











Industrial Networking Solution



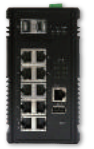




	EN50155 16x PoE Managed with TTDP Supported		EN50155 16x PoE Managed	
				
Model Names	KY-RT1604X-M12	KY-RT1600G-M12	KY-MT1604X-M12	KY-MT1600G-M12
Number of Ports				
Max. Ports	20	16	20	16
10 Gigabit Ethernet Ports	4	-	4	-
Gigabit Ethernet Ports	16	16	16	16
Fast Ethernet Ports	-	-	-	-
PoE Ports (802.3at)	16 (188W)	16 (188W)	16 (188W)	16 (188W)
Power Input	24VDC, 48VDC, 72-110VDC	24VDC, 48VDC, 72-110VDC	24VDC, 48VDC, 72-110VDC	24VDC, 48VDC, 72-110VDC
Mechanical Construction				
Enclosure	SECC/Aluminum	SECC/Aluminum	SECC/Aluminum	SECC/Aluminum
Protection Class	IP54	IP54	IP54	IP54
Dimensions(mm)	220 x 176 x 100	220 x 176 x 100	220 x 176 x 100	220 x 176 x 100
Weight(kg)	3.0 kg	3.0 kg	3.0 kg	3.0 kg
Mounting	Wall, Din-Rail (Optional)	Wall, Din-Rail (Optional)	Wall, Din-Rail (Optional)	Wall, Din-Rail (Optional)
Switch Properties				
Jumbo Frame Support	12000 bytes	12000 bytes	12000 bytes	12000 bytes
MAC Table Size	16K	16K	16K	16K
Packet Buffer Size	12Mbits	12Mbits	12Mbits	12Mbits
Power Consumption (Sys)	15W	15W	15W	15W
Software Features				
Network Redundancy	RSTP, MSTP, G.8032 ERPSv2, Port Trunking with LACP			
Security	802.1X, RADIUS, TACACS+, SSL, SSH, NSA Endpoint Security Certified with "Service Control"			
Management	IPv4, IPv6, Web, Telnet, Serial Console, CLI, SNMP v1/v2c/v3, uPnP			
Diagnostics	RMON, SNMP Inform/Trap, Syslog, SMTP, Port Mirroring, LLDP			
Configuration	DHCP Server/Client, Relay Option 82, TFTP			
Filter	802.1Q VLAN, Q-in-Q, IGMP Snooping v1/v2/v3, IGMP Querier, Independent Vlan Learning			
Time Sync.	NTP, IEEE1588v2*			
QoS	CoS, DSCP, WRR/SPQ Queuing, Storm Protection			
PoE	Powering Status, PoE Monitoring, Scheduling, PD Alive Check, PoE Priority			
Industrial Profiles	Ethernet/IP / ProfiNet / ModbusTCP / TTDP		Ethernet / IP / ProfiNet / ModbusTCP	
L3 Routing	Static Routing / NAT		-	
Safety & Certification	CE / FCC / EN50155 / UL (Optional)			
Non-PoE Model	KY-RS1604X-M12	KY-RS1600G-M12	KY-MS1604X-M12	KY-MSG1600-M12








	EN50155 8x PoE Managed with 2x 1G uplink		EN50155 8x PoE Unmanaged		
					
Model Names	KY-MT1000G-M12	KY-MT0802C-M12	KY-ET1000G-M12	KY-ET0802C-M12	KY-ET0804C-M12
Number of Ports					
Max. Ports	10	10	10	10	12
10 Gigabit Ethernet Ports	-	-	-	-	-
Gigabit Ethernet Ports	10	2	10	2	4
Fast Ethernet Ports	-	8	-	8	8
PoE Ports (802.3at)	8 (188W)	8 (188W)	8 (188W)	8 (188W)	8 (188W)
Power Input	24VDC, 48VDC, 72-110VDC	24VDC, 48VDC, 72-110VDC	24VDC, 48VDC, 72-110VDC	24VDC, 48VDC, 72-110VDC	24VDC, 48VDC, 72-110VDC
Mechanical Construction					
Enclosure	SECC	SECC	SECC	SECC	SECC
Protection Class	IP54	IP54	IP54	IP54	IP54
Dimensions(mm)	143 x 209 x 77	143 x 209 x 77	143 x 209 x 77	143 x 209 x 77	165 x 99 x 50
Weight(kg)	1.90 kg	1.20 kg	1.20 kg	1.20 kg	1.20 kg
Mounting	Wall, Din-Rail(Optional)	Wall, Din-Rail(Optional)	Wall, Din-Rail(Optional)	Wall, Din-Rail(Optional)	Wall, Din-Rail(Optional)
Switch Properties					
Jumbo Frame Support	12000bytes	12000bytes	12000bytes	12000bytes	9600bytes
MAC Table Size	16K	16K	16K	16K	8K
Packet Buffer Size	12Mbits	12Mbits	12Mbits	12Mbits	4Mbits
Power Consumption (Sys)	15W	15W	15W	15W	15W
Software Features					
L2 Management	◎	◎	-	-	-
Safety & Certification	CE / FCC / EN50155 / UL (Optional)				
Non-PoE Model	KY-MSG1000-M12	KY-MS0802-M12	KY-ESG1000-M12	KY-ESC0802-M12	KY-ESC0804-M12



EN50121-4 Track-Side Application					16x PoE Din-Rail
					
Model Names	KY-CP1604X	KY-CS0812X	KY-CP1002X	KY-CP0804X	KY-CP1604XB
Number of Ports					
Max. Ports	20	20	12	12	20
Gigabit Ethernet Ports	16	8	10	8	16
100/1000Tx SFP Ports	-	8	-	-	-
1G/10G SFP+ Ports	4	4	2	4	4
PoE Ports (802.3at)	8	-	8	8	16
Power Input	48-57VDC	12-48VDC	48-57VDC	48-57VDC	48-57VDC
Mechanical Construction					
Enclosure	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Protection Class	IP30	IP30	IP30	IP30	IP30
Dimensions(mm)	91 x 145 x 118	91 x 145 x 118	72 x 145 x 118	72 x 145 x 118	91 x 145 x 118
Weight(kg)	1.03 kg	1.38 kg	0.88 kg	0.90 kg	1.4 kg
Mounting	DIN-Rail, Wall	DIN-Rail, Wall	DIN-Rail, Wall	DIN-Rail, Wall	DIN-Rail, Wall
Switch Properties					
Jumbo Frame Support	12000 bytes	12000 bytes	12000 bytes	12000 bytes	12000 bytes
MAC Table Size	16K	16K	16K	16K	16K
Packet Buffer Size	12Mbits	12Mbits	12Mbits	12Mbits	12Mbits
Power Consumption (Sys)	25W	20W	18W	25W	20W
Software Features					
Network Redundancy	RSTP, MSTP, G.8032 ERPSv2, Port Trunking with LACP				
Security	802.1X, RADIUS, TACACS+, SSL, SSH, NSA Endpoint Security Certified with "Service Control"				
Management	IPv4, IPv6, Web, Telnet, Serial Console, CLI, SNMP v1/v2c/v3, uPnP				
Diagnostics	RMON, SNMP Inform/Trap, Syslog, SMTP, Port Mirroring, LLDP				
Configuration	DHCP Server/Client, Relay Option 82, TFTP				
Filter	802.1Q VLAN, Q-in-Q, IGMP Snooping v1/v2/v3, IGMP Querier, Independent Vlan Learning				
Time Sync.	NTP, IEEE1588v2*				
QoS	CoS, DSCP, WRR/SPQ Queuing, Storm Protection				
PoE	Powering Status, PoE Monitoring, Scheduling, PD Alive Check, PoE Priority				
Industrial Profiles	Ethernet/IP / ProfiNet / ModbusTCP				
L3 Switching	Static Routing / OSPFv2 / RIPv1/v2				
Safety & Certification	CE / FCC / EN50121-4 / UL(Optional)				
PoE Boost Model	-	-	KY-CTX1002	KY-CTX0804	-
Non-PoE Model	KY-CSX1604 (non-PoE)	KY-RSG1600-M12	KY-CSX1002	KY-CSX0804	-
1G Uplink Model	KY-CPG1604 / KY-CSG1604	-	KY-CPG1002 / KY-CTG1002 KY-CSG1002	KY-CPG0804 / KY-CTG0804 KY-CSG0804	KY-CP1604GB
Layer 2 Model	KY-MPX1604/ KY-MPG1604 KY-MSX1604/ KY-MSG1604	-	KY-MPX1002/KY-MPG1002 KY-MTX1002/KY-MTG1002 KY-MSX1002/ KY-MSG1002	KY-MPX0804/KY-MPG0804 KY-MTX0804/KY-MTG0804 KY-MSX0804 /KY-MSG0804	KY-MP1604XB KY-MP-1604GB



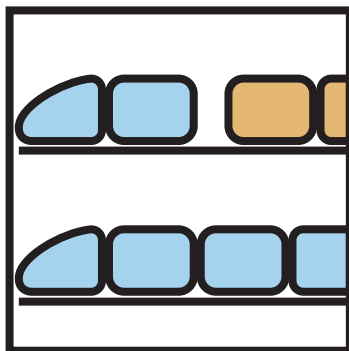
Power Substation Compliance		24x PoE with 10G Uplink	Unmanaged M12	Unmanaged PoE
				
KY-MS2404GS-8C	KY-MS2800GFS-8C	KY-MP2404X	KY-ES0500L-M12	KY-EP0802G
28	28	28	5	10
-	-	-	5	-
16	-	24	-	8
-	20	-	-	2
4	-	4	-	-
-	-	24	-	-
8	8	-	-	-
90~264VAC, 88~370VDC, 18~36VDC, 36~75VDC	90~264VAC, 88~370VDC, 18~36VDC, 36~75VDC	90~264VAC, 48~57VDC	12-48VDC	48-57VDC
Aluminum / Steel met IP30	Aluminum / Steel met IP30	Aluminum / Steel met IP40	Plastic IP67	Aluminum IP30
440 x 44 x 331	440 x 44 x 331	440 x 44 x 420	33 x 217 x 43	50 x 120 x 100
4.80 kg	4.80 kg	6.00 kg	0.30 kg	0.67 kg
Rack	Rack	Rack	Wall	DIN-Rail,Wall
12000 bytes	12000 bytes	12000 bytes	-	9600 bytes
16K	16K	16K	1K	8K
12Mbits	12Mbits	12Mbits	448Kbits	4Mbits
30W	30W	22W	2W	15W
☉	☉	☉	-	-
CE / FCC / IEC61850-3 / IEEE1613 / UL (Optional)		CE / FCC	CE / FCC / EN 61000-6-4&2	
KY-MSG2404-8C (non-61850)	KY-MS2404XF-8C (fiber switch with 10G Uplink)	KY-MSX2404 (non-PoE) KY-MPG2404 (1G Uplink)	-	KY-ESG0802 (non-PoE)
KY-CS2404GS-8C	-	KY-CPX2404 / KY-CSX2404	-	-

DYMEC

Product Features

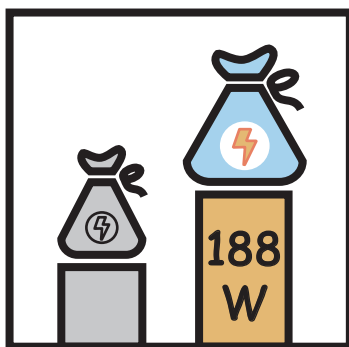
TTDP in Ethernet Train Backbone

Train Topology Discovery Protocol identifies the order of the onboard network routers. TTDP provides an automatic network configuration of IP address in Layer 3 Ethernet switches and saves substantial maintenance hassles. The operator only needs to identify the head train carriage and the other carriages will be placed in order in the Train Control Network.



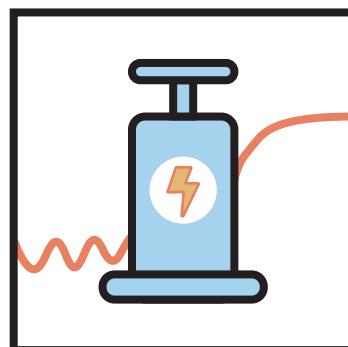
TRDP for Support of Dynamic Request

Train Real Time Data Protocol (TRDP) is part of the Train Communication Network (TCN) and standardized in IEC 61375-2-3. TRDP is a frame-oriented and connection-less protocol and works as exchanging TCN process data (PD) and TCN message data (MD) over Ethernet Train Backbone (ETB) via UDP and optionally via TCP. TRDP extends the dynamic of entire train topology and provides a transparent way to communicate with other devices on the train.



Higher PoE Budget

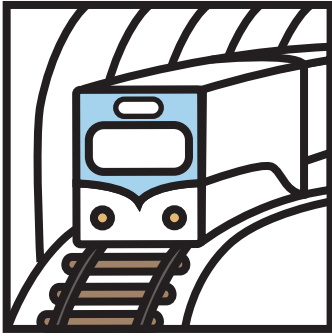
Current powered devices (PD) need more and more watts for operation. The PoE switches for EN50155 usually support 100 watts power budget, however, in DYMEC's design, we can provide up to 188 watts! With a higher power budget, the switch can provide more power and serve more PDs.



Efficient PoE Booster

PoE Booster technology is the best solution for your applications when there's no 48~57VDC power available for standard PoE power input. With the wide range input 12~57VDC Boost PoE Ethernet switch, additional cost of voltage converters is saved and users have various choice of different devices.

EN50155 for Railway Applications



For the railway applications, the users need a rugged Ethernet switch to against the demanding environments such as wide operating temperature, moist surroundings, and shock and vibration due to the trains' passing. DYMEC designs and implements a series of EN50155 compliant and long-time reliability Ethernet switches for railway and rolling stock Network applications.

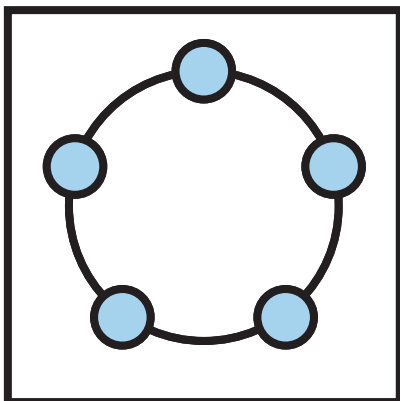


EN50121-4 for Trackside

EN50121-4 is an EMC standard for railway signaling and telecom equipment. Compliance with EN50121-4 is a requirement for lots of transportation-related applications. DYMEC also has a series of EN50121-4 switches for rail-side applications such as installing on the platform or near the rail track.

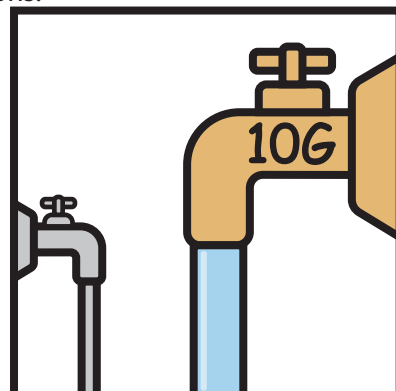
EN45545-2 Fire Proof

EN45545-2 defines the different hazard levels (HL1, HL2, and HL3) to specify requirements for fire behavior of materials and products used in trains. With compliance of EN45545-2, we ensure that our switches will be unaffected during combustion.



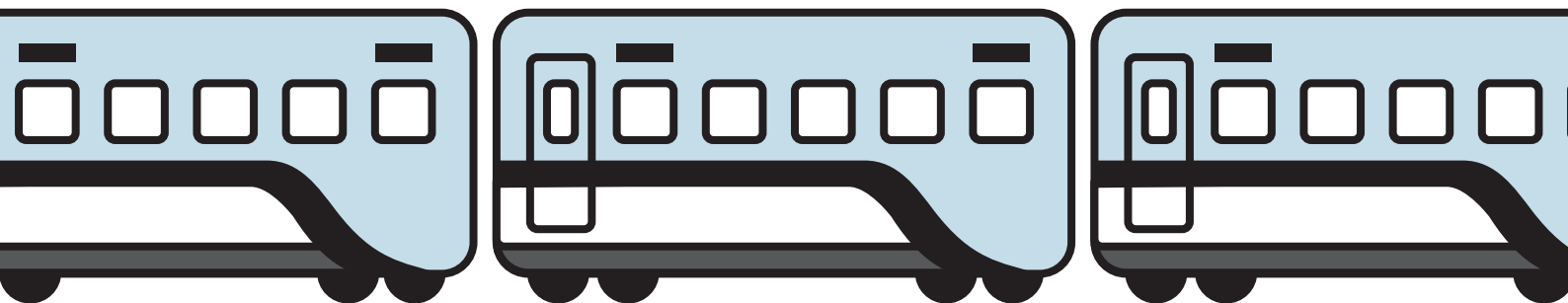
Support 10G

The 10G uplink is better equipped on the full gigabit Ethernet switch to provide fast transmission speed between devices and makes entire Network more efficient. For more and more data transmission in the train system, DYMEC also implements 10G up links EN50155 Ethernet switch for railway applications.



ERPS / MRP Ring Protection

Ethernet Ring Protection Switching (ERPS) is defined in ITU-T standard G.8032. DYMEC products support both v1 and v2 with multiple rings topology. Media Redundancy Protocol (MRP) is a data network protocol standardized as IEC 62439-2. These ring protocols provide sub-50ms redundancy protection and recovery switching for Ethernet traffic that provide critical networks with high reliability.



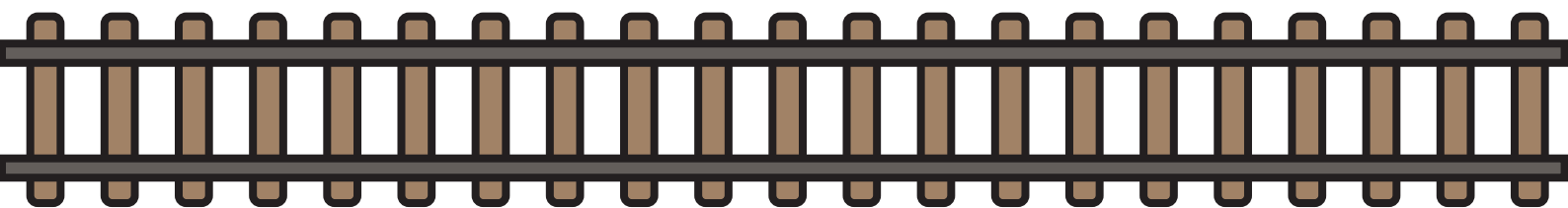
In-House hardware and software engineering teams specialized in product development for mission-critical network applications.

All products are produced and tested in certificated labs and manufacturing facilities, in order to meet the standards in ruggedness and reliability.

We serve our customers with quality products, flexibility, time-to-market, and customized production service.

Trains, Light Rail, People Movers, Subways, Factory Automation, Building Automation, Robotics and Artificial Intelligence Products

Call your DYMEC Representative for details and discount opportunities!



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