

6GK6041-6AT2.-.... RUGGEDCOM RS416

Technical Data

Product-type designation	RUGGEDCOM RS416
Product description	serial device server with an integrated fully managed Ethernet switch, 128-bit Encryption, up to 16 serial ports & up to 4 Ethernet ports, Copper or Fiber options, Supports IEEE 1588 v2, Non-blocking, store and forward switching

THE RUGGEDCOM RS416 IS AN INDUSTRIALLY HARDENED SERIAL DEVICE SERVER WITH AN INTEGRATED, FULLY MANAGED, ETHERNET SWITCH, DESIGNED TO OPERATE RELIABLY IN ELECTRICALLY HARSH AND CLIMATICALLY DEMANDING ENVIRONMENTS. 128-BIT ENCRYPTION; UP TO 16 SERIAL PORTS & UP TO 4 ETHERNET PORTS, COPPER OR FIBER OPTIONS; SUPPORTS IEEE 1588 V2; NON-BLOCKING, STORE AND FORWARD SWITCHING



Transmission rate	
Transfer rate	
<ul style="list-style-type: none"> • 1 	10 Mbit/s
<ul style="list-style-type: none"> • 2 	100 Mbit/s
Transfer rate	
<ul style="list-style-type: none"> • in accordance with RS 232 	300...115200 bit/s
<ul style="list-style-type: none"> • in accordance with RS 422/485 	300...115200 bit/s
<ul style="list-style-type: none"> • according to V.90 	56000 bit/s

Interfaces	
Number of electrical/optical connections / for network components or terminal equipment / maximum	4
Number of electrical connections	
<ul style="list-style-type: none"> • for network components and terminal equipment 	4
<ul style="list-style-type: none"> • maximum 	4
<ul style="list-style-type: none"> • for serial interfaces / in accordance with RS 232/RS 422/RS 485 / maximum 	16

• for signaling contact	1
• for power supply	1
• for redundant power supply	1
Design of electrical connection	
• for network components and terminal equipment	RJ45-Port, SUB-D 9 pin
• for signaling contact	10-pole terminal block
• for power supply	10-pole terminal block
Number of optical connections / for network components or terminal equipment / maximum	4
Number of optical connections / for fiber-optic cables	
• at 10 Mbit/s	4
• at 100 Mbit/s	4
Design of optical interface / for optical waveguide	
• at 10 Mbit/s	ST-Port (BFOC-Port)
• at 100 Mbit/s	ST-/SC-/MTRJ-/LC-Port
Range / at the optical interface / depending on the optical fiber used	2...90 km
Signal-Inputs/outputs	
Operating voltage / of signaling contacts / at AC / rated value	250 V
Operating current / of signaling contacts / at AC / maximum	0.4 A
Operating voltage / of signaling contacts / at DC / rated value	30 V
Operating current / of signaling contacts / at DC / maximum	2 A
Supply voltage, current consumption, power loss	
product options / wide range power supply	Yes
Type of voltage supply	True Dual Redundant Parallel Load Sharing (Optional)
Type of voltage / 1 / of the supply voltage	DC
Supply voltage / 1	
• rated value	24 V
• rated value	18...36 V
Type of voltage / 2 / of the supply voltage	DC
Supply voltage / 2	
• rated value	48 V
• rated value	36...59 V
Type of voltage / 3 / of the supply voltage	DC
Supply voltage / 3	
• nominal value	110 V
• rated value	88...300 V
Type of voltage / 4 / of the supply voltage	AC
Supply voltage / 4	

<ul style="list-style-type: none"> rated value 	85...265 V
Product component / fusing at power supply input	Yes
Power loss	
<ul style="list-style-type: none"> maximum 	15 W
Permitted ambient conditions	
Ambient temperature	
<ul style="list-style-type: none"> during operating 	-40...+85 °C
<ul style="list-style-type: none"> during storage 	-40...+85 °C
<ul style="list-style-type: none"> during transport 	-40...+85 °C
<ul style="list-style-type: none"> Comment 	A maximum operating temperature of +85 °C is permissible for a duration of 16 hours
Relative humidity / at 25 °C / without condensation / during operating / maximum	95 %
Coating	conformal coating optional
operating condition / fanless operation	Yes
Protection class IP	IP40
Design, dimensions and weight	
Design	19-inch rack
Width	466.7 mm (18.37 in)
Height	44 mm (1.73 in)
Depth	315 mm (12.4 in)
Net weight	5.2 kg
Material / of the enclosure	18 AWG galvanized steel enclosure
Type of mounting	
<ul style="list-style-type: none"> 35 mm DIN rail mounting 	Yes
<ul style="list-style-type: none"> S7-300 rail mounting 	No
<ul style="list-style-type: none"> Installation 19 inch 	Yes
<ul style="list-style-type: none"> wall mounting 	Yes
product component part / integrated / Ethernet switch	Yes
product function	
<ul style="list-style-type: none"> DNP 3.0 to DNP conversion via UDP/TCP 	Yes
<ul style="list-style-type: none"> Modbus RTU to Modbus TCP conversion 	Yes
<ul style="list-style-type: none"> RAW socket mode for any serial protocols 	Yes
Protocol / is supported	
<ul style="list-style-type: none"> DNP3 	Yes
<ul style="list-style-type: none"> GVRP 	Yes
<ul style="list-style-type: none"> HTTP 	Yes
<ul style="list-style-type: none"> Modbus TCP 	Yes
<ul style="list-style-type: none"> TFTP 	Yes
Product function / CLI	Yes
Product function / RMON	Yes
Product function / web-based management	Yes
Protocol / is supported / Telnet	Yes

Product function / MIB support	Yes
Protocol / is supported	
<ul style="list-style-type: none"> • SNMP v1 	Yes
<ul style="list-style-type: none"> • SNMP v3 	Yes
product function / for MIB-support	
<ul style="list-style-type: none"> • by BRIDGE-MIB 	RFC1493
<ul style="list-style-type: none"> • by IF-MIB 	RFC2863
<ul style="list-style-type: none"> • by RMON-MIB 	RFC2819
<ul style="list-style-type: none"> • by RSTP-MIB 	draft-ietf-bridge-bridgemib-smiv2-03
<ul style="list-style-type: none"> • by SNMPv2-MIB 	RFC1907
<ul style="list-style-type: none"> • by SNMPv2-SMI 	RFC2578
<ul style="list-style-type: none"> • by SNMPv2-TC 	RFC2579
<ul style="list-style-type: none"> • by TCP-MIB 	RFC2012
<ul style="list-style-type: none"> • by UDP-MIB 	RFC2013
Number of VLANs / maximum	255
Product function / VLAN - port based	Yes
Product function	
<ul style="list-style-type: none"> • DHCP Option 82 	Yes
product function	
<ul style="list-style-type: none"> • redundancy procedure MSTP 	No
<ul style="list-style-type: none"> • RSTP redundancy protocol 	Yes
<ul style="list-style-type: none"> • eRSTP 	Yes
Protocol / is supported	
<ul style="list-style-type: none"> • MSTP 	No
<ul style="list-style-type: none"> • RSTP 	Yes
Product function / IEEE 802.1x (radius)	Yes
Protocol / is supported / SSL	Yes
Protocol / is supported	
<ul style="list-style-type: none"> • NTP 	Yes
<ul style="list-style-type: none"> • SNTP 	Yes
Standards, specifications, approvals	
Standard	
<ul style="list-style-type: none"> • for EMC 	FCC Part 15 (Class A), EN55022 (CISPR22 Class A)
<ul style="list-style-type: none"> • for safety / of CSA and UL 	UL 60950-1, CSA C22.2 no. 60950-7
<ul style="list-style-type: none"> • for hazardous area / of CSA and UL 	Hazardous Locations: Class 1 Division 2
<ul style="list-style-type: none"> • for emitted interference 	EN 61000-6-4 (Class A)
<ul style="list-style-type: none"> • for interference immunity 	EN 61000-6-2
Laser protection class	Complies with 21 CFR Chapter 1, Subchapter J
Verification of suitability	EN 61000-6-2, EN 61000-6-10
Verification of suitability	
<ul style="list-style-type: none"> • regarding NEMA 	TS 2

• CE mark	Yes
• C-Tick	No
• IEC 61850-3	Yes
Further Information / Internet Links	
Internet link	
• to website	
• Industry Mall/RUGGEDCOM Selector	http://ruggedcom-selector.automation.siemens.com
• Industry Mall	http://www.siemens.com/industrial-controls/mall
• selection instrument cables and connectors	http://www.siemens.com/snst
• CAx-Download-Manager	http://www.siemens.com/cax
• industrial communication	http://www.siemens.com/simatic-net
• Information und Download Center	http://www.siemens.com/automation/net/catalog
• image database	http://automation.siemens.com/bilddb
• Industry Online Support	http://support.automation.siemens.com
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