

Industrial SFP Transceiver

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- » Fully Tested with CTC Industrial Grade Product for Guaranteed Compatibility and Performance. The Best Performance Can be Guaranteed Even in Mission-Critical Applications Eye Safety Compliant with Class 1 Laser Product Standard IEC825-1 CE, FCC Class B Certification



CTC Union's Industrial SFP Transceivers are highly reliable, for serial optical data communications applications specified for single mode fiber operation at 1.25G/155M bps. They operate with +3.3V power supplies and are intended for single mode or multi-mode fiber, operating at a nominal wavelength of 1310nm/1550nm/850nm. Each SFP Transceiver consists of a transmitter optical subassembly (TOSA), a receiver optical subassembly (ROSA) and an electrical subassembly. CTC Union's industrial SFP transceivers ensure your networks operate with maximum reliability, performance, and flexibility.

Features

- Single 3.3V power supply
- Duplex or Simplex LC receptacle connector
- Hot Pluggable
- Lower power dissipation
- All 10G SFP+ compliant to IEEE 802.3ae 10GBase-X Ethernet over fiber
- All Gigabit SFP compliant to IEEE 802.3z 1000Base-X and IEEE 802.3ab 100/1000Base-T
- All Fast Ethernet SFP Compliant to IEEE 802.3u 100Base-FX
- Industrial standard small form pluggable (SFP) package
- Compliant with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP)
- RoHS compliant

10Gbps 10GBase-X Fiber SFP+



Model Name	Cable Type	Typical Distance	Wavelength (nm)	TX (dBm) (Min~Max)	RX Sensitivity (dBm)	Power Budget (dB)	Saturation (dBm)	Power Consumption	DDMI	Operating Temperature
ISFP-M9000-85-D	MM	300m (OM3)	850	-6.5 ~ -1	-9.9	3.4	-1	1W	V	-10 ~ 70°C
ISFP-M9000-85-DE	MM	300m (OM3)	850	-6.5 ~ -1	-9.9	3.4	-1	1W	V	-40 ~ 85°C
ISFP-S9010-31-D	SM	10km	1310	-8 ~ 0.5	-14.4	6.4	0.5	1W	V	-10 ~ 70°C
ISFP-S9010-31-DE	SM	10km	1310	-8 ~ 0.5	-14.4	6.4	0.5	1W	V	-40 ~ 85°C
ISFP-S9040-31-D	SM	40km	1310	0.5 ~ 5	-15.5	16	0.5	1W	V	-10 ~ 70°C
ISFP-S9040-31-DE	SM	40km	1310	0.5 ~ 5	-15.5	16	0.5	1W	V	-40 ~ 85°C
ISFP-S9040-55-D	SM	40km	1550	-2 ~ 4	-15.8	13.8	0.5	1W	V	-10 ~ 70°C
ISFP-S9040-55-DE	SM	40km	1550	-2 ~ 4	-15.8	13.8	0.5	1W	V	-40 ~ 85°C

10Gbps 10GBase-T UTP SFP



Model Name	Cable Type	Typical Distance	Operating Temperature	Power Consumption
ISFP-T9T00-00-E	UTP Cat 6A	30m	-40 ~ 85°C	3.1W

1.25Gbps 1000Base-X Fiber SFP



Gigabit Duplex LC



Gigabit BiDi LC

Model Name	Cable Type	Typical Distance	Wavelength (nm)	TX (dBm) (Min~Max)	RX Sensitivity (dBm)	Power Budget (dB)	Saturation (dBm)	Power Consumption	DDMI	Operating Temperature
ISFP-M7000-85-D	MM	550m	850	-9.5 ~ -4	-17	7.5	-3	1W	V	-10 ~ 70°C
ISFP-M7000-85-DE	MM	550m	850	-9.5 ~ -4	-17	7.5	-3	1W	V	-40 ~ 85°C
ISFP-M7002-31-D	MM	2km	1310	-9 ~ -1	-19	10	-1	1W	V	-10 ~ 70°C
ISFP-M7002-31-DE	MM	2km	1310	-9 ~ -1	-19	10	-1	1W	V	-40 ~ 85°C
ISFP-S7020-31-D	SM	20km	1310	-8 ~ -2	-23	15	-1	1W	V	-10 ~ 70°C
ISFP-S7020-31-DE	SM	20km	1310	-8 ~ -2	-23	15	-1	1W	V	-40 ~ 85°C
ISFP-S7040-31-D	SM	40km	1310	-2 ~ 3	-23	21	-3	1W	V	-10 ~ 70°C
ISFP-S7040-31-DE	SM	40km	1310	-2 ~ 3	-23	21	-3	1W	V	-40 ~ 85°C
ISFP-S7020-WA-D	SM (BiDi)	20km	T1310 / R1550	-8 ~ -2	-23	15	-2	1W	V	-10 ~ 70°C
ISFP-S7020-WB-D	SM (BiDi)	20km	T1550 / R1310	-8 ~ -2	-23	15	-2	1W	V	-10 ~ 70°C
ISFP-S7020-WA-DE	SM (BiDi)	20km	T1310 / R1550	-8 ~ -2	-23	15	-2	1W	V	-40 ~ 85°C
ISFP-S7020-WB-DE	SM (BiDi)	20km	T1550 / R1310	-8 ~ -2	-23	15	-2	1W	V	-40 ~ 85°C
ISFP-S7040-WA-D	SM (BiDi)	40km	T1310 / R1550	-3 ~ 2	-23	20	-3	1W	V	-10 ~ 70°C
ISFP-S7040-WB-D	SM (BiDi)	40km	T1550 / R1310	-3 ~ 2	-23	20	-3	1W	V	-10 ~ 70°C
ISFP-S7040-WA-DE	SM (BiDi)	40km	T1310 / R1550	-3 ~ 2	-23	20	-3	1W	V	-40 ~ 85°C
ISFP-S7040-WB-DE	SM (BiDi)	40km	T1550 / R1310	-3 ~ 2	-23	20	-3	1W	V	-40 ~ 85°C
ISFP-S7060-WA-D	SM (BiDi)	60km	T1310 / R1550	0 ~ 5	-24	24	-1	1W	V	-10 ~ 70°C
ISFP-S7060-WB-D	SM (BiDi)	60km	T1550 / R1310	0 ~ 5	-24	24	-1	1W	V	-10 ~ 70°C
ISFP-S7060-WA-DE	SM (BiDi)	60km	T1310 / R1550	0 ~ 5	-24	24	-1	1W	V	-40 ~ 85°C
ISFP-S7060-WB-DE	SM (BiDi)	60km	T1550 / R1310	0 ~ 5	-24	24	-1	1W	V	-40 ~ 85°C

1.25Gbps 1000Base-X Fiber SC Type SFP



SC-WA



SC-WB

Model Name	Cable Type	Typical Distance	Wavelength (nm)	TX (dBm) (Min~Max)	RX Sensitivity (dBm)	Power Budget (dB)	Saturation (dBm)	Power Consumption	DDMI	Operating Temperature
ISFP-S7020-WA-SC-DE	SM (BiDi)	20km	T1310 / R1550	-8 ~ -2	-23	15	-2	1W	V	-40 ~ 85°C
ISFP-S7020-WB-SC-DE	SM (BiDi)	20km	T1550 / R1310	-8 ~ -2	-23	15	-2	1W	V	-40 ~ 85°C

1.25Gbps 100/1000Base-T UTP SFP



Model Name	Cable Type	Typical Distance	Power Consumption	Operating Temperature
ISFP-T7T00-00	UTP Cat 5e	100m	1.1W	-10 ~ 70°C
ISFP-T7T00-00-E	UTP Cat 5e	100m	1.1W	-40 ~ 85°C

155Mbps 100Base-FX Fiber SFP



Duplex LC



BiDi LC

Model Name	Cable Type	Typical Distance	Wavelength (nm)	TX (dBm) (Min~Max)	RX Sensitivity (dBm)	Power Budget (dB)	Saturation (dBm)	Power Consumption	DDMI	Operating Temperature
ISFP-M5002-31-D	MM	2km	1310	-20 ~ -14	-32	12	-8	1W	V	-10 ~ 70°C
ISFP-M5002-31-DE	MM	2km	1310	-20 ~ -14	-32	12	-8	1W	V	-40 ~ 85°C
ISFP-S5030-31-D	SM	30km	1310	-15 ~ -8	-34	19	-5	1W	V	-10 ~ 70°C
ISFP-S5030-31-DE	SM	30km	1310	-15 ~ -8	-34	19	-5	1W	V	-40 ~ 85°C
ISFP-S5050-31-D	SM	50km	1310	-5 ~ 0	-35	30	-5	1W	V	-10 ~ 70°C
ISFP-S5050-31-DE	SM	50km	1310	-5 ~ 0	-35	30	-5	1W	V	-40 ~ 85°C
ISFP-S5020-WA-D	SM (BiDi)	20km	T1310 / R1550	-14 ~ -8	-32	18	-3	1W	V	-10 ~ 70°C
ISFP-S5020-WB-D	SM (BiDi)	20km	T1550 / R1310	-14 ~ -8	-32	18	-3	1W	V	-10 ~ 70°C
ISFP-S5020-WA-DE	SM (BiDi)	20km	T1310 / R1550	-14 ~ -8	-32	18	-3	1W	V	-40 ~ 85°C
ISFP-S5020-WB-DE	SM (BiDi)	20km	T1550 / R1310	-14 ~ -8	-32	18	-3	1W	V	-40 ~ 85°C

Power Supplies

NDR-480-48
DR-120-24

NDR-240-48
MDR-40-24

NDR-120-24
MDR-40-48

NDR-120-48
MDR-20-24



UL62368-1



UL60950-1



UL508



Having reliable and stable power for your industrial grade switches or converters is the best way to improve reliability and keep any down time to a minimum. CTC Union's safety certified AC to DC power supplies that are 100% compatible with all of our industrial grade switches and converters.

Features

- The series of industrial grade power supply have been fully tested with our industrial product for guaranteed compatibility and performance
- Universal AC input voltage range
- Protections: Short circuit / Overload / Over voltage/Over temperature
- Cooling by free air convection
- UL508, TUV, CB, CE safety approved
- Heavy industry grade EMS EN61000-6-2 approved

Specifications

Model Name		NDR-480-48	NDR-240-48	NDR-120-24 & NDR-120-48
Output	Dc Voltage	48V	48V	24V / 48V
	Rated Current	10A	5A	5A / 2.5A
	Current Range	0~5A	0~5A	0~5A / 0~2.5A
	Rated Power	480W	240W	120W
	Output Voltage Adj. Range	48~55VDC	48~55VDC	24~28V / 48~55V
Input	Voltage Range	90 ~ 264VAC / 127 ~ 370VDC	90 ~ 264VAC / 127 ~ 370VDC	90~264VAC / 127~370VDC
	Frequency Range	47 ~ 63Hz	47 ~ 63Hz	47 ~ 63Hz
	Efficiency (Typ.)	92.5%	90%	89%
Protection	Overload	105 ~ 130% rated output power	105 ~ 130% rated output power	105 ~ 130% rated output power
		Protection type: Constant current limiting, unit will shut down after 3 sec, re-power on to recover	Protection type: Constant current limiting, recovers automatically after fault condition is removed	Protection type: Constant current limiting, recovers automatically after fault condition is removed
	Over Voltage	56 ~ 65V	56 ~ 65V	29 ~ 33V / 56~65V
		Protection type: Shut down o/p voltage, re-power on to recover	Protection type: Shut down o/p voltage, re-power on to recover	Protection type: Shut down o/p voltage, re-power on to recover
	Over Temperature	Shut down o/p voltage, recovers automatically after temperature goes down	Shut down o/p voltage, recovers automatically after temperature goes down	Shut down o/p voltage, re-power on to recover

Model Name		NDR-480-48	NDR-240-48	NDR-120-24 & NDR-120-48
Indicator	LED	DC OK	DC OK	DC OK
Housing	Dimension(D x W x H)	128.5 x 85.5 x 125.2mm	113.5 x 63 x 125.2mm	113.5 x 40 x 125.2mm
	Installation Mounting	DIN Rail	DIN Rail	DIN Rail
Environment	Working Temp	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C
	Working Humidity	20 ~ 95% RH non-condensing	20 ~ 95% RH non-condensing	20 ~ 95% RH non-condensing
	Storage Temp., Humidity	-40 ~ 85°C , 10 ~ 95% RH	-40 ~ 85°C , 10 ~ 95% RH	-40 ~ 85°C , 10 ~ 95% RH
	Vibration	Compliance to IEC60068-2-6	Compliance to IEC60068-2-6	Compliance to IEC60068-2-6
Safety & EMC	Safety Standards	UI508, TUV BS EN/EN62368-1	UI508, TUV BS EN/EN62368-1	UI508, TUV BS EN/EN62368-1
	Withstand Voltage	I/P-O/P:3KVAC, I/P-FG:2KVAC, O/P-FG: 0.5KVAC	I/P-O/P:3KVAC, I/P-FG:2KVAC, O/P-FG: 0.5KVAC	I/P-O/P:3KVAC, I/P-FG:2KVAC, O/P-FG: 0.5KVAC
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG >100M Ohm /500VD@25°C/ 70% RH	I/P-O/P, I/P-FG, O/P-FG >100M Ohm /500VD@25°C/ 70% RH	I/P-O/P, I/P-FG, O/P-FG >100M Ohm /500VD@25°C/ 70% RH
	EMC Emission	Compliance to EN55032 (CISPR32), EN61204-3 Class B, EN61000-3-2, -3	Compliance to EN55032 (CISPR32), EN61204-3 Class B, EN61000-3-2, -3	Compliance to EN55032 (CISPR32) Class B, EN61000-3-2,-3
	EMC Immunity	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55035, EN61000-6-2, EN61204-3, heavy industry level, criteria A	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55035, EN61000-6-2, EN61204-3, heavy industry level, criteria A	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55035, EN61000-6-2, (EN50082-2), heavy industry level, criteria A
Others	PFC	PF>0.98/115VAC, PF>0.94/230VAC at full load	Built in Active PFC	
	MTBF	146.8K Hours MIL-HDBK-217F (25°C)	230.2K Hours MIL-HDBK-217F (25°C)	453.3K Hours MIL-HDBK-217F (25°C)
	Waranty	3 Years	3 Years	3 Years

Model Name		DR-120-24	MDR-40-24 & MDR-40-48	MDR-20-24
Output	Dc Voltage	24V	24V / 48V	24V
	Rated Current	5A	1.7A / 0.83A	1A
	Current Range	0~5A	0~1.5A / 0~0.83A	0~1A
	Rated Power	120W	39.8W	24W
	Output Voltage Adj. Range	24~28VDC	24~30V / 48~56VDC	21.6~26.4VDC
Input	Voltage Range	85 ~ 132VAC / 176~264VAC	85 ~ 264VAC / 120 ~ 370VDC	85 ~ 264VAC / 120 ~ 370VDC
	Frequency Range	47 ~ 63Hz	47 ~ 63Hz	47 ~ 63Hz
	Efficiency (Typ.)	84%	88%	84%
Protection	Overload	105 ~ 150% rated output power	105 ~ 150% rated output power	105 ~ 160% rated output power
		Protection type : Constant current limiting, recovers automatically after fault condition is removed	Protection type : Constant current limiting, recovers automatically after fault condition is removed	Protection type : Constant current limiting, recovers automatically after fault condition is removed
	Over Voltage	29 ~ 33V Protection type : Shut down o/p voltage, re-power on to recover	31.2 ~ 36V / 57.6~64.8V Protection type : Shut off o/p voltage, re-power on to recover	27.6~32.4V Protection type : Shut down o/p voltage, re-power on to recover
Alarm Relay	DC OK Relay		DC OK Relay will Close In Normal, Relay contact rating(max.): 30V/1A resistive	DC OK Relay will Close In Normal, Relay contact rating(max.): 30V/1A resistive
Indicator	LED		DC OK	DC OK
Housing	Dimension(D x W x H)	100 x 65.5 x 125.2mm	100 x 40 x 90mm	100 x 22.5 x 90mm
	Installation Mounting	DIN Rail	DIN Rail	DIN Rail

Model Name		DR-120-24	MDR-40-24 & MDR-40-48	MDR-20-24
Environment	Working Temp	-10 ~ 60°C	-20 ~ 70°C	-20 ~ 70°C
	Working Humidity	20 ~ 90% RH non-condensing	20 ~ 90% RH non-condensing	20 ~ 90% RH non-condensing
	Storage Temp., Humidity	-20 ~ +85 , 10 ~ 95% RH	-20 ~ 85°C , 10 ~ 95% RH	-40 ~ 85°C , 10 ~ 95% RH
	Vibration	Compliance to IEC60068-2-6	Compliance to IEC60068-2-6	Compliance to IEC60068-2-6
Safety & EMC	Safety Standards	UL508, UL60950-1, TUV EN60950-1 approved	UL508, UL62368-1, TUV EN62368-1, Class I, Div. 2 Group A, B, C, D Hazardous Locations T4	UL508, TUV EN62368-1
	Withstand Voltage	I/P-O/P:3KVAC, I/P-FG:1.5KVAC, O/P-FG:0.5KVAC	I/P-O/P:3KVAC, I/P-FG:2KVAC, O/P-FG:0.5KVAC	I/P-O/P:3KVAC, I/P-FG:2KVAC, O/P-FG:0.5KVAC
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH	I/P-O/P, I/P-FG, O/P-FG >100M Ohm /500VD@25°C/ 70% RH	I/P-O/P, I/P-FG, O/P-FG >100M Ohm /500VD@25°C/ 70% RH
	EMC Emission	Compliance to EN55011, EN55022 (CISPR22) Class B, EN61000-3-2, -3	Compliance to EN55032 (CISPR32), EN61204-3 Class B, EN61000-3-2, -3	Compliance to EN55011, EN55032 (CISPR32), EN61204-3 Class B, EN61000-3-2, -3
	EMC Immunity	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61000-6-2 (EN50082-2), heavy industry level, criteria A	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55035, EN61000-6-2 (EN50082-2), heavy industry level, criteria A	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55035, EN61000-6-2, EN61204-3, heavy industry level, criteria A
Others	PFC			
	MTBF	136.8Khrs min MIL-HDBK-217F (25°C)	301.7K hrs MIL-HDBK-217F (25°C)	236.9K Hours MIL-HDBK-217F (25°C)
	Waranty	3 Years	3 Years	3 Years

Ordering Information

Model Name	Input Voltage Range	Output Voltage	Output Voltage Adj. Range	Output Power	Operating Temperature
NDR-480-48	90 ~ 264VAC / 127 ~ 370VDC	48VDC	48~55VDC	480W	-20 ~ 70°C
NDR-240-48	90 ~ 264VAC / 127 ~ 370VDC	48VDC	48~55VDC	240W	-20 ~ 70°C
NDR-120-24	90 ~ 264VAC / 127 ~ 370VDC	24VDC	24~28VDC	120W	-20 ~ 70°C
NDR-120-48	90 ~ 264VAC / 127 ~ 370VDC	48VDC	48~55VDC	120W	-20 ~ 70°C
DR-120-24	88 ~ 132VAC / 176 ~ 264VAC	24VDC	24~28VDC	120W	-10 ~ 60°C
MDR-40-24	85 ~ 264VAC / 120 ~ 370VDC	24VDC	24~30VDC	40W	-20 ~ 70°C
MDR-40-48	85 ~ 264VAC / 120 ~ 370VDC	48VDC	48~56VDC	40W	-20 ~ 70°C
MDR-20-24	85 ~ 264VAC / 120 ~ 370VDC	24VDC	21.6~26.4VDC	24W	-20 ~ 70°C



BUK1-RJ & BUK1-M12

Auto Backup Kit

- ◀ Auto Backup Kit for RJ45 Type RS232 Managed Switch
- ▶ Auto Backup Kit for M12 Type RS232 Managed Switch

- » RS232 RJ45 Type Console Connection (BUK1-RJ)
- » RS232 M12 Type Console Connection (BUK1-M12)
- » Chargeable, Charge by USB
- » Plug & Play Operation
- » Supports CTC Managed Switch for Auto Backup and Restore Configuration



The automatic backup configuration kit - BUK1 series is designed to save, download and upload the setup configurations of CTCU managed Ethernet switches series through the RS-232 console port. Easily back up or restore the Ethernet switch's system parameters and configuration by simply pressing a button on the BUK1. It is a greatly simplified design that enhances network deployment and maintenance processes, thereby reducing system downtime and costs.

Features

- Push button for start to upload/download configuration
- DIP SW for upload/download configuration selection

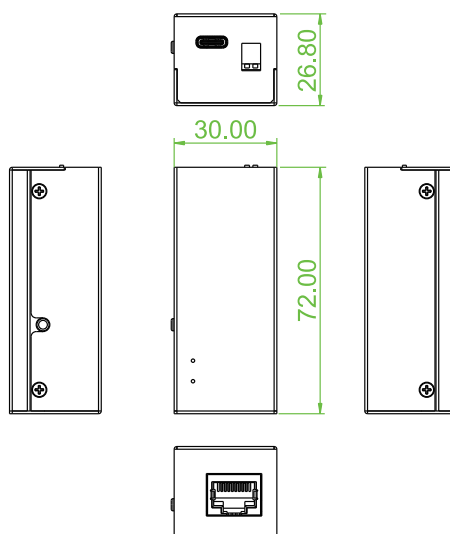
Specifications

DIP SW	DIP 1	OFF: Download Configuration ON : Upload Configuration
	DIP 2	Reserve
Push Button	For Power On/Off, or start to process	
	Push long time for power on or power off (Toggle type switch)	
	Push short time for start to upload/download configuration	
Connector	1x USB Type C	Connect to PC USB for charge to battery in the device and manage configuration file Connect to RS232 Managed Switch by cable
	1x RJ45 RS232	With RJ45-to-R45 (Pin to Pin) cable for RJ45 type managed switch (BUK1-RJ) With RJ45-to-M12 cable for M12 managed switch (BUK1-M12)
LED	Power	ON: Power Good (Green) Blank: Power in Charged (Green) Blank : Battery Low (Red)
		ON: Ready (Green) Blank: Process (Green)
		ON: Fail (Red) Blank: Device Not Match (Red)
	Status	
Power Supply	Charged battery on board Charged by USB	
Operating Temperature	-10 ~ 60°C	
Operating Humidity	5% to 95% (Non-condensing)	
Storage Temperature	-40 ~ 85°C	
Housing	Rugged Metal, IP30 Protection and Fanless	
Dimensions	30 x 72 x 26.8mm (D x W x H)	
Weight	TBD	
MTBF	TBD (MIL-HDBK-217)	

Certification

EMC/EMS	CE (EN55032, EN55035)
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A, CE
EMS (Electromagnetic Susceptibility) Protection Level	EN61000-4-2 (ESD) Level 3, Criteria B
	EN61000-4-3 (RS) Level 3, Criteria A
	EN61000-4-4 (Burst) Level 3, Criteria A
	EN61000-4-5 (Surge) Level 3, Criteria B
	EN61000-4-6 (CS) Level 3, Criteria A
	EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A

Dimensions



Ordering Information

Model Name	RS232 port		USB Type C	Push Button	DIP SW	Power	Certification	Operating Temperature
	RJ45	Cable		Power / Start	Upload/ Download	Charge by USB	CE & FCC	
BUK1-RJ	1	RJ45 to RJ45	1	1	1	Chargeable	V	-10 ~ 60°C
BUK1-M12	1	RJ45 to M12	1	1	1	Chargeable	V	-10 ~ 60°C

■ Package List

BUK1-RJ

- 1x BUK1 device
- 1x USB Type C to USB type A cable
- 1x RJ45-to-RJ45 pin-to-pin Cable 20cm

BUK1-M12

- 1x BUK1 device
- 1x USB Type C to USB type A cable
- 1x RJ45-to-M12 Cable 20cm