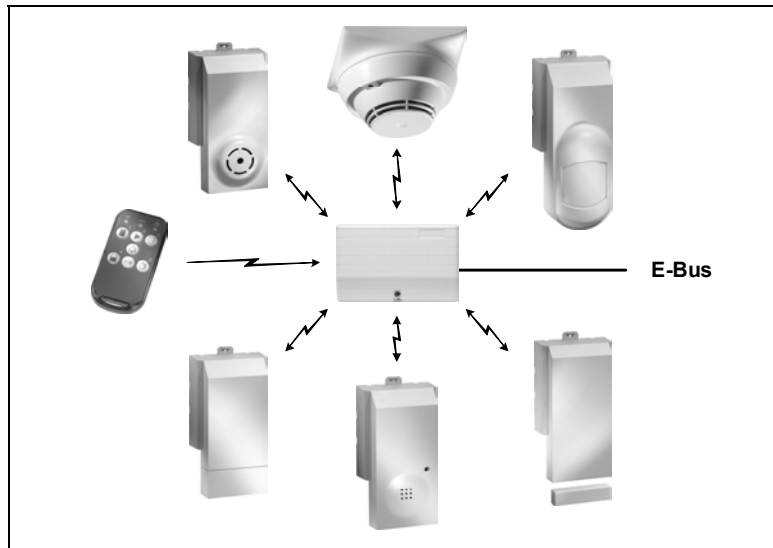


User Manual / Technical Description



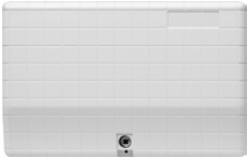
SiRoute™

Wireless Infrastructure for Alarm Systems

With innovative radio technology

- No range limitation
- Self-configuring wireless network
- Redundant communication links
- Battery lifetime up to 4 years
- Very good reliability
- “White collar” installation
- Higher security
- One remote control for alarm system, emergency and home automation control
- Reduced inventory costs
- Family look blends with all environments
- Simple addressing

System overview



E-Gateway
(E-Bus radio gateway for SI
series control panels)



Radio module
standard



Radio module for
round detectors
(e.g. smoke detectors)

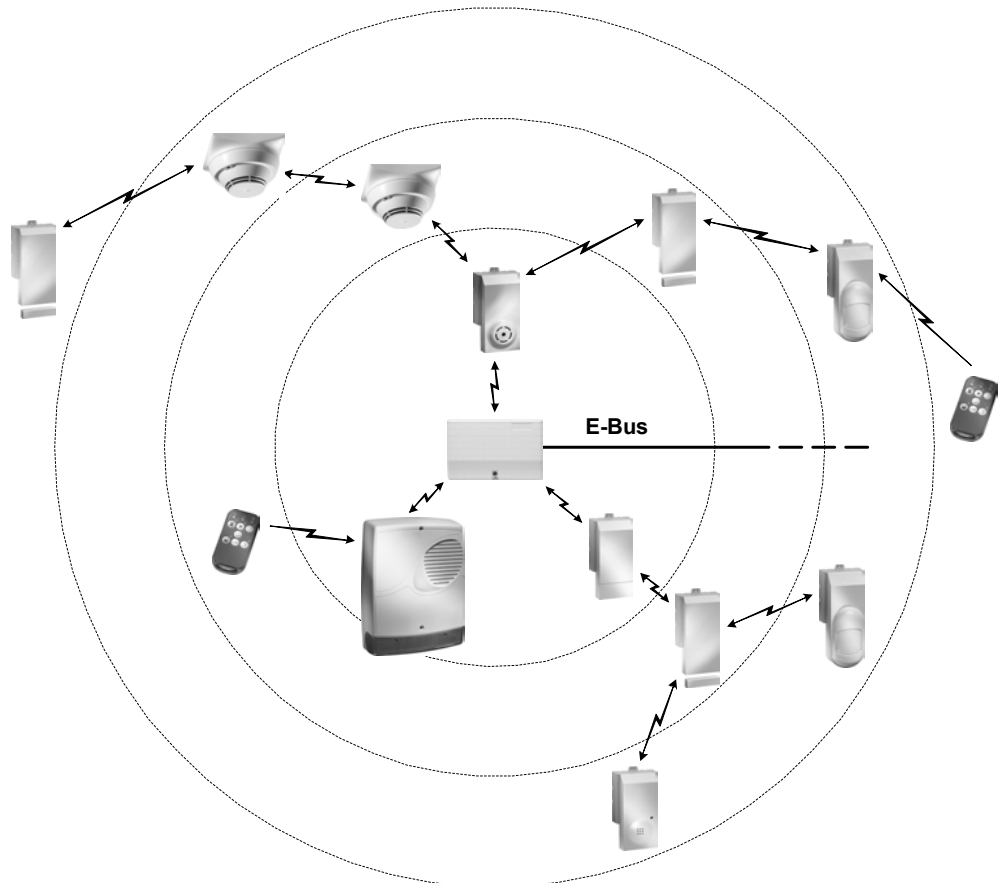


Universal
mounting base

The new wireless infrastructure SiRoute™ brings a complete range of devices with an innovative and reliable radio technology, which offers an unlimited transmission range and a higher security. The SiRoute™ technology is unique, based on an 914MHz bidirectional radio transmission. It features a patented routing mechanism named EasyRouting. The SiRoute™ peripheral devices can be used with Siemens hardwired systems series SI100/200/300/400 thanks to a new radio gateway.

- **No range limitation, self-configuring wireless network and redundant communication links**

The patented telegram routing algorithm EasyRouting passes on the information from the wireless participants to the radio controller in the gateway and vice versa. The communication works by passing telegrams from one participant to the radio controller via other participants if a direct radio communication is not possible. In case of radio disturbances EasyRouting automatically searches for an alternative route between the participant and the radio controller.



- **Battery lifetime up to 4 years**

The SiRoute™ devices have such a low power consumption that the batteries can lead up to 4 years. The batteries are included in the supplied packages.

- **Very good reliability**

The redundancy of the routing mechanism and the high performance of the bidirectional radio technique make the SiRoute™ wireless infrastructure a very reliable product.



Smoke detector

The SiRoute™ wireless optical smoke detector is based on light scattering by smoke particles. Designed for low power consumption it is powered by the batteries of the radio module. The smoke sensitivity is 2.5%/m. An LED indicates the alarm state in test mode.

PIR motion detector

The standard 12m wide-angle Fresnel lens can be quickly replaced by an optional 18m long-range lens. Corner mounting is possible using the optional bracket W7UM20 (5pcs set). The PIR (passive-infrared) detector has an LED, which indicates the alarm state in walk test mode.

Acoustic glass-break detector

In contrast to magnet contacts and vibration detectors, which must be mounted on all windows, the SiRoute™ acoustic glassbreak detector can monitor the windows of a whole room with a detection range up to 8m. It works with all glass types. An LED indicates the alarm state in test mode.

Door contact

The SiRoute™ wireless door contact has 3 reed contacts. This allows different positions of the housing for a great flexibility when installing the contact. The contact is designed for use on doors. One magnet is supplied with the contact. Spare contacts W7MK105 are available (5pcs set).

Technical data

Operating voltage (battery supply)	from W7BT21	from W7BT20	from W7BT20	from W7BT20
Battery lifetime	up to 4 years	up to 4 years	up to 4 years	up to 4 years
Specific data	Smoke sensitivity: 2.5%/m	Detection range: 12m volumetric (standard), 18m long range (optional)	Detection range: 8m radius	Detection type: magnetic contact (max. 10mm between contact and magnet)
Settings	-	Sensitivity: high / low / remote selectable by jumper	Sensitivity: high (up to 8m) / low (up to 4m) / remote selectable by jumper	-
Ambient conditions				
– Operating temperature	-10 ... +55°C	-10 ... +55°C	-10 ... +55°C	-10 ... +55°C
– Storage temperature	-20 ... +60°C	-20 ... +60°C	-20 ... +60°C	-20 ... +60°C
– Air humidity (EN60721)	<95% r.h., non-cond.	<95% r.h., non-cond.	<95% r.h., non-cond.	<95% r.h., non-cond.
– Housing protection (EN60529)	IP 44	IP 42	IP 31	IP 31
Housing Material	ABS	ABS	ABS	ABS
Radio module	W7BT21	W7BT20	W7BT20	W7BT20
– Frequency	913.85MHz	913.85MHz	913.85MHz	913.85MHz
– Transmission type	bidirectional	bidirectional	bidirectional	bidirectional
– Transmission range	unlimited (EasyRouting)	unlimited (EasyRouting)	unlimited (EasyRouting)	unlimited (EasyRouting)
Approvals				
–				
–				



Input/output module 2/2

The SiRoute™ wireless input/output module 2/2 provides 2 inputs, which can be set with a jumper for either NO or NC operation. The device provides also 2 potential free outputs controlled by the radio module. The housing provides cable entries and strain relieves.

Indoor siren

The SiRoute™ indoor siren has a small size but offers a high sound level of 80dB at 3m distances. It is powered by the radio module battery.

Outdoor siren

The SiRoute™ outdoor siren is self-powered and integrates the radio module. The siren provides also a strobe. Several settings are possible with jumpers: the strobe can be activated separately (Out1 of the radio module), can follow the siren activation (Out2 of the radio module) or can be disabled. The siren can be activated with no time limit, during max 3min or can be disabled. The housing is weather-proof.

Remote control

The multifunctional remote control SiRoute™ is smaller than a credit card and only few mm thick, with indications by 3 LEDs. It has 7 keys for standard controls as well as emergency (panic alarm). This handheld can be secured by programming a PIN code.

Radio modules

The SiRoute™ radio modules W7BT20 and W7BT21 use the same bidirectional transceiver board. W7BT21 has only a different socket for round detectors (e.g. smoke detectors). W7BT20 and W7BT21 use the universal mounting base, which is part of the radio module package.

from W7BT20	from W7BT20	4 x 1.5V type D	1 x 3V Li CR2032	3 x 1.5V type AA
up to 4 years	up to 4 years	up to 4 years	up to 5 years	-
2 inputs, NO/NC selectable by jumpers (default NO)	Sound level: 80dB@3m	Sound level: 100dB@3m	7 operation keys	-
2 outputs, potential free contacts, max. 40VDC / 1A / 30W			3 indication LEDs	
-	-	Siren: on-Out2 / on-Out2 3min / off Strobe: on-Out2 / on-Out1 / off selectable by jumpers	-	-
-10 ... +55°C	-10 ... +55°C	-10 ... +55°C	-10 ... +55°C	-10 ... +55°C
-20 ... +60°C	-20 ... +60°C	-20 ... +60°C	-20 ... +60°C	-20 ... +60°C
<95% r.h., non-cond.	<95% r.h., non-cond.	<95% r.h., non-cond.	<95% r.h., non-cond.	<95% r.h., non-cond.
IP 42	IP 31	IP 34	IP 55	-
ABS	ABS	PE / PC	ABS / PC	ABS
W7BT20	W7BT20	integrated	integrated	-
913.85MHz	913.85MHz	913.85MHz	913.85MHz	913.85MHz
bidirectional	bidirectional	bidirectional	unidirectional	bidirectional
unlimited	unlimited	unlimited	unlimited	unlimited
(EasyRouting)	(EasyRouting)	(EasyRouting)	(EasyRouting)	(EasyRouting)

- **“White collar” installation**

The SiRoute™ wireless devices can be installed without the use of screws and pegs. A universal mounting base is fixed to the wall or ceiling with either a staple gun or double side adhesive tape. This allows a very quick and clean installation. Screws can also be used if really wanted. Once all mounting bases are fixed no tools are needed anymore. The devices simply can be plugged on the mounting bases by hand.

- **Higher security**

The security of the SiRoute™ wireless infrastructure is very high thanks to the reliable radio transmission. The transmission is bidirectional and the frequency used is 913.85 MHz.

- **One remote control for alarm system, emergency and home automation control**

Beside the standard controls of a burglar alarm system like full set, part set, unset, the SiRoute™ remote control has a panic key and an on/off button for home automation control. Advanced controls allow putting the control panel in the walk test mode. The remote control can be used to either operate the entire system or a selected partition. The remote control can be secured by a 4 digits PIN code, which is easily programmed, changed or disabled.

- **Reduced inventory cost**

All available participants use only 2 different radio modules. One radio module is dedicated to round detectors (e.g. smoke detectors). The number of radio modules and the number of elements can be managed independently as they are supplied in separated packages.

- **Family looks blends with all environments**

The family design of the SiRoute™ peripherals supports its modular structure. The SiRoute™ devices blend in private homes as well as in commercial premises.

- **Simple addressing**

A SiRoute™ wireless device is automatically enrolled in the control panel in two steps. Step 1: insert the batteries in the radio module. Step 2: plug the peripheral of your choice onto the radio module. Addressing the remote control is even easier: just press the Panic button.

Details for ordering

Type	Part no	Designation	Dimensions (mm)	Weight ²
W7OP303	A5Q00001898	SiRoute™ smoke detector ¹	H 100 x L 100 x P 42 ¹	0.062kg ¹
W7IR90	A5Q00001849	SiRoute™ PIR motion detector ¹	H 155 x L 58 x P 44 ¹	0.062kg ¹
W7GB650	A5Q00001900	SiRoute™ acoustic glassbreak detector ¹	H 126 x L 58 x P 23 ¹	0.042kg ¹
W7MK100	A5Q00001901	SiRoute™ door contact ¹	H 126 x L 58 x P 20 ¹	0.040kg ¹
W7IO22	A5Q00001903	SiRoute™ input/output module 2/2 ¹	H 126 x L 58 x P 24 ¹	0.055kg ¹
W7SR10	A5Q00001904	SiRoute™ indoor siren ¹	H 126 x L 58 x P 30 ¹	0.045kg ¹
W7SR25	A5Q0000????	SiRoute™ outdoor siren	H 323 x L 240 x P 97	2.600kg
W7RC20	A5Q00004860	SiRoute™ remote control	H 83 x L 40 x P 7	0.020kg
W7BT20	A5Q00004856	SiRoute™ radio module standard	H 92 x L 68 x P 32	0.130kg
W7BT21	A5Q00004857	SiRoute™ radio module for round detectors	H 103 x L 103 x P 40	0.150kg
W7EG20	A5Q00004858	SiRoute™ E-Gateway Radio gateway for E-Bus	H 86 x L 135 x P 27	0.122kg
W7MK105	A5Q00002782	SiRoute™ magnet for W7MK100 (5 pcs.) Spare/replacement part for W7MK100	H 15-23 x L 54 x P 13 ³	0.160kg ⁴
W7UM10	A5Q00003601	SiRoute™ universal mounting base (10 pcs.) Spare/replacement part for W7BT20/21	H 92 x L 63 x P 22 ³	0.125kg ⁴
W7UM20	A5Q00003624	SiRoute™ corner mounting bracket (5 pcs.) Option for W7BT20 typically used together with PIR motion detector W7IR90	H 61 x L 51 x P 51 ³	0.075kg ⁴
-	502922	Long range Fresnel lens (3 pcs.) Option for PIR motion detector W7IR90	H 65 x L 52 x P 2 ³	0.005kg ⁴

¹ excl. radio module

² approx. net weight (excl. package)

³ dimensions for one piece

⁴ weight for one set of pieces

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 Supply subject to availability.

Document no. **prelim.**
 Edition 01.2004

Technical Data 7 Button Remote Control

Radio Hardware

Frequency:	913,85 MHz
Tx bandwidth:	300 kHz
Bit rate:	16.3 kBd
Output power:	< -1 dBm
Modulation:	frequency modulation
Temperature range:	-10 to +55 °C

Data Exchange

Data transmission:	unidirectional
Data check:	checksum
Data rate:	16.3 Baud
Telegram security:	3 transmissions; period 1 s
Preamble length:	500 ms

Power Supply

Supply voltage:	2.1 V to 4 V
Battery type:	CR 2032; 3 V Li
Expected battery life time:	5 years

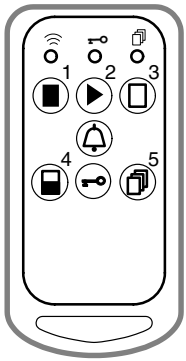
Housing

Dimensions:	approx. credit card
Number of keys:	7
Typ of keys:	foil keys
Number of LEDs:	3
Material of housing:	polycarbonat

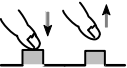
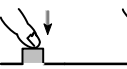
Module Number

PCB of NOVUM Remote Control Transmitter: S 24218-A74-A401

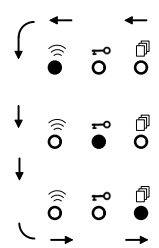
SIEMENS



SiRoute
W7RC20
Remote control
11.2003
007930a__ _
A5Q00005387

Overview	BUTTONS / LEDs	Panic (alarm) / Addressing			FULL SET 	PART SET 	UNSET 	RC / Walktest 
 = Transmit (broadcast)  = PIN (programming)  = Partition Selection  = Full Set  = Remote Control (R.C.)  = Unset  = Part Set  = Partition Selection *  = Panic (alarm)  = PIN **** * not implemented in Sintony	 short (< 2s)  long (> 2s) LEDs  off  on	 short    24h/7d  short   	 short	 short	 short	 short	 short	 short
			   Enter PIN	   *	   Full set	   Part set	   Unset	   Remote control
			 1...5 short Enter PIN digit 1	 1...5 short Enter PIN digit 2	 long		 long	 long
			   Partition no.	  	   *		   *	   *

front: 10 fields, folded for format 80 x 41 mm

	PROGRAM NEW PIN 	CHANGE PIN 	DELETE PIN 		TROUBLE	BATTERY LOW			
Basic	Expert	Expert	Expert		--	--			
Enter PIN	--	Enter PIN	Enter PIN		--	--			
PIN OPERATION					INDICATIONS				
 short	 long	 long	 long		2 x  Trouble	3x  Battery low			
 Enter PIN	 Program New PIN	 Change PIN	 Delete PIN						
 1...5 short Enter PIN digit 1	 1...5 short Enter PIN digit 1	 1...5 short Enter PIN digit 1	 1 short Enter PIN digit 1						
 1...5 short Enter PIN digit 2	 1...5 short Enter PIN digit 2	 1...5 short Enter PIN digit 2	 1 short Enter PIN digit 2						
 1...5 short Enter PIN digit 3	 1...5 short Enter PIN digit 3	 1...5 short Enter PIN digit 3	 1 short Enter PIN digit 3						
 1...5 short Enter PIN digit 4	 1...5 short Enter PIN digit 4	 1...5 short Enter PIN digit 4	 1 short Enter PIN digit 4						

back 10 fields, folded for format 80 x 41 mm