC +10%/-15%; DC: 24 VDC +/- 20%; M3: 8 W max.; M5: 12 W max.
Temperature range, operation	0°C to + 55°C
Temperature range, storage	- 20°C to + 85°C
Dimensions (w/h/d), in mm	148/68/106 or 200/68/106 (without connectors)
Weight	600 g (M3) or 900 g (M5) without packaging and modules

Diagnosis LEDs

Recon LED	Indicates the port receiving a RECON burst.
Alert burst error LED	Indicates ARCNET telegram headers deviating from the spec.
Lock LED	Indicates a correctly recognized data rate
HIT error LED	Indicates transceiver malfunction
Coax disable LED	Indicates disabled coaxial transmission provoked by inapt data rates to protect transceivers
TX-error LED	Indicates transmission errors due to unspecified data rates or non-comforming ARCNET nodes

even very distorted signals. The bit rate used in the network is automatically recognized and set.

All interface modules, power supply and control logic come as plug-in modules and can be combined as required. The device will be configured at your request free of charge. Housing and front plates are made of aluminum. This and other structures protect the device and its environment

from electromagnetic interferences. The devices come with a power supply for 115/230 VAC or for 24 VDC depending on your order.

For technical information on the SOHARD ARCNET interface modules usable with the hubs, please have a look at our product datasheet "ARCNET Interface Modules".

Order Information

Product name	Short description
SH ARC-M3-HUB-AC	Three channel ARCNET hub, AC power supply, for interface modules type „M“ ¹⁾
SH ARC-M3-HUB-DC	Three channel ARCNET hub, DC power supply, for interface modules type „M“ ¹⁾
SH ARC-M5-HUB-AC	Five channel ARCNET hub, AC power supply, for interface modules type „M“ ¹⁾
SH ARC-M5-HUB-DC	Five channel ARCNET hub, DC power supply, for interface modules type „M“ ¹⁾

¹⁾ Interface module must be ordered separately.

User manual and power cable (only by AC-model) are included with "SH ARC-Mx-HUB".

Interface modules type "M"

Product name	Bit rate	Signal	Socket	Cable type
SH KOAX-M	2.5 Mbit/s	sine dipulse	BNC	coaxial cable RG-62
SH LWLSMA-M	up to 2.5 Mbit/s	optical	FSMA	multi-mode fibers
SH LWLST-M	up to 2.5 Mbit/s	optical	ST/BFOC	multi-mode fibers
SH LWLTOS-M	up to 2.5 Mbit/s	optical	TODX296/TOSLINK	multi-mode fibers
SH RS485-M	up to 10 Mbit/s	RS-485/EIA-485	DE-9/D-sub	twisted pair cable
SH RS485AC-BNC-M	2.5 – 10 Mbit/s	RS485AC	BNC	coaxial cable RG-62
SH RS485AC-RJ45-M	2.5 – 10 Mbit/s	RS485AC	RJ45	twisted pair cable
SH TWP-M	2.5 Mbit/s	sine dipulse	RJ45	twisted pair cable

Please feel free to contact us for customized interface modules.