SCNET4™ Version 3
SC4x5™ Controllers

SC4x5™ is a new family of security controllers within the SC400™ range, as part of the SCNET4™ suite from NCS®: integrated electronic systems for managing access control, building security, and technical management. The SC400™ range is suitable for installations in automated, secure buildings and for the most diverse network architectures. It offers great module flexibility, allowing a system to be assembled very economically from building blocks.

- **Miniaturization and power** – Operating around a latest-generation 32-bit ARM processor and the Linux® operating system, SC4x5™ controllers combine fully-distributed management with the simplicity of a single solution, outperforming both large centralized controllers with 8, 16, 32, etc. accesses and systems with "multi-stage" interfaces (controller, door interface, alarm interface, etc.). With SC4x5 controllers, you use the same controller throughout your installation.

- **Identification technology versatility** – Supporting equally well badge readers with Wiegand (Data-Data) or ISO2 (Data-clock) binary interfaces and R422 or RS485 serial interfaces using SCDI™ from NCS, SIA OSDP™, or SSCP (STid) protocols, SC4x5™ controllers can manage up to 4 readers. They also support the addition of up to 4 Assa-Abloy® Aperio™ Online locks. Supporting these multiple reader interfaces allows transparent use of multiple identification technologies (125 kHz HID® proximity, EM, ISO 14443 A/B, MIFARE® Classic®, MIFARE DESFire® EV1 / EV2 or UHF EPC Gen2).

- **At the heart of SCNET4™ SECURE™** – Fully-fledged members of the SCNET4™ system's SECURE™ option, SC4x5™ controllers offer complete security of TCP/IP communications through use of the TLS 1.2 protocol and smart management of cryptographic certificates. Support for the RS485 SSCP and OSDP protocols allows complete security of controller/reader connections by means of AES 128-bit coding or the establishment of "transparent" channels directly securing the controller/badge connection in MIFARE DESFire EV1 technology. All the parameters and security keys that allow these secure identifiers to be managed are loaded directly into the controllers from the central system.

- **Fully programmable** – Natively incorporating the mechanisms for controlling the various obstacles (doors, turnstiles, sliding gates, etc.), along with managing the different security modes (positive / negative), SC4x5™ controllers make it possible to freely associate the inputs, relays, or readers with the functions desired by the user. There is no terminal block dedicated to one door here, but the possibility for the operator to configure the whole of the system as they see fit. The signals from the detectors and sensors are monitored using advanced scanning and real-time digital analysis technologies.

- **Wiring economy –** MTM4™ and MTM5™ technologies make it possible to connect all the points for a door (door contact and its self-protection, push-button and connecting box self-protection) or a detector and self-protection for its wiring via a single cable pair.

- **Multiple communication channels –** The controllers offer simultaneously TCP/IP (10/100 base-T) and hard-wired (up to 115,200 baud and 1,200 m) interfaces and also act as routers in mixed networks. A secondary communication channel makes it possible to extend the input/output capacity up to 48 inputs and 16 additional control relays per controller.

- **Easy configuration and maintenance –** All configuration and technical maintenance operations on the controllers are performed directly via a dedicated Web interface that allows various levels of authorisations to be managed. Operations associated with the system are wholly managed from the SCNET4 system's NET4-C™ client workstations.

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Technical data

Capacities

Models	SC415-BS	SC425-BS	SC435-BS	SC405-CC
Type	Master	Master	Master	Slave
Badge capacity	7,500	40,000	100,000	
Event memory	20,000	30,000	40,000	
Reader connection mode[1]	B or S	B or S	B or S	
Reader channels	2	2	2	
2 to 8-state inputs	7	7	7	12
NO/NC relays	4	4	4	8
Powering[2]	12 VDC (NS) – PoE (NE)	12 VDC (NS) – PoE (NE)	12 VDC (NS) – PoE (NE)	via Master
Consumption[3]	1.2 W	1.2 W	1.2 W	1 W

[1]   B: binary (Wiegand data/data or ISO2 Data-Clock)   S: Serial (RS422 / RS485 addressable)
[2]   Readers powered via controller, up to a maximum of 800 mA per channel (max. 9.6 W)
[3]   No-load consumption, no inputs, relays, readers connected

Specifications

Device	Dimensions (W × H × D)	105 × 90 × 35 mm
	Mounting	DIN rail or screw mounting
	Removable connectors	
	Housing	ULV0-compliant ABS
	Environment	0–40°C, humidity 10–90% non-condensing
	Powering (Master)	12 VDC or PoE (IEEE 802.3af)
Platform (Master)	CPU	32-bit ARM processor, 150 MHz, uninterruptible RTC, hardware and software Watch-dog, electronic identification and signature.
	Memory	64 MB (RAM), 128 MB (Flash)
	Shutdown	Shutdown with automatic save
	Webserver	Technical configuration, signature, firmware updating, cryptographic certificate management (SECURE)
Security	Identification key	Anti-substitution protection, TLS1.2, Coding (AES-128, AES-256, SHA-1, SHA256, RSA 4096)
Inputs	Standard	12-bit analogue channels (single-point, double-point MTM4, triple-point MTM5)
	MF (Mains Fail)	Primary supply monitoring (Master)
	BL (Battery Low)	Battery status monitoring and self-protection for cabinet (Master)
Relays	DPST	NO or NC, Max 50 W / 50 VDC / 2 A
Communication channels (Master)	NCDI3	Closed multi-message circulating token ring, max. 1,200 m between nodes, 4,800 to 115,200 baud, automatic addressing
	TCP/IP	10/100 base-T (8-pin RJ45) Fixed IP address or DHCP, Option for TLS 1.2 security, PoE support (IEEE 802.3af)
	Secondary bus	Max. 1 m, capacity: 2 × SC405-CC slaves
	USB	USB2 connection PC or memory
Readers (Master)	Channel 1/Channel 2 (capacity per channel)	1 binary reader (Wiegand – Data/Data or ISO2 Data-Clock) or max. 2 serial readers (RS422 / RS485) 2- or 4-wire, 4,800 to 115,200 baud