



# Modicon Networking

Connecting Ethernet Devices





# Modicon

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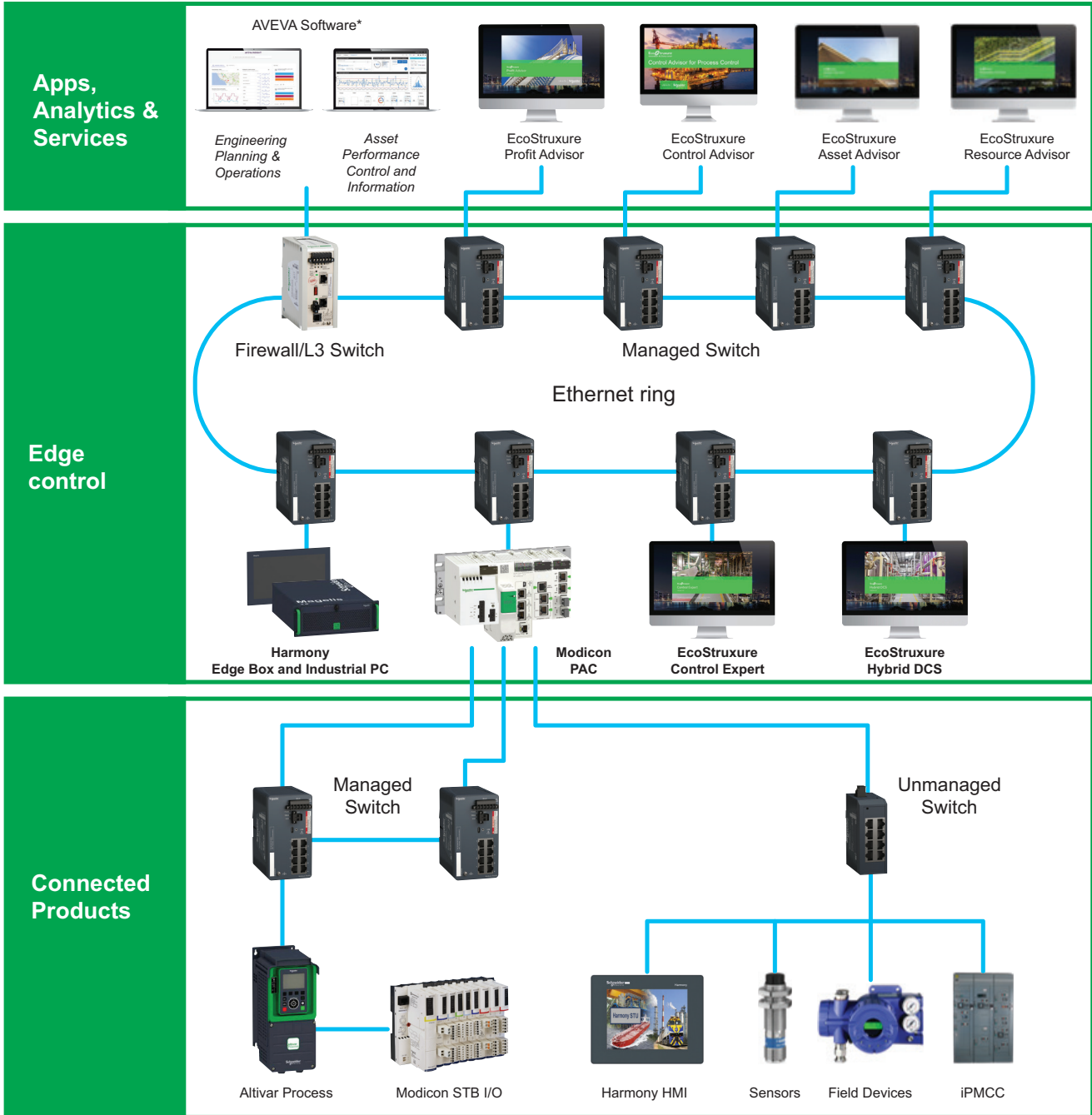
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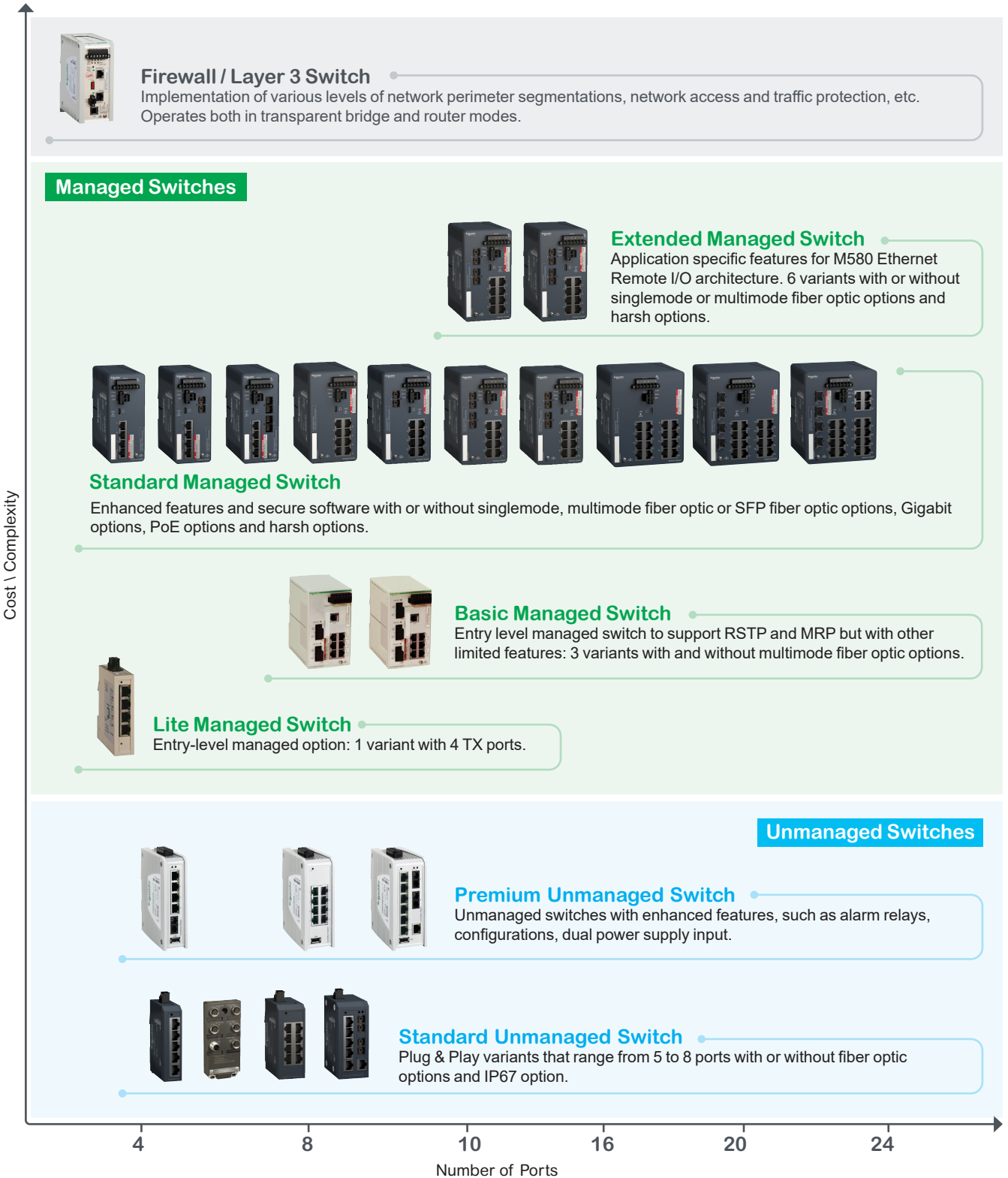
### Ethernet Architecture

**Modicon Networking** is a complete offer portfolio of Ethernet connectivity products. It connects all the EcoStruxure stacks together in an efficient and secure manner.









## Networking offers

Based on the complexity and application, we provide networking products in different categories and levels, covering unmanaged switches, managed switches and firewalls.



# Industrial Ethernet Switch






Standard Unmanaged Switch,  
IP67 Unmanaged Switch

Device type		Standard Unmanaged Switch, 5TX	Standard Unmanaged Switch, 4TX/1FX-MM	Standard Unmanaged Switch, 8TX	Standard Unmanaged Switch, 6TX/2FX-MM	Standard Unmanaged Switch, 6TX/2FX-SM	IP67 Unmanaged Switch, 5TX	
								
Interfaces	Copper cable ports	5 x 10/100BASE-TX ports	4 x 10/100BASE-TX ports	8 x 10/100BASE-TX ports			5 x 10/100BASE-TX ports	
		Shielded connectors	RJ45				M12 (type D, female)	
		Medium	Shielded twisted pair, category CAT 5E					
		Total length of pair	100 m/328 ft					
		Fiber optic ports		1 x 100BASE-FX port		2 x 100BASE-FX port		
				Duplex SC		Duplex SC		
				Multimode fiber		Multimode fiber	Singlemode fiber	
		Length of fiber		5,000 m/16,404 ft (1)		5,000 m/16,404 ft (1)		
				4,000 m/13,123 ft (1)		4,000 m/13,123 ft (1)		
		Attenuation analysis		8 dB		8 dB	30,000 m/98,425 ft (2)	
			11 dB		11 dB			
						16 dB		
	Ethernet services							
	Configuration							
Redundancy								
Power supply	Voltage	12...24 V $\overline{\text{---}}$ (9.6...32 V) SELV					24 V $\overline{\text{---}}$ (18...32 V) SELV	
	Consumption	1.3 W	2.4 W	1.5 W	3.8 W		3.2 W	
	Removable terminal block	3 - pin					5 - pin, with M12 (type A, male)	
Operating temperature		0...+60°C/+32...+140°F						
Relative humidity		10...95% non-condensing					5...100%	
Degree of protection		IP 30					IP 67	
Dimensions	W x H x D	26 x 102 x 79 mm/1.02 x 4.01 x 3.11 in.		38 x 102 x 79 mm/1.50 x 4.02 x 3.11 in.	45 x 110 x 88 mm/1.77 x 4.33 x 3.46 in.		60 x 126 x 31 mm/2.36 x 4.96 x 1.22 in.	
Mounting		On symmetrical DIN rail, 35 mm/1.38 in. wide					On a flat surface in. wide	
Weight		0.125 kg/0.275 lb	0.130 kg/0.285 lb	0.150 kg/0.331 lb	0.235 kg/0.518 lb		0.210 kg/0.463 lb	
Conforming to standards		IEC/EN 61131-2, UL 61010-1, UL 61010-2-201, CAN/CSA C22.2 No. 61010-1, CAN/CSA C22.2 No. 61010-2-201					IEC/EN 61131-2, UL 508, CAN/CSA C22.2 No. 142	
LED indicators		Power supply, link status, data status					Power supply, link status	
Alarm relay		-					-	
Reference		<b>MCSESU053FN0</b>	<b>MCSESU053F1CU0</b>	<b>MCSESU083FN0</b>	<b>MCSESU083F2CU0</b>	<b>MCSESU083F2CS0</b>	<b>TCSESU051F0</b>	
Pages		23						

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
 (2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).

# Industrial Ethernet Switch

## Premium Unmanaged Switch




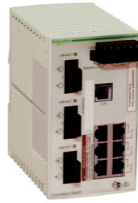
Device type			Premium Unmanaged Switch, 4TX/1FX-MM	Premium Unmanaged Switch, 4TX/1FX-SM	Premium Unmanaged Switch, 8TX	Premium Unmanaged Switch, 7TX/2FX-MM	Premium Unmanaged Switch, 7TX/2FX-SM	
								
Interfaces	Copper cable ports	Number and type	4 x 10/100BASE-TX ports		8 x 10/100BASE-TX ports		7 x 10/100BASE-TX ports	
		Shielded connectors	RJ45					
		Medium	Shielded twisted pair, category CAT 5E					
		Total length of pair	100 m/328 ft					
	Fiber optic ports	Number and type	1 x 100BASE-FX port		-		2 x 100BASE-FX port	
		Connectors	Duplex SC		-		Duplex SC	
		Medium	Multimode fiber		-		Multimode fiber	
		Length of fiber	50/125 μm	-		-		5,000 m/16,404 ft (1)
			62.2/125 μm	-		-		4,000 m/13,123 ft (1)
			9/125 μm	30,000 m/98,425 ft (2)		-		30,000 m/98,425 ft (2)
Attenuation analysis		50/125 μm fiber	8 dB		-		8 dB	
		62.2/125 μm fiber	11 dB		-		11 dB	
		9/125 μm fiber	-		-		-	
			16 dB		-		16 dB	
Ethernet services	QoS, aging time, flow control, broadcast storm protection/threshold, multicast storm protection/threshold, port based priority, link alarm							
Configuration	USB Master mode, USB 2.0 type A							
Redundancy			-					
Power supply	Voltage	12 ... 24 V $\overline{\text{DC}}$ (9.6...32 V) SELV						
	Consumption	4.3 W		2.6 W		6.9 W		
	Removable terminal block	6 - pin (redundant power supplies)						
Operating temperature			- 40...+ 70°C/- 40...+ 158°F					
Relative humidity			10...95% non-condensing					
Degree of protection			IP 40					
Dimensions		W x H x D	39 x 135 x 117 mm/1.53 x 5.31 x 4.61 in.		50 x 135 x 117 mm/1.97 x 5.31 x 4.50 in.		56 x 135 x 117 mm/2.20 x 5.31 x 4.61 in.	
Mounting			On symmetrical DIN rail, 35 mm/1.38 in. wide					
Weight			0.430 kg/0.948 lb		0.440 kg/0.970 lb		0.510 kg/1.124 lb	
Conforming to standards			IEC/EN 61131-2, UL 61010-1, UL 61010-2-201, CAN/CSA C22.2 No. 61010-1, CAN/CSA C22.2 No. 61010-2-201, IACS E10, UL 121201 / CSA C22.2 No. 213 Class I Division 2					
LED indicators			P1 and P2 power supplies, link status, data status					
Alarm relay			Activity, detected fault (power supply, Ethernet network, or communication port) (volt-free contact 1 A max. at 24 V $\overline{\text{DC}}$ )					
Reference			TCSESPU053F1CU0		TCSESPU053F1CS0		TCSESPU083FN0	
							TCSESPU093F2CU0	
Pages			23					

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
 (2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).



# Industrial Ethernet Switch

Lite Managed Switch, Basic Managed Switch

Device type		Lite Managed Switch, 4TX	Basic Managed Switch, 8TX	Basic Managed Switch, 6TX/2FX-MM	Basic Managed Switch, 6TX/3FX-MM
					
Interfaces	Copper cable ports	8 x 10/100BASE-TX ports		6 x 10/100BASE-TX ports	
		RJ45			
		Shielded twisted pair, category CAT 5E			
		100 m/328 ft			
	Fiber optic ports	-		2 x 100BASE-FX ports	3 x 100BASE-FX ports
		-		Duplex SC	
		-		Multimode fiber	
	Length of fiber	50/125 µm		5,000 m/16,404 ft (1)	
		62.2/125 µm		4,000 m/13,123 ft (1)	
		9/125 µm			
Attenuation analysis	50/125 µm fiber	-		8 dB	
	62.2/125 µm fiber	-		11 dB	
	9/125 µm fiber	-			
Ethernet services	Web Management, HTTPS, SNMP V1/V2/V3, BOOTP server, DHCP server, Log files, remote monitoring (RMON)	SNTP client, multicast filtering for optimization of the Global Data protocol, configuration via Web access, IGMP Snooping, RSTP ( <i>Rapid Scanning Tree Protocol</i> ), priority port			
Configuration	-	RJ11 V.24 (RS232)			
Redundancy		RSTP	HIPER-ring, RSTP, MRP		
Power supply	Voltage	12...24 V $\overline{=}$ (9.6...32 V $\overline{=}$ ) SELV			
	Consumption	2.35 W	6 W	8 W	9 W
	Removable terminal block	3 - pin	6 - pin (redundant power supplies)		
Operating temperature		0...+50 °C/+32...122 °F	0...+60 °C/+32...+140 °F		
Relative humidity		5...95% non-condensing	10...95% non-condensing		
Degree of protection		IP 30	IP 20		
Dimensions		W x H x D	25 x 114 x 79 mm/0.98 x 4.49 x 3.11 in.	47 x 131 x 111 mm/1.85 x 5.15 x 4.37 in.	74 x 131 x 111 mm/2.91 x 5.15 x 4.37 in.
Mounting		On symmetrical DIN rail, 35 mm/1.38 in. wide			
Weight		0.103 kg/0.227 lb	0.400 kg/0.882 lb	0.410 kg/0.904 lb	
Conforming to standards		IEC/EN 61131-2, UL 61010-1, UL 61010-2-201, CAN/CSA C22.2 No. 61010-1, CAN/CSA C22.2 No. 61010-2-201	IEC/EN 61131-2, UL 508, CAN/CSA C22.2 No. 142, UL 121201 / CSA C22.2 No. 213 Class I Division 2		
LED indicators		Power supply status, link status, data rate	Power supply status, alarm relay status, active redundancy, redundancy management, port status		
Alarm relay		-	Detected fault (power supply, Ethernet network, or communication port) (volt-free contact 1 A max. at 24 V $\overline{=}$ )		
Reference		<b>TCESL043F23F0</b>	<b>TCESB083F23F0</b>	<b>TCESB083F2CU0</b>	<b>TCESB093F2CU0</b>
Pages		24			

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).

# Industrial Ethernet Switch

## Standard Managed Switch

Device type	Standard Managed Switch, 4TX	Standard Managed Switch, 4TX/1FX-MM	Standard Managed Switch, 4TX/1FX-SM	Standard Managed Switch, 4TX/2FX-MM	Standard Managed Switch, 4TX/2FX-SM	Standard Managed Switch, 8TX	Standard Managed Switch, 8TX, Harsh
<b>Interfaces</b>	<p>Copper cable ports</p> <p>Number and type: 4 x 10/100BASE-TX ports</p> <p>Shielded connectors: RJ45</p> <p>Medium: Shielded twisted pair, category CAT 5E</p> <p>Total length of pair: 100 m/328 ft</p>						<p>8 x 10/100BASE-TX ports</p>
	<p>Fiber optic ports</p> <p>Number and type: 1 x 100BASE-FX port</p> <p>Connectors: Duplex SC</p> <p>Medium: Multimode fiber</p> <p>Length of fiber: 5,000 m/16,404 ft (1)</p> <p>Attenuation analysis: 8 dB</p>		<p>Single-mode fiber</p> <p>Length of fiber: 30,000 m/98,425 ft (2)</p> <p>Attenuation analysis: 16 dB</p>		<p>2 x 100BASE-FX ports</p> <p>Medium: Multimode fiber</p> <p>Length of fiber: 4,000 m/13,123 ft (1)</p> <p>Attenuation analysis: 11 dB</p>		<p>Single-mode fiber</p> <p>Length of fiber: 30,000 m/98,425 ft (2)</p> <p>Attenuation analysis: 16 dB</p>
	<p>Ethernet services: Web Management, SNMP V1/V2/V3, BOOTP server, DHCP server, Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail, PTP, TSN, IPv6</p> <p>Configuration: USB Type-C (3)</p>						
<b>Redundancy</b>	HIPER-ring, RSTP, MRP, link aggregation, link backup, redundant coupling						
<b>Power supply</b>	<p>Voltage: 12...24 V ⎓ (9.6...32 V ⎓) SELV</p> <p>Consumption: 5 W, 6 W, 7 W, 6 W</p> <p>Removable terminal block: 6-pin (redundant power supplies)</p>						
<b>Operating temperature</b>	0...+60°C/+32...+140°F						-40...+70°C/-40...+158°F
<b>Relative humidity</b>	1...95% non-condensing						
<b>Degree of protection</b>	IP 30						
<b>Dimensions</b>	57 x 142.8 x 117.6 mm/2.24 x 5.62 x 4.57 in.						73 x 142.8 x 117.6 mm/2.87 x 5.62 x 4.57 in.
<b>Mounting</b>	On symmetrical DIN rail, 35 mm/1.38 in. wide						
<b>Weight</b>	0.380 kg/0.837 lb		0.420 kg/0.925 lb				0.500 kg/1.102 lb
<b>Conforming to standards</b>	IEC/EN 61131-2, UL 61010-1, UL 61010-2-201, CAN/CSA C22.2 No. 61010-1, CAN/CSA C22.2 No. 61010-2-201, UL 121201 / CSA C22.2 No. 213 Class I Division 2, IEC/EN 60079-0, IEC/EN 60079-15, IACS E10, IEC 50121-4, IEC 61850-3						
<b>LED indicators</b>	Power supply status, device status, storage medium status, port status						
<b>Alarm relay</b>	Detected fault (temperature, ring redundancy, connection errors, external memory, power supply), (volt-free contact 1 A max. at 24 V ⎓)						
<b>Reference</b>	<b>MCSESM043F23F0</b>	<b>MCSESM053F1CU0</b>	<b>MCSESM053F1CS0</b>	<b>MCSESM063F2CU0</b>	<b>MCSESM063F2CS0</b>	<b>MCSESM083F23F0</b>	<b>MCSESM083F23F0H</b>
<b>Pages</b>	24						25







(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).

(2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).

(3) The optional reference Memory Backup adapter is available in Separate parts and accessories for switches on page 29.

# Industrial Ethernet Switch




## Standard Managed Switch

Device type		Standard Managed Switch, 8TX/1FX-MM	Standard Managed Switch, 8TX/1FX-SM	Standard Managed Switch, 8TX/2FX-MM	Standard Managed Switch, 8TX/2FX-MM, Harsh	Standard Managed Switch, 8TX/2FX-SM	Standard Managed Switch, 8TX/2FX-SM, Harsh		
									
Interfaces	Copper cable ports	8 x 10/100BASE-TX ports							
		RJ45							
		Shielded twisted pair, category CAT 5E							
		Medium							
		Total length of pair							
		100 m/328 ft							
	Fiber optic ports	1 x 100BASE-FX port			2 x 100BASE-FX ports				
		Duplex SC							
		Multimode fiber		Single-mode fiber		Multimode fiber		Single-mode fiber	
	Length of fiber	5,000 m/16,404 ft (1)		-		5,000 m/16,404 ft (1)		-	
	62.2/125 μm		-		4,000 m/13,123 ft (1)		-		
	9/125 μm		30,000 m/98,425 ft (2)		-		30,000 m/98,425 ft (2)		
Attenuation analysis	50/125 μm fiber		-		8 dB		-		
	62.2/125 μm fiber		-		11 dB		-		
	9/125 μm fiber		16 dB		-		16 dB		
Ethernet services	Web Management, SNMP V1/V2/V3, BOOTP server, DHCP server, Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail, PTP, TSN, IPv6								
Configuration	USB Type-C (3)								
Redundancy	HIPER-ring, RSTP, MRP, link aggregation, link backup, redundant coupling								
Power supply	Voltage	12...24 V --- (9.6...32 V ---) SELV							
	Consumption	7 W			8 W				
	Removable terminal block	6-pin (redundant power supplies)							
Operating temperature	0...+60°C/+32...+140°F			-40...+70°C/-40...+158°F		0...+60°C/+32...+140°F		-40...+70°C/-40...+158°F	
Relative humidity	1...95% non-condensing								
Degree of protection	IP 30								
Dimensions	W x H x D	73 x 142.8 x 117.6 mm/2.87 x 5.62 x 4.57 in.							
Mounting	On symmetrical DIN rail, 35 mm/1.38 in. wide								
Weight		0.500 kg/1.102 lb			0.570 kg/1.256 lb		0.500 kg/1.102 lb		0.570 kg/1.256 lb
Conforming to standards	IEC/EN 61131-2, UL 61010-1, UL 61010-2-201, CAN/CSA C22.2 No. 61010-1, CAN/CSA C22.2 No. 61010-2-201, UL 121201 / CSA C22.2 No. 213 Class I Division 2, IEC/EN 60079-0, IEC/EN 60079-15, IACS E10, IEC 50121-4, IEC 61850-3								
LED indicators	Power supply status, device status, storage medium status, port status								
Alarm relay	Detected fault (temperature, ring redundancy, connection errors, external memory, power supply), (volt-free contact 1 A max. at 24 V ---)								
Reference	<b>MCSESM093F1CU0</b>	<b>MCSESM093F1CS0</b>	<b>MCSESM103F2CU0</b>	<b>MCSESM103F2CU0H</b>	<b>MCSESM103F2CS0</b>	<b>MCSESM103F2CS0H</b>			
Pages	25								

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
 (2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).  
 (3) The optional reference Memory Backup adapter is available in Separate parts and accessories for switches on page 29.

# Industrial Ethernet Switch

## Standard Managed Switch





Device type			Standard Managed Switch, 8TX/4GE-TX	Standard Managed Switch, 8TX/4GE-SFP	Standard Managed Switch, 16TX
					
<b>Interfaces</b>	Copper cable ports	Number and type	8 x 10/100BASE-TX + 4 x 10/100/1000BASE-TX ports	8 x 10/100BASE-TX ports	16 x 10/100BASE-TX ports
		Shielded connectors	RJ45		
		Medium	Shielded twisted pair, category CAT 5E		
	Fiber optic ports	Total length of pair	100 m/328 ft		
		Number and type	–	4 x 100/1000BASE SFP ports	–
		Connectors	–	SFP (1)	–
	Length of fiber	50/125 µm	–		
		62.2/125 µm	–		
		9/125 µm	–		
	Attenuation analysis	50/125 µm fiber	–		
62.2/125 µm fiber		–			
9/125 µm fiber		–			
Ethernet services	Web Management, SNMP V1/V2/V3, BOOTP server, DHCP server, Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail, PTP, TSN, IPv6				
Configuration	USB Type-C (2)				
<b>Redundancy</b>			HIPER-ring, RSTP, MRP, link aggregation, link backup, redundant coupling		
<b>Power supply</b>	Voltage	12...24 V ⎓ (9.6...32 V ⎓) SELV			
	Consumption	9 W	9 W + 1 W per SFP fiber optic module	10 W	
	Removable terminal block	6-pin (redundant power supplies)			
<b>Operating temperature</b>			0...+ 60°C/+ 32...+ 140°F		
<b>Relative humidity</b>			1...95% non-condensing		
<b>Degree of protection</b>			IP 30		
<b>Dimensions</b>		W x H x D	73 x 142.8 x 117.6 mm/2.87 x 5.62 x 4.57 in.		108.8 x 142.8 x 117.6 mm/4.28 x 5.62 x 4.57 in.
<b>Mounting</b>			On symmetrical DIN rail, 35 mm/1.38 in. wide		
<b>Weight</b>			0.700 kg/1.543 lb	0.570 kg/1.256 lb	0.880 kg/1.940 lb
<b>Conforming to standards</b>			IEC/EN 61131-2, UL 61010-1, UL 61010-2-201, CAN/CSA C22.2 No. 61010-1, CAN/CSA C22.2 No. 61010-2-201, UL 121201 / CSA C22.2 No. 213 Class I Division 2, IEC/EN 60079-0, IEC/EN 60079-15, IACS E10, IEC 50121-4, IEC 61850-3		IEC/EN 61131-2, UL 61010-1, UL 61010-2-201, CAN/CSA C22.2 No. 61010-1, CAN/CSA C22.2 No. 61010-2-201, UL 121201 / CSA C22.2 No. 213 Class I Division 2, IEC/EN 60079-0, IEC/EN 60079-15, IACS E10, IEC 61850-3
<b>LED indicators</b>			Power supply status, device status, storage medium status, port status		
<b>Alarm relay</b>			Detected fault (temperature, ring redundancy, connection errors, external memory, power supply), (volt-free contact 1 A max. at 24 V ⎓)		
<b>Reference</b>			<b>MCSESM123F23G0</b>	<b>MCSESM123F2LG0</b>	<b>MCSESM163F23F0</b>
<b>Pages</b>			25		26

(1) These optional references of SFP transceivers are available in Separate parts and accessories for switches on page 29.

(2) The optional reference Memory Backup adapter is available in Separate parts and accessories for switches on page 29.

# Industrial Ethernet Switch







## Standard Managed Switch, PoE Managed Switch

Device type			Standard Managed Switch, 16TX/4GE-SFP	Standard Managed Switch, 20TX/4GE-SFP	PoE Managed Switch, 8GE-TX	PoE Managed Switch, 8GE-TX, Harsh
						
<b>Interfaces</b>	Copper cable ports	Number and type	16 x 10/100BASE-TX ports		20 x 10/100BASE-TX ports	
		Shielded connectors	RJ45			
		Medium	Shielded twisted pair, category CAT 5E			
		Total length of pair	100 m/328 ft			
	Fiber optic ports	Number and type	4 x 100/1000BASE SFP ports		-	
		Connectors	-		-	
		Medium	SFP (1)		-	
	Length of fiber	50/125 µm	-		-	
		62.2/125 µm	-		-	
		9/125 µm	-		-	
Attenuation analysis	50/125 µm fiber	-		-		
	62.2/125 µm fiber	-		-		
	9/125 µm fiber	-		-		
Ethernet services	Web Management, SNMP V1/V2/V3, BOOTP server, DHCP server, Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail, PTP, TSN, IPv6					
Configuration	USB Type-C (2)					
<b>Redundancy</b>	HIPER-ring, RSTP, MRP, link aggregation, link backup, redundant coupling					
<b>Power supply</b>	Voltage	12...24 V $\overline{\text{DC}}$ (9.6...32 V $\overline{\text{DC}}$ ) SELV			24 V $\overline{\text{DC}}$ (18...30 V $\overline{\text{DC}}$ ) SELV	
	Consumption	15 W + 1 W per SFP fiber optic module		16 W + 1 W per SFP fiber optic module		
	Removable terminal block	6 - pin (redundant power supplies)				
<b>Operating temperature</b>	0...+ 60°C/+ 32...+ 140°F				-40...+ 70°C/ -40...+ 158°F	
<b>Relative humidity</b>	1...95% non-condensing					
<b>Degree of protection</b>	IP 30					
<b>Dimensions</b>	W x H x D	108.8 x 142.8 x 117.6 mm/4.28 x 5.62 x 4.57 in.			122.4 x 144.2 x 117.5 mm/4.82 x 5.68 x 4.58 in.	
<b>Mounting</b>	On symmetrical DIN rail, 35 mm/1.38 in. wide					
<b>Weight</b>		0.95 kg/2.0943 lb		1.05 kg/2.315 lb		1.4 kg/3.086 lb
<b>Conforming to standards</b>	IEC/EN 61131-2, UL 61010-1, UL 61010-2-201, CAN/CSA C22.2 No. 61010-1, CAN/CSA C22.2 No. 61010-2-201, UL 121201 / CSA C22.2 No. 213 Class I Division 2, IEC/EN 60079-0, IEC/EN 60079-15, IACS E10, IEC 61850-3					
<b>LED indicators</b>	Power supply status, device status, storage medium status, port status					
<b>Alarm relay</b>	Detected fault (temperature, ring redundancy, connection errors, external memory, power supply), (volt-free contact 1 A max. at 24 V $\overline{\text{DC}}$ )					
<b>Reference</b>	<b>MCSESM203F4LG0</b>		<b>MCSESM243F4LG0</b>		<b>MCSESP083F23G0</b>	<b>MCSESP083F23G0T</b>
<b>Pages</b>	26					

(1) These optional references of SFP transceivers are available in Separate parts and accessories for switches on page 29.  
 (2) The optional reference Memory Backup adapter is available in Separate parts and accessories for switches on page 29.

# Industrial Ethernet Switch




## Extended Managed Switch

Device type	Extended Managed Switch, 8TX	Extended Managed Switch, 8TX, Harsh	Extended Managed Switch, 8TX/2FX-MM	Extended Managed Switch, 8TX/2FX-MM, Harsh	Extended Managed Switch, 8TX/2FX-SM	Extended Managed Switch, 8TX/2FX-SM, Harsh																																																																																										
																																																																																																
<b>Interfaces</b>	<table border="1"> <tr> <td>Copper cable ports</td> <td>Number and type</td> <td colspan="4">8 x 10/100BASE-TX ports</td> </tr> <tr> <td></td> <td>Shielded connectors</td> <td colspan="4">RJ45</td> </tr> <tr> <td></td> <td>Medium</td> <td colspan="4">Shielded twisted pair, category CAT 5E</td> </tr> <tr> <td></td> <td>Total length of pair</td> <td colspan="4">100 m/328 ft</td> </tr> <tr> <td>Fiber optic ports</td> <td>Number and type</td> <td colspan="2">-</td> <td colspan="2">2 x 100BASE-FX ports</td> </tr> <tr> <td></td> <td>Connectors</td> <td colspan="2">-</td> <td colspan="2">Duplex SC</td> </tr> <tr> <td></td> <td>Medium</td> <td colspan="2">-</td> <td colspan="2">Multimode fiber</td> </tr> <tr> <td>Length of fiber</td> <td>50/125 μm</td> <td colspan="2">-</td> <td colspan="2">5,000 m/16,404 ft (1)</td> </tr> <tr> <td></td> <td>62.2/125 μm</td> <td colspan="2">-</td> <td colspan="2">4,000 m/13,123 ft (1)</td> </tr> <tr> <td></td> <td>9/125 μm</td> <td colspan="2">-</td> <td colspan="2">-</td> </tr> <tr> <td>Attenuation analysis</td> <td>50/125 μm fiber</td> <td colspan="2">-</td> <td colspan="2">8 dB</td> </tr> <tr> <td></td> <td>62.2/125 μm fiber</td> <td colspan="2">-</td> <td colspan="2">11 dB</td> </tr> <tr> <td></td> <td>9/125 μm fiber</td> <td colspan="2">-</td> <td colspan="2">-</td> </tr> <tr> <td>Ethernet services</td> <td colspan="5">Web Management, SNMP V1/V2/V3, BOOTP server, DHCP server, Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail, PTP, TSN, IPv6</td> </tr> <tr> <td>Configuration</td> <td colspan="5">USB Type-C (3)</td> </tr> </table>						Copper cable ports	Number and type	8 x 10/100BASE-TX ports					Shielded connectors	RJ45					Medium	Shielded twisted pair, category CAT 5E					Total length of pair	100 m/328 ft				Fiber optic ports	Number and type	-		2 x 100BASE-FX ports			Connectors	-		Duplex SC			Medium	-		Multimode fiber		Length of fiber	50/125 μm	-		5,000 m/16,404 ft (1)			62.2/125 μm	-		4,000 m/13,123 ft (1)			9/125 μm	-		-		Attenuation analysis	50/125 μm fiber	-		8 dB			62.2/125 μm fiber	-		11 dB			9/125 μm fiber	-		-		Ethernet services	Web Management, SNMP V1/V2/V3, BOOTP server, DHCP server, Ethernet TCP/IP, SSH, HTTP, HTTPS, SNMP, MRP (Media Redundancy Protocol), RSTP, SFTP, LLDP, SNMP-Traps and SYSLOG, IGMP Snooping, VLAN, Telnet, TFTP, address conflict detection, port monitoring, port mirroring, bandwidth management, MAC notification, TCP dump, link flap detection, RMON (remote network monitoring), self test, signal contact, port hardening, password protection, RADIUS assignment, DoS prevention, role-based access control, audit trail, PTP, TSN, IPv6					Configuration	USB Type-C (3)				
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Configuration	USB Type-C (3)																																																																																															
<b>Redundancy</b>	HIPER-ring, RSTP, MRP, link aggregation, link backup, redundant coupling, dual-RSTP ring coupling																																																																																															
<b>Power supply</b>	<table border="1"> <tr> <td>Voltage</td> <td colspan="6">12...24 V ⎓ (9.6...32 V ⎓) SELV</td> </tr> <tr> <td>Consumption</td> <td colspan="2">6 W</td> <td colspan="2">8 W</td> <td colspan="2"></td> </tr> <tr> <td>Removable terminal block</td> <td colspan="6">6 - pin (redundant power supplies)</td> </tr> </table>						Voltage	12...24 V ⎓ (9.6...32 V ⎓) SELV						Consumption	6 W		8 W				Removable terminal block	6 - pin (redundant power supplies)																																																																										
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Consumption	6 W		8 W																																																																																													
Removable terminal block	6 - pin (redundant power supplies)																																																																																															
<b>Operating temperature</b>	0...+60°C/+32...+140°F	-40...+70°C/-40...+158°F	0...+60°C/+32...+140°F	-40...+70°C/-40...+158°F	0...+60°C/+32...+140°F	-40...+70°C/-40...+158°F																																																																																										
<b>Relative humidity</b>	1...95% non-condensing																																																																																															
<b>Degree of protection</b>	IP 30																																																																																															
<b>Dimensions</b>	W x H x D																																																																																															
	73 x 142.8 x 117.6 mm/2.87 x 5.62 x 4.57 in.																																																																																															
<b>Mounting</b>	On symmetrical DIN rail, 35 mm/1.38 in. wide																																																																																															
<b>Weight</b>	0.420 kg/0.925 lb	0.500 kg/1.102 lb		0.570 kg/1.256 lb	0.500 kg/1.102 lb	0.570 kg/1.256 lb																																																																																										
<b>Conforming to standards</b>	IEC/EN 61131-2, UL 61010-1, UL 61010-2-201, CAN/CSA C22.2 No. 61010-1, CAN/CSA C22.2 No. 61010-2-201, UL 121201 / CSA C22.2 No. 213 Class I Division 2, IEC/EN 60079-0, IEC/EN 60079-15, IACS E10, IEC 61850-3																																																																																															
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<b>Alarm relay</b>	Detected fault (temperature, ring redundancy, connection errors, external memory, power supply) (volt-free contact 1 A max. at 24 V ⎓)																																																																																															
<b>Reference</b>	<b>MCSESM083F23F1</b>	<b>MCSESM083F23F1H</b>	<b>MCSESM103F2CU1</b>	<b>MCSESM103F2CU1H</b>	<b>MCSESM103F2CS1</b>	<b>MCSESM103F2CS1H</b>																																																																																										
<b>Pages</b>	26																																																																																															

(1) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
 (2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).  
 (3) The optional reference Memory Backup adapter is available in Separate parts and accessories for switches on page 29.

# Industrial Ethernet Firewall

## Tofino Industrial Firewall, Industrial Firewall/Router

Device type		Tofino Industrial Firewall TX/TX	Industrial Firewall/Router TX/TX	Industrial Firewall/Router TX/MM
				
<b>Interfaces</b>	Copper cable ports	Number and type Shielded connectors Medium Total length of pair	2 x 10/100 BASE-TX ports for internal and external networks RJ45 type Shielded twisted pair, category CAT 5E 100 m/328 ft	1 x 10/100BASE-TX port for internal network
	Fiber optic ports	Number and type Connectors Medium	–	1 x 100BASE-FX port for external network Duplex SC Multimode fiber
	Length of fiber	50/125 µm	–	5,000 m/16,404 ft (2)
		62.2/125 µm	–	4,000 m/13,123 ft (3)
		9/125 µm	–	
	Attenuation analysis	50/125 µm fiber	–	8 dB
		62.2/125 µm fiber	–	11 dB
		9/125 µm	–	
	Configuration tools	PC-based software tool (Tofino Configurator) that is used to create configuration files for Tofino Firewall		V.24 connection; Ethernet Switch Configurator protocol via the application Ethernet Switch Configurator; Memory Backup Adapter; Graphical User Interface
	<b>Security capabilities</b>		Built-in security modules (Firewall, Event Logger, Modbus/TCP Enforcer, NetConnect), optional field upgradeable modules for adding the new LSM modules for other protocols ( OPC, EIP, DNP3, IEC104 and GOOSE) (4), Tofino Configurator for creating secure zones, DoS prevention and MAC address filtering for encryption protocol.	Built-in security modules (Firewall, Event Logger, NetConnect), role-based access control, syslog protocol support, IPSec and MAC address filtering for encryption protocol.
<b>Power supply</b>	Voltage	12...24 V = (9.6...32 V) SELV		
	Consumption	6.9 W		8.3 W
	Removable terminal block	6-pin (Redundant power supplies)		
<b>Operating temperature</b>		0° to 60° C/ 32° to 140° F		
<b>Relative humidity</b>		10 to 95% non-condensing		
<b>Degree of protection</b>		IP 20		
<b>Dimensions</b>		W x H x D 60 x 145 x 125 mm /2.36 x 5.71 x 4.92 in.		
<b>Mounting</b>		On symmetrical DIN rail, 35 mm/1.38 in. wide		
<b>Weight</b>		0.660 kg/1.455 lb	0.610 kg/1.345 lb	
<b>Conforming to standards</b>		IEC 60068-2-6, IEC 60068-2-27, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-9, EN 55022 class A/FCC 47 CFR Part 15 class A cUL 508:1988, CE (1), German Lloyd VI-7-3 Part 1 Ed. 2003, RoHS Directive, CSA C22.2 No 213 Class I Division 2, UL 1604 Class 1 Division 2, CSA C22.2 No 214, UL 508, EN/IEC 61131-2	EN 50121-4, EN 55022 (Class A), EN 60079-15, EN 60950-1, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-9, EN 61000-4-12, EN 61000-6-2, EN 61000-6-4, GL Guidelines VI-7-3 Part 1 Ed.2003 (EMC 1), FCC 47 CFR Part 15 (Class A), IEC 60068-2-6, IEC 60068-2-27, IEC 60825-1, IEC 61131-2, IEC/EN 61850-3, IEEE 802.1AB, IEEE 802.3-2002, IEEE 802.3ac, IEEE 1613, IEEE C37.90.1, IEEE C37.90.3, UL 508, 2011/65/EU (RoHS), 2004/108/EC (EMC), UL 508, CSA C22.2 No 213 Class I Division 2, CSA C22.2 No 214, UL 1604 Class 1 Division 2, EN/IEC 61131-2	
<b>LED indicators</b>		Power supply, link activity, detected fault, mode, save/load, reset		
<b>References</b>		<b>TCSEFEA23F3F22</b>	<b>TCSEFEC23F3F21</b>	<b>TCSEFEC23FCF21</b>
<b>Pages</b>		27		

(1) The Tofino Industrial Ethernet Firewalls TCSEFEA23F3F20 and TCSEFEA23F3F21 are also compliant with Germanischer Lloyd VI-7-3 Part 1 Ed. 2003 certification.  
 (2) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 2,000 m/6,561 ft).  
 (3) Length dependent on the attenuation analysis and attenuation of the fiber (typical value: 15,000 m/49,212 ft).  
 (4) These optional references of Loadable Security Modules (LSM) are available in Separate parts for Tofino industrial Ethernet firewall on page 27

Features		Unmanaged Switches			Managed Switches				
		Standard	Premium	IP67	Lite	Basic	Standard	Extended	PoE
Number of Ports (Copper, Fiber Optic, SFP)		5..8	5..9	5	4	8..9	4..24	8..10	8
Max. Number of Copper Ports		8	7	5	4	8 (6 (1))	20	8	8
Max. Number of Fiber Optic or SFP Ports		2	2			3	4	2	
Max. Transition rate		100Mbps	100Mbps	100Mbps	100Mbps	100Mbps	Up to 1000Mbps	100Mbps	1000Mbps
Operating Temperature		0..60°C	-40..70°C	0..60°C	0..60°C	0..60°C	0..60°C (-40..70°C (2))	0..60°C (-40..70°C (2))	0..60°C (-40..70°C (2))
IP Degree of Protection		IP30	IP40	IP67	IP30	IP20	IP30	IP30	IP30
Availability Hazardous Location		-	✓	-	-		✓	✓	✓
Redundant Power Supply Input		-	✓	-	-	✓	✓	✓	✓
Signal Contact		-	✓	-	-	✓	✓	✓	✓
Web interface	HTTP	-	-	-	-	-	✓	✓	✓
	HTTPS	-	-	-	✓	-	✓	✓	✓
Diagnostics	SNMP	-	-	-	✓	✓	✓	✓	✓
	Alarms	-	✓	-	✓	✓	✓	✓	✓
	LLDP	-	-	-	✓	✓	✓	✓	✓
	Port Mirroring	-	-	-		✓	✓	✓	✓
Cyber Security	Password	-	-	-	✓	✓	✓	✓	✓
	Access Control List (IP or MAC)	-	-	-	-	-	✓	✓	✓
	Denial-of-Service	-	-	-	-	-	✓	✓	✓
	Local Role-based Access Control	-	-	-	-	-	✓	✓	✓
Redundancy	RSTP	-	-	-	✓	✓	✓	✓	✓
	MRP	-	-	-	-	✓	✓	✓	✓
	HIPER-ring	-	-	-	-	✓	✓	✓	✓
	Link aggregation	-	-	-	-	-	✓	✓	✓
	Link backup	-	-	-	-	-	✓	✓	✓
	Redundant network/ring coupling	-	-	-	-	-	✓	✓	✓
Switching/Performance	Dual RSTP ring coupling	-	-	-	-	-	-	✓	-
	QoS	-	✓		✓	✓	✓	✓	✓
	Multicast IGMP/GMRP	-	-	-	-	✓	✓	✓	✓
	Flow Control	-	-	-	-	-	✓	✓	✓
Filtering	VLAN	-	-	-	-	-	✓	✓	✓
	Broadcast Limiting	-	-	-	-	-	✓	✓	✓
Time	SNTP	-	-	-	-	✓	✓	✓	✓
	PTP	-	-	-	-	-	✓	✓	✓
Advanced Function	IPv6	-	-	-	-	-	✓	✓	✓
	TSN	-	-	-	-	-	✓	✓	✓
	OPC UA	-	-	-	-	-	✓ (3)	✓ (3)	✓ (3)

(1) Max. 6 copper ports for fiber optic variants

(2) Only for harsh variants

(3) To be supported with the future software upgrade

Selection guide:

[page 4](#)





MCSESU053FN0



MCSESU053F1CU0



MCSESU083FN0



MCSESU083F2CU0  
MCSESU083F2CS0



TCSESPU053F1CU0  
TCSESPU053F1CS0



TCSESPU083FN0



TCSESPU093F2CU0  
TCSESPU093F2CS0



TCSESU051F0

### Standard unmanaged switches, 5~8 ports, twisted pair and fiber optic

References			
Description	Interfaces	Reference	Weight kg/ lb
Standard Unmanaged Switch 5TX	<ul style="list-style-type: none"> <li>5 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	MCSESU053FN0	0.125/ 0.275
Standard Unmanaged Switch 4TX/1FX-MM	<ul style="list-style-type: none"> <li>4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>1 x 100BASE-FX port (multimode fiber), duplex SC connector</li> </ul>	MCSESU053F1CU0	0.130/ 0.285
Standard Unmanaged Switch 8TX	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	MCSESU083FN0	0.150/ 0.331
Standard Unmanaged Switch 6TX/2FX-MM	<ul style="list-style-type: none"> <li>6 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX port (multimode fiber), duplex SC connector</li> </ul>	MCSESU083F2CU0	0.235/ 0.518
Standard Unmanaged Switch 6TX/2FX-SM	<ul style="list-style-type: none"> <li>6 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX port (single mode fiber), duplex SC connectors</li> </ul>	MCSESU083F2CS0	0.235/ 0.518

### Premium unmanaged switches, 5~9 ports, twisted pair and fiber optic

References			
Description	Interfaces	Reference	Weight kg/ lb
Premium Unmanaged Switch 4TX/1FX-MM	<ul style="list-style-type: none"> <li>4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>1 x 100BASE-FX port (multimode fiber), duplex SC connector</li> </ul>	TCSESPU053F1CU0	0.430/ 0.948
Premium Unmanaged Switch 4TX/1FX-SM	<ul style="list-style-type: none"> <li>4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>1 x 100BASE-FX port (singlemode fiber), duplex SC connector</li> </ul>	TCSESPU053F1CS0	0.430/ 0.948
Premium Unmanaged Switch 8TX	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	TCSESPU083FN0	0.440/ 0.970
Premium Unmanaged Switch 7TX/2FX-MM	<ul style="list-style-type: none"> <li>7 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	TCSESPU093F2CU0	0.510/ 1.124
Premium Unmanaged Switch 7TX/2FX-SM	<ul style="list-style-type: none"> <li>7 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (singlemode fiber), duplex SC connector</li> </ul>	TCSESPU093F2CS0	0.510/ 1.124

### IP67 unmanaged switch, 5 ports, twisted pair

References			
Description	Interfaces	Reference	Weight kg/ lb
IP67 Unmanaged Switch 5TX	<ul style="list-style-type: none"> <li>5 x 10/100BASE-TX ports (copper cable), shielded M12 type D connectors, IP67</li> </ul>	TCSESU051F0	0.210/ 0.463



TCSESL043F23F0



TCSESB083F23F0



TCSESB083F2CU0



TCSESB093F2CU0



MCSESM043F23F0



MCSESM053F1CU0  
MCSESM053F1CS0



MCSESM063F2CU0  
MCSESM063F2CS0

### Lite managed switch, 4 ports, twisted pair

#### References

Description	Interfaces	Reference	Weight kg/ lb
Lite Managed Switch 4TX	<ul style="list-style-type: none"> <li>4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">TCSESL043F23F0</a>	0.103/ 0.227

### Basic managed switches, 8 and 9 ports, twisted pair and fiber optic

#### References

Description	Interfaces	Reference	Weight kg/ lb
Basic Managed Switch 8TX	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">TCSESB083F23F0</a>	0.400/ 0.882

Basic Managed Switch 6TX/2FX-MM	<ul style="list-style-type: none"> <li>6 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	<a href="#">TCSESB083F2CU0</a>	0.410/ 0.904
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Basic Managed Switch 6TX/3FX-MM	<ul style="list-style-type: none"> <li>6 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>3 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	<a href="#">TCSESB093F2CU0</a>	0.410/ 0.904
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### Standard managed switches, 4~6 ports, twisted pair and fiber optic

#### References

Description	Interfaces	Reference	Weight kg/ lb
Standard Managed Switch 4TX	<ul style="list-style-type: none"> <li>4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">MCSESM043F23F0</a>	0.380/ 0.837

Standard Managed Switch 4TX/1FX-MM	<ul style="list-style-type: none"> <li>4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>1 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM053F1CU0</a>	0.420/ 0.925
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Standard Managed Switch 4TX/1FX-SM	<ul style="list-style-type: none"> <li>4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>1 x 100BASE-FX ports single mode fiber, duplex SC connector</li> </ul>	<a href="#">MCSESM053F1CS0</a>	0.420/ 0.925
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Standard Managed Switch 4TX/2FX-MM	<ul style="list-style-type: none"> <li>4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM063F2CU0</a>	0.420/ 0.925
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Standard Managed Switch 4TX/2FX-SM	<ul style="list-style-type: none"> <li>4 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (single mode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM063F2CS0</a>	0.420/ 0.925
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MCSESM083F23F0  
MCSESM083F23F0H



MCSESM093F1CU0  
MCSESM093F1CS0



MCSESM103F2CU0  
MCSESM103F2CU0H  
MCSESM103F2CS0  
MCSESM103F2CS0H



MCSESM123F2LG0



MCSESM123F23G0

### Standard managed switches, 8~10 ports, twisted pair and fiber optic

#### References

Description	Interfaces	Reference	Weight kg/ lb
<b>Standard Managed Switch 8TX</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">MCSESM083F23F0</a>	0.420/ 0.925
<b>Standard Managed Switch 8TX - Harsh</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">MCSESM083F23F0H</a>	0.500/ 1.102
<b>Standard Managed Switch 8TX/1FX-MM</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>1 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM093F1CU0</a>	0.500/ 1.102
<b>Standard Managed Switch 8TX/1FX-SM</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>1 x 100BASE-FX ports (single mode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM093F1CS0</a>	0.500/ 1.102
<b>Standard Managed Switch 8TX/2FX-MM</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors, 1 Gb</li> <li>2 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM103F2CU0</a>	0.500/ 1.102
<b>Standard Managed Switch 8TX/2FX-MM - Harsh</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM103F2CU0H</a>	0.570/ 1.256
<b>Standard Managed Switch 8TX/2FX-SM</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (single mode fiber), duplex SC connectors</li> </ul>	<a href="#">MCSESM103F2CS0</a>	0.500/ 1.102
<b>Standard Managed Switch 8TX/2FX-SM - Harsh</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (single mode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM103F2CS0H</a>	0.570/ 1.256

### Standard managed switches, 12 ports (including up to 4 Gigabit ports), twisted pair and SFP

#### References

Description	Interfaces	Reference	Weight kg/ lb
<b>Standard Managed Switch 8TX/4GE-SFP</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>4 x 100/1000BASE-SFP (fiber optic or copper cable)</li> </ul>	<a href="#">MCSESM123F2LG0</a>	0.570/ 1.256
<b>Standard Managed Switch 8TX/4GE-TX</b>	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>4 x 10/100/1000BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">MCSESM123F23G0</a>	0.700/ 1.543



MCSESM163F23F0



MCSESM203F4LG0



MCSESM243F4LG0



MCSESP083F23G0  
MCSESP083F23G0T



MCSESM083F23F1  
MCSESM083F23F1H



MCSESM103F2CU1  
MCSESM103F2CU1H  
MCSESM103F2CS1  
MCSESM103F2CS1H

### Standard managed switches, 16~24 ports (including up to 4 Gigabit ports), twisted pair and SFP

#### References

Description	Interfaces	Reference	Weight kg/ lb
Standard Managed Switch 16TX	<ul style="list-style-type: none"> <li>16 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">MCSESM163F23F0</a>	0.880/ 1.940
Standard Managed Switch 16TX/4GE-SFP	<ul style="list-style-type: none"> <li>16 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>4 x 100/1000BASE-SFP (fiber optic or copper cable)</li> </ul>	<a href="#">MCSESM203F4LG0</a>	0.95/ 2.0943
Standard Managed Switch 20TX/4GE-SFP	<ul style="list-style-type: none"> <li>20 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>4 x 100/1000BASE-SFP (fiber optic or copper cable)</li> </ul>	<a href="#">MCSESM243F4LG0</a>	1.05/ 2.315

### PoE managed switches, 8 Gigabit ports, twisted pair with PoE

#### References

Description	Interfaces	Reference	Weight kg/ lb
PoE Managed Switch 8GE-TX	<ul style="list-style-type: none"> <li>8 x 10/100/1000BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">MCSESP083F23G0</a>	1.400/ 3.086
PoE Managed Switch 8GE-TX - Harsh	<ul style="list-style-type: none"> <li>8 x 10/100/1000BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">MCSESP083F23G0T</a>	1.400/ 3.086

### Extended managed switches, 8 ports, twisted pair and fiber optic

#### References

Description	Interfaces	Reference	Weight kg/ lb
Extended Managed Switch 8TX	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">MCSESM083F23F1</a>	0.420/ 0.925
Extended Managed Switch 8TX - Harsh	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> </ul>	<a href="#">MCSESM083F23F1H</a>	0.500/ 1.102
Extended Managed Switch 8TX/2FX-MM	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM103F2CU1</a>	0.500/ 1.102
Extended Managed Switch 8TX/2FX-MM - Harsh	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (multimode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM103F2CU1H</a>	0.570/ 1.256
Extended Managed Switch 8TX/2FX-SM	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (single-mode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM103F2CS1</a>	0.500/ 1.102
Extended Managed Switch 8TX/2FX-SM - Harsh	<ul style="list-style-type: none"> <li>8 x 10/100BASE-TX ports (copper cable), RJ45 shielded connectors</li> <li>2 x 100BASE-FX ports (single-mode fiber), duplex SC connector</li> </ul>	<a href="#">MCSESM103F2CS1H</a>	0.570/ 1.256



TCSEFEA23F3F22  
TCSEFEC23F3F21  
TCSEFEC23FCF21

### Industrial Ethernet firewalls

#### References

Description	Interfaces	Reference	Weight kg/ lb
Tofino industrial Ethernet firewall TX/TX with multiple LSM available for deep Packet inspection	<ul style="list-style-type: none"> <li>2 x 10/100BASE-TX ports (copper cable) for internal and external network connections</li> </ul>	<a href="#">TCSEFEA23F3F22</a>	0.660/ 1.455
Industrial Firewall/Router TX/TX	<ul style="list-style-type: none"> <li>2 x 10/100BASE-TX ports (copper cable) for internal and external network connections</li> </ul>	<a href="#">TCSEFEC23F3F21</a>	0.610/ 1.345
Industrial Firewall/Router TX/MM	<ul style="list-style-type: none"> <li>1 x 10/100BASE-TX port for internal network</li> <li>1 x 10/100BASE-TX port for external network</li> </ul>	<a href="#">TCSEFEC23FCF21</a>	0.610/ 1.345

### Optional Loadable Security Modules (LSM) for Tofino industrial Ethernet firewall (1)

#### References

Description	Reference
Tofino OPC-LSM	<a href="#">TCSEFM0000</a>
Tofino EIP-LSM	<a href="#">TCSEFM0001</a>
Tofino DNP3 – LSM	<a href="#">TCSEFM0002</a>
IEC104 – LSM	<a href="#">TCSEFM0003</a>
GOOSE – LSM	<a href="#">TCSEFM0004</a>

(1) Modbus/TCP Enforcer is natively integrated in the Tofino firewall software.

### Shielded copper connection cables

Ethernet shielded connection cables are available in two versions to meet the various current standards and approvals:

#### ■ EIA/TIA 568 shielded twisted pair cables for C€ market

These cables conform to:

- EIA/TIA-568 standard, category CAT 5E
- IEC 11801/EN 50173-1 standard, class D

Their fire resistance conforms to:

- NF C32-070 standard, class C2
- IEC 322/1 standards
- Low Smoke Zero Halogen (LSZH)

#### ■ EIA/TIA 568 shielded twisted pair cables for UL market

These cables are:

- CEC type FT-1
- NEC type CM

A range of fully shielded preassembled cables has been specially designed for use in harsh industrial environments. These cables combine a category 5E shielded cable and RJ45 connectors reinforced with a metal profile.

#### EIA/TIA 568 shielded twisted pair cables for C€ market

Description	Connectors	Type	Length m/ft	Reference	Weight kg/ lb
<b>Straight-through copper cables</b> C€ compatible	2 x RJ45 connectors For connection to terminal equipment (DTE)	Standard	2/6.56	<a href="#">490NTW00002</a>	—
			5/16.40	<a href="#">490NTW00005</a>	—
			12/39.37	<a href="#">490NTW00012</a>	—
			40/131	<a href="#">490NTW00040</a>	—
			80/262	<a href="#">490NTW00080</a>	—
		Rugged	1/3.28	<a href="#">TCSECE3M3M1S4</a>	—
			2/6.56	<a href="#">TCSECE3M3M2S4</a>	—
			3/9.84	<a href="#">TCSECE3M3M3S4</a>	—
			5/16.40	<a href="#">TCSECE3M3M5S4</a>	—
			10/32.81	<a href="#">TCSECE3M3M10S4</a>	—
<b>Crossover copper cables</b> C€ compatible	2 x RJ45 connectors For connection between hubs, switches, and transceivers	Standard	5/16.40	<a href="#">490NTC00005</a>	—
			15/49.21	<a href="#">490NTC00015</a>	—
			40/131	<a href="#">490NTC00040</a>	—



TCSEC●3M3M●●S4

#### EIA/TIA 568 shielded twisted pair cables for UL market

Description	Connectors	Type	Length m/ft	Reference	Weight kg/ lb
<b>Straight-through copper cables</b> UL compatible	2 x RJ45 connectors For connection to terminal equipment (DTE)	Standard	2/6.56	<a href="#">490NTW00002U</a>	—
			5/16.40	<a href="#">490NTW00005U</a>	—
			12/39.37	<a href="#">490NTW00012U</a>	—
			40/131	<a href="#">490NTW00040U</a>	—
		Rugged	1/3.28	<a href="#">TCSECU3M3M1S4</a>	—
			2/6.56	<a href="#">TCSECU3M3M2S4</a>	—
			3/9.84	<a href="#">TCSECU3M3M3S4</a>	—
			5/16.40	<a href="#">TCSECU3M3M5S4</a>	—
10/32.81	<a href="#">TCSECU3M3M10S4</a>	—			

#### Do it Yourself copper cable and connectors

The Do it Yourself offer consists of 4 references for connectors (M12 and RJ45) and 3 cable references (300 m/984 ft coil), enabling Ethernet 10/100 Mbps networks to be cabled in the field.

The maximum length of cables created in this way is 80 m/262 ft.

They are quick to assemble using a knife and simple wire cutters (no special tools are required).

Description	Characteristics	Length m/ft	Reference	Weight kg/ lb
<b>Ethernet copper cable</b> 4 shielded twisted pairs AWG 24	Conforms to the CE standards	300/984	<a href="#">TCSECE300R2</a>	—
	Conforms to the UL standards	300/984	<a href="#">TCSECU300R2</a>	—
<b>M12 connector</b>	Conforms to IEC 60176-2-101	—	<a href="#">TCSEK1MDRS</a>	—
<b>RJ45 connector</b>	Conforms to EIA/TIA-568-D	—	<a href="#">TCSEK3MDS</a>	—
<b>RJ45 rugged connectors</b>	Set of 2 connectors	—	<a href="#">TCSEK3MR2</a>	—
	Set of 10 connectors	—	<a href="#">TCSEK3MR10</a>	—



MCSEAAF1LFT00













Separate parts and accessories for switches				
Description	Fiber/TX	Example for max. distance	Reference	Weight kg/lb
Fiber optic module SFP 1000BASE-SX/LC, Multimode	Multimode 50/125 µm Multimode 62.5/125 µm	0.55 km/0.34 mi 0.275 km/0.17 mi	TCSEAAF1LFU00	0.040/ 0.088
Fiber optic module SFP 1000BASE-LX/LC, Single-mode/Multimode	Single-mode 9/125 µm Multimode 50/125 µm Multimode 62.5/125 µm	20 km/12.43 mi 0.55 km/0.34 mi 0.55 km/0.34 mi	TCSEAAF1LFS00	0.040/ 0.088
Fiber optic module SFP 1000BASE-LH/LC, Single-mode	Single-mode 9/125 µm	80 km/49.71 mi	TCSEAAF1LFH00	0.040/ 0.088
Fiber optic module SFP 100BASE-SX/LC, Multimode	Multimode 50/125 µm Multimode 62.5/125 µm	5 km/3.11 mi 4 km/2.49 mi	MCSEAAF1LFU00	0.040/ 0.088
Fiber optic module SFP 100BASE-LX/LC, Single-mode	Single mode 9/125 µm	25 km/15.53 mi	MCSEAAF1LFS00	0.040/ 0.088
Copper module SFP 100BASE-TX/RJ45	100BASE-TX/RJ45	100 m	MCSEAAF1LFT00	0.040/ 0.088
Copper module SFP 1000BASE-TX/RJ45	1000BASE-TX/RJ45	100 m	MCSEAAF1LFG00	0.040/ 0.088

Name	Use	Port	Reference	Weight kg/lb
Memory Backup Adapter for MCSESM/MCSESP switches	Connected on the front of the switch; used to: <ul style="list-style-type: none"> <li>- Save and retrieve the switch configuration</li> <li>- Update the internal software</li> </ul>	USB Type-C	MCSEAM0100	0.050/ 0.110

Connection components for IP 67 switch					
Description	Connectors	Length m/ft	Reference	Weight kg/lb	
Straight-through copper cables	1 x IP 67 4-way M12 connector and 1 x RJ45 connector	1/3.28	TCSECL1M3M1S2	–	
		3/9.84	TCSECL1M3M3S2	–	
		10/32.81	TCSECL1M3M10S2	–	
		25/82.02	TCSECL1M3M25S2	–	
	2 x IP 67 4-way M12 connectors	40/131	TCSECL1M3M40S2	–	
		1/3.28	TCSECL1M1M1S2	–	
		3/9.84	TCSECL1M1M3S2	–	
		10/32.81	TCSECL1M1M10S2	–	
Power supply cables	female M12 straight connectors	2/6.56	XZCP1164L2	–	
		5/16.40	XZCP1164L5	–	
	female M12 elbowed connectors	2.5/8.20	XZCP1264L2	–	
		5/16.40	XZCP1264L5	–	
	female M12 straight connectors	–	XZCC12FDM50B	–	
	female M12 elbowed connectors	–	XZCC12FCM50B	–	
	M12/RJ45 adapter	IP 67 4-way female M12 connector and female RJ45 connector	–	TCSEAAF11F13F00	–



TCSECL1M3M10S2

Approvals and Self-declarations	Standard Unmanaged Switch	Premium Unmanaged Switch	IP67 Unmanaged Switch	Lite Managed Switch	Basic Managed Switch	Standard Managed Switch	Extended Managed Switch
	MCSESU*	MCSEPU*	MCSESM*	TCSESL*	TCSESB*	MCSESM*/MCSESP*	MCSESM*1(H)
 CE	✓	✓	✓	✓	✓	✓	✓
 UL (cULus)	✓	✓	✓	✓	✓	✓	✓
 RCM	✓	✓	✓	✓	✓	✓	✓
 EAC	✓	✓	✓	✓	✓	✓	✓
 UKCA	✓	✓	✓	✓	✓	✓	✓
 UL121201 / CSA C22.2 No.213	-	✓	-	-	-	✓	✓
 ATEX	-	-	-	-	-	✓	✓
 UKEX	-	-	-	-	-	✓	✓
Merchant Navy	 DNV	-	✓	-	-	✓	✓
	 LR	-	-	-	-	-	✓
	 BV	-	-	-	-	-	✓
EtherNet/IP	-	-	-	-	-	✓	✓
 IEC 61850-3	-	-	-	-	-	✓	✓
GENELEC EN 50121-4	-	-	-	-	-	✓(1)	✓

(1) Only applicable for the variants less than or equal to 12 ports.



<b>#</b>			
490NTC00005	28	TCSECL1M3M10S2	29
490NTC00015	28	TCSECL1M3M1S2	29
490NTC00040	28	TCSECL1M3M25S2	29
490NTW00002	28	TCSECL1M3M3S2	29
490NTW00002U	28	TCSECL1M3M40S2	29
490NTW00005	28	TCSECU300R2	28
490NTW00005U	28	TCSECU3M3M10S4	28
490NTW00012	28	TCSECU3M3M1S4	28
490NTW00012U	28	TCSECU3M3M2S4	28
490NTW00040	28	TCSECU3M3M3S4	28
490NTW00080	28	TCSECU3M3M5S4	28
		TCSEFEA23F3F22	27
<b>M</b>		TCSEFEC23F3F21	27
MCSEAAF1LFG00	29	TCSEFEC23FCF21	27
MCSEAAF1LFS00	29	TCSEFM0000	27
MCSEAAF1LFT00	29	TCSEFM0001	27
MCSEAAF1LFU00	29	TCSEFM0002	27
MCSEAM0100	29	TCSEFM0003	27
MCSESM043F23F0	24	TCSEFM0004	27
MCSESM053F1CS0	24	TCSEK1MDRS	28
MCSESM053F1CU0	24	TCSEK3MDS	28
MCSESM063F2CS0	24	TCSEK3MR10	28
MCSESM063F2CU0	24	TCSEK3MR2	28
MCSESM083F23F0	25	TCSESB083F23F0	24
MCSESM083F23F0H	25	TCSESB083F2CU0	24
MCSESM083F23F1	26	TCSESB093F2CU0	24
MCSESM083F23F1H	26	TCSESL043F23F0	24
MCSESM093F1CS0	25	TCSESPU053F1CS0	23
MCSESM093F1CU0	25	TCSESPU053F1CU0	23
MCSESM103F2CS0	25	TCSESPU083FN0	23
MCSESM103F2CS0H	25	TCSESPU093F2CS0	23
MCSESM103F2CS1	26	TCSESPU093F2CU0	23
MCSESM103F2CS1H	26	TCSESU051F0	23
MCSESM103F2CU0	25	<b>X</b>	
MCSESM103F2CU0H	25	XZCC12FCM50B	29
MCSESM103F2CU1	26	XZCC12FDM50B	29
MCSESM103F2CU1H	26	XZCP1164L2	29
MCSESM123F23G0	25	XZCP1164L5	29
MCSESM123F2LG0	25	XZCP1264L2	29
MCSESM163F23F0	26	XZCP1264L5	29
MCSESM203F4LG0	26		
MCSESM243F4LG0	26		
MCSESP083F23G0	26		
MCSESP083F23G0T	26		
MCSESU053F1CU0	23		
MCSESU053FN0	23		
MCSESU083F2CS0	23		
MCSESU083F2CU0	23		
MCSESU083FN0	23		
<b>T</b>			
TCSEAAF11F13F00	29		
TCSEAAF1LFH00	29		
TCSEAAF1LFS00	29		
TCSEAAF1LFU00	29		
TCSECE300R2	28		
TCSECE3M3M10S4	28		
TCSECE3M3M1S4	28		
TCSECE3M3M2S4	28		
TCSECE3M3M3S4	28		
TCSECE3M3M5S4	28		
TCSECL1M1M10S2	29		
TCSECL1M1M1S2	29		
TCSECL1M1M3S2	29		

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DIA6ED2140903EN  
August 2022 - V4.0