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Ingenuity for life

Sitraffic sX
traffic controller

The innovative solution that will grow along with your requirements

New: advanced version available!

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Small and smart or complex and sophisticated – Sitraffic sX is a traffic controller that can be both.

Setting parameters for traffic signal systems using a smartphone or tablet computer? With Sitraffic® sX, this is no longer a futuristic scenario: The new traffic controller can be easily operated via the Web while meeting the highest security standards and availability requirements. For all its simplicity, Sitraffic sX covers a wide range of applications: It can be used as a stand-alone solution without connection to sensors and a higher-level traffic control system, or works smoothly as an integral part of the extensive traffic management system of a large city.

The controller that started out as a smart, basic solution can now do even more: In its advanced version, it offers an extended range of features and functions that allow the implementation of solutions for challenging traffic control applications as well as the integration of different standards.

Accessibility – secure communication between control center and Web interface

For both the smart and the advanced versions, a secure connection can be established from the Sitraffic Scala or Sitraffic smartGuard control centers right through to the Web interface of the controller's processor. Hence, in terms of secure access, it makes no difference whether you choose to check the operating details of the controller directly on site or from the convenience of your office desk. For those who are looking for a compact solution that will meet their complex traffic control requirements or who are planning to expand their existing solution, Sitraffic sX 'advanced' offers a range of useful new features.

The advanced version of Sitraffic sX – now even more powerful

The new functions for "Advanced Traffic Engineering (ATE)" and "Advanced Traffic Management (ATM)" make it possible to use Sitraffic sX for sophisticated advanced control, with numerous highlight functions such as the connection of up to four partial nodes, the PDMx control method, integrated planning and data supply via Sitraffic Office as well as parameterizable signal monitoring functions. What is more, Sitraffic sX is now also equipped for advanced traffic management: The open system architecture enables seamless connection to third-party control centers, using either Sitraffic Canto or OCIT as the protocol, as well as the project-specific implementation of additional protocols from local development partners.

**The advanced version of Sitraffic sX:
The new traffic controller for demanding control tasks**

Integrated planning and data supply via Sitraffic Office. As part of a Sitraffic end-to-end solution, Sitraffic sX 'advanced' can be projected and configured in Sitraffic Office.

PDMx control method. In the advanced version, the established and proven traffic-actuated PDMx control method includes a library of its own.

Up to four partial nodes. In the advanced version, Sitraffic Office and PDMx allow planning and configuration of up to four partial nodes.

VSR control centers. The advanced controller version can be linked up to traffic computers via the Sitraffic Canto and OCIT-0 V2.0 protocols.

The latest in Web technology allows easy operation of Sitraffic sX at any time and from anywhere. The advanced version offers a whole range of additional useful functions that will help you prepare perfectly for tomorrow's tasks.

Traffic control made easy: Sitraffic sX is equipped for intuitive and convenient operation via the Internet. The easy-to-configure controller uses modern software architecture and features automated data synchronization between traffic center and controller.

Lean structure, easy configuration and unparalleled user-friendliness – Sitraffic sX is setting new standards.

Usability – from direct Web access to error memory

No tools, no software to install – just open your Web browser and start using the device! HTML 5 enables easy and user-friendly access to the Web user interfaces of the new Sitraffic sX controller. Even customization or the implementation of project-specific language packages becomes easy with modern HTML 5 interfaces. And innovative features such as an intuitive error memory are no longer wishful thinking, but have been developed and integrated in Sitraffic sX. The Web user interface meets the high requirements of IT security.

Over-the-air updates – unique processor architecture

A processor innovation complements the idea of remote operation: In addition to the main CPU, a dedicated real-time processor can take over control if required, as a kind of "hot stand-by". This not only maximizes the availability of the intersection control system, but also enables full over-the-air (OTA) firmware updates of all Sitraffic sX controllers in the field. Especially in times of ever stricter IT security requirements and breathtakingly fast hardware and software innovation cycles, this innovative idea helps prepare the device for future challenges.

Smart configuration – fast parameterization of basic systems

The Sitraffic smartCore tool makes configuring a Sitraffic sX controller child's play! After selection of the appropriate city or country template, the software assistant will guide you through the entire configuration process. The definition of the signal groups automatically creates a topology for the intersection that allows the user to maintain an overview at all times, both during the subsequent configuration steps as well as on the Sitraffic sX Web interface.

The tool automatically pre-generates signal groups, detectors, output terminals and schedules as well as signal programs and includes them in the graphical representation. As an option, it even takes over the parameterization of the Sitraffic sLX traffic actuation module. Even users with little experience or training can thus produce a flawless configuration, including signal monitoring, for Sitraffic sX.

Plug & play link-up to the control center – with automatic data synchronization

The new technology also facilitates the link-up of the traffic light system to the traffic computer. Sitraffic sX offers true "plug & play" functionality with automated data synchronization between traffic center and controller. This helps eliminate frequent error sources and ensures full data consistency within the Siemens system at all times.

Openness – API interface for local applications

The modern software architecture of the Sitraffic sX controller also includes an Application Programming Interface (API) for connection to customer-specific applications. This interface has been developed especially for the integration of customer-specific control philosophies and control center link-ups as well as for auxiliary functions such as data exchange with third-party systems (e.g. Car2X). Thanks to this unique, cutting-edge software architecture, the Sitraffic sX controller is open for the integration of additional applications and perfectly prepared for future technological developments.

High IT security

As a supplier of traffic technology, Siemens ITS is certified to the international information security management standard ISO/IEC 27001. All Sitraffic products, systems and services are developed, integrated and operated in this certified environment.

As a result, potential IT threats are systematically identified, analyzed and monitored and the right IT security technologies and processes are implemented to effectively and efficiently minimize the risks. One of our key objectives is the continuous improvement of IT security.

Ultra-modern hardware and innovative software – a combination that equals future-proof solutions for your traffic planning.

Whether intuitive user interfaces, ever more powerful processors or state-of-the-art hardware: When using Siemens Solutions, municipal authorities can be confident that they have the latest technology at their fingertips. With all that, our focus is always on providing optimum customer benefit – modular, powerful solutions with a high safety and security factor!

Ultra-modern hardware design – modular and based on the latest technologies
The Sitraffic sX controller scores with its unique ease of installation, minimal wiring effort and modular design for flexible extension. From the basic configuration for the control of eight signal groups, the controller can be expanded to control a huge array of more than 64 signal groups and up to 250 detectors.

We have made use of our decades of experience to completely redesign the hardware: All components and processors are state-of-the-art, which ensures an extended lifecycle, especially since precision and reliability have always characterized Siemens products – even under the most challenging operating conditions.

Siemens offers three controller hardware versions, perfectly adapted to 117 V/230 V, 40 V und 24 V signal heads. The latest innovation is the capability of the Sitraffic sX-V version to control the new "1Watt" family of devices that are distinguished by extremely low energy consumption, for instance the SIL3-certified Silux2 VLP signal head.

The Sitraffic sX controller family	
Sitraffic sX-H 230 V	The basic controller for 230 V LED signal heads with an especially low energy consumption level of 5–18 W per signal head
Sitraffic sX-HC 230 V	The compact controller for 230 V LED signal heads, with LED control board and up to 8 signal groups
Sitraffic sX-L 40 V	The standard controller for 40 V LED signal heads that scores with highly flexible hardware design and software functionality that can be expanded from smart to advanced
Sitraffic sX-LC 40 V	The compact controller for 40 V LED signal heads, with LED control board and up to 32 freely assignable outputs
Sitraffic sX-V 24 V	The new controller for 1Watt technology that scores with minimum energy consumption and the highest security level
Sitraffic sX-VC 24 V	The compact controller for 1Watt technology, with LED control board and up to 32 freely assignable outputs

Shared data	Sitraffic sX-H, Sitraffic sX-L and Sitraffic sX-V
Legislation, standards, directives	• DIN VDE 0832-100 (EN 50556) • RiLSA 2010 (EN 12675) • DIN VDE 0832-200 (EN 50293) • DIN VDE V 0832-500 • CE marking (includes EMC and Low-Voltage Directive LVD) • EN 61508
Ambient temperature limits	−40 °C to +60 °C ambient temperature
Power consumption of control unit	Typ. 28 W, max. 75 W
Signal groups	64 signal groups (more if needed for a specific project)
Partial nodes	Up to 4 partial nodes (restrictions in the case of Sitraffic smartCore)
Detectors, inputs/outputs	• 4-channel detectors (SLD4) • Video detector (DIB-E) • Radar technology and Sitraffic Wimag (CIE) • AFD for receiving R09 telegrams
Acknowledgement devices for signal transmitters for the blind	Compatible with various makes and models
Pedestrian signal request devices	Compatible with various makes and models
Interfaces	• 3 × Fast Ethernet • 1 × USB • 1 × compact flash card (max. 8 GB) • 9 serial interfaces (onboard) • 9 additional serial interfaces when CEB expansion module is installed
Signal monitoring	• Two-channel setup based on fail-safe components • Monitoring of dangerous signaling states as per DIN EN 50556/EN 12675 • Alarm message in the event of contradictory signaling states and defective light sources • Monitoring function using individual red-light sensors and total-current sensors
System clock pulse	1 s
Timer	• GPS, time server (ntp) • RTC (quartz clock pulse)
Backup concept	• Data recorded over a long period of time, stored on a correspondingly large compact flash card • Data supply can be defined separately for each archive
Control centers	• Sitraffic Canto (UMTS & Ethernet) • OCIT-O V2.0 centers (Ethernet) • Sitraffic smartGuard ASP • Plug & play connection to Sitraffic Scala and smartGuard

Shared data	Sitraffic sX-H, Sitraffic sX-L and Sitraffic sX-V
Types of control	• Central control mode • Local mode • Manual mode • Automatic annual switching routine • Phase coordination
Off state	• Off mode for each partial node • Off/amber flashing • Off/dark and Off/all flashing
On/Off switching	Signaling states freely selectable, signal-plan-based On/Off switching patterns (restrictions in the case of Sitraffic smartCore)
Signal sequences, vehicles/pedestrians	All signal sequences possible (restrictions in the case of Sitraffic smartCore)
Flashing pulse	1 Hz or 2 Hz
Data logging	Polling of detector inputs at intervals of 10 ms, with configurable plausibility check
Operator control/data supply	• Manual control unit, functions as per DIN EN 50556 (VDE 0832-100, DIN VDE 0832-110) with 4-line LCD display for fast and easy information on operating states and system events • Standardized data supply via Sitraffic smartCore PC software (standard) • Extended range of configuration options and extra flexibility with Sitraffic Office (advanced) • Modification of key parameters (e.g. automatic annual switching routine, signal timing) via the Sitraffic sX Web interface • Full range of diagnostic functions via the Sitraffic sX Web interface
Web interface	• Sitraffic sX HTML 5 Web interface offering all functions required for monitoring, operation and diagnosis • Data supply and modification of key parameters (automatic annual switching routines, phases, signal plan times) • Detector simulation • Plug & play functionality • New and even more informative display of status information
Traffic-actuated control (standard)	• Sitraffic smartCore software for PC, with assistant for the configuration of intersections of average complexity • Data supply for simplified traffic-actuated control via Sitraffic sLX module • Automatic calculation of an intersection topology diagram and the required data for the signal monitoring function • Upgrade to Sitraffic Office allows extended configuration options
Traffic-actuated control (advanced)	• Programmable logic with Sitraffic Office – Traffic Language (structograms/flowcharts) • PDMx control method, module library for phase control with distributed modification

Model-specific data	Sitraffic sX-H	Sitraffic sX-L	Sitraffic sX-V

Mains supply voltage	• 230 V AC (−20 %/+15 %)
	• 117 V AC (−20 %/+15 %)
	  for export
		• 230 V AC (−20 %/+15 %)	• 230 V AC (−20 %/+15 %)
			• 117 V AC (−18 %/+15 %)
			  for export

Lamp switch types	• VDE 230 V, LED 5–18 W • 117 V (LSHS), LED 3–9 W	• VDE 40 V (LSLS), LED 5–9 W, as per OCIT® specification	• VDE 24 V (LSVS) LED 1–3 W

Lamp types/signal head types	• 230-V LED signal head (5–18 W),
	  dimming function (150 V AC) –
	  VDE not applicable
	• 117-V LED signal head (3–9 W)
	• Third-party products require prior
	  approval
		• 40-V LED signal head (5–9 W),
		  dimming function (27 V AC/DC) –
		  VDE not applicable
		• Third-party products require prior
		  approval
			• 24-V LED signal head (1–3 W),
			  no dimming function
			• Third-party products require prior
			  approval

Technical data of lamp switching module	• Connection of 5–18 W (230 V)
	  LED signal heads
	• Connection of 3–9 W (117 V)
	  LED signal heads
	• Up to 256 lamp outputs
	• One lamp switching module
	  features 32 outputs with
	  24 switching elements
	• Each module features 8 signal
	  groups with 3 aspects red/amber/
	  green, plus dual-channel sensor
	  technology
	• Each output is equipped with
	  three terminals
		• Connection of 5–9 W (40 V)
		  LED signal heads
		• Up to 256 lamp outputs
		• An LSLS features 32 outputs
		  with 32 switching elements
		• Each output is current-
		  monitored in dual-channel
		  sensor technology
		• No fixed signal states assigned
		  to the outputs; any aspect can
		  be assigned the states Disabled,
		  Enabled, Transition
		• Each output is equipped with
		  three terminals
			• Connection of 1–3 W (24 V)
			  LED signal heads
			• Up to 256 lamp outputs
			• An LSVS features 32 outputs
			  with 32 switching elements
			• Each output is current-
			  monitored in dual-channel
			  sensor technology
			• No fixed signal states assigned
			  to the outputs; any aspect can
			  be assigned the states Disabled,
			  Enabled, Transition
			• Each output is equipped with
			  three terminals

Fuse protection for signal heads (lamp load)	• 6.3 A per lamp switching module
	• 1 A per color output
		• 20 A per lamp switching module
		• Electronic fuse for each
		  color output
			• 7.5 A per lamp switching module
			• Electronic fuse for each
			  color output

Permanent-load limits (lamp load)	• Max. 920 W per lamp switching
	  module (8 signal groups with 3
	  aspects each)
	• Max. 72 W per load switch
	  for color output (max. 36 W at
	  117 V)
		• Max. 640 W per lamp switching
		  module (32 LED switches)
		• Max. 36 W per load switch for
		  color output
			• Max. 120 W per lamp switching
			  module (32 LED switches)
			• Max. 12 W per load switch for
			  color output

Max. permissible total load (lamp load)	2.76 kVA for 230 V (12 A)	1.0 kVA for 40 V (25 A)	0.4 kVA for 24 V (25 A)
Dimming (countries where VDE does not apply)	Yes	Yes	No

Signal head cabling	• Generally 1.5 mm²
	• 1 return per signal head
	  recommended
	• 1 return per signal group as an
	  alternative option
		• Generally 1.5 mm²
		• 1 return per signal head
		  recommended
		• FA: 1 return per 2 signal heads
		  as an alternative option
		• FU: 1 return per signal group
		  as an alternative option
			• Generally 1.5 mm²
			• 1 return per signal head
			  recommended
			• FA: 1 return per 2 signal heads
			  as an alternative option
			• FU: 1 return per signal group
			  as an alternative option

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.