

### 600 Watts

- Single and Dual Outputs
- Up to 900 W Peak Power on Single Output Versions
- Power Good, Remote On/Off and Remote Sense
- Connector Options
- Forced-cooled
- U-Channel & End-Fan Versions Fit 1U Applications
- 3 Year Warranty



The SMH600 series provide up to 600 W in a low profile (1.6") chassis mount format. Single outputs are available from 3.3 – 60 VDC and there are three dual output models offering combinations from 5V to 24 VDC. The full power rating is available from 90 – 264 VAC input in ambient temperatures up to 50 °C providing power solutions for global use without the need for de-rating. All models comply with level B for both conducted and radiated emissions.

#### Dimensions:

- SMH:**  
8.00 x 5.00 x 1.60" (203.0 x 127.0 x 40.64 mm)
- SMH-EF:**  
9.10 x 5.00 x 1.60" (231.1 x 127.0 x 40.64 mm)
- SMH-TF:**  
8.00 x 5.00 x 2.20" (203.0 x 127.0 x 55.8 mm)

### Models & Ratings

Output	Output 1 <sup>(3)</sup>		Output 2		Model Number <sup>(2)</sup>
	Voltage	Current	Voltage	Current	
330 W	3.3 VDC	100.00 A			SMH600PS03
500 W	5.0 VDC	100.00 A			SMH600PS05
600 W	12.0 VDC	50.00 A			SMH600PS12
600 W	15.0 VDC	40.00 A			SMH600PS15
600 W	18.0 VDC	33.33 A			SMH600PS18
600 W	24.0 VDC	25.00 A			SMH600PS24
600 W	36.0 VDC	16.60 A			SMH600PS36
600 W	48.0 VDC	12.50 A			SMH600PS48
600 W	54.0 VDC	11.10 A			SMH600PS54
600 W	60.0 VDC	10.00 A			SMH600PS60
500 W	+5.0 VDC	50.00 A	+12.0 V	33.33 A	SMH600PD0512
500 W	+5.0 VDC	50.00 A	+24.0 V	16.67 A	SMH600PD0524
600 W	+12.0 VDC	33.33 A	+24.0 V	16.67 A	SMH600PD1224

#### Notes

1. Add suffix '-EF' to model number for end fan type, '-TF' for top fan type.
2. Standard models have screw terminals.  
For optional Molex input connector add suffix '-F-', for optional Molex output connector add suffix '-G' and for optional Molex input and output connectors add suffix '-FG'. Molex output terminals are not available on 3V3 and 5V single output versions or 0512 and 0524 dual output versions. For optional IEC320-C14 inlet on end fan types add suffix '-K'
3. Output peak power of 900 W for 500 μs is available on single output models.

### Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Range	90		264	VAC	
Signals					Power Good
Efficiency		90 / 89		%	Single output / Dual output at 230 V and full load
Operating Temperature	0		+70	°C	Derate at 2.5%/°C from +50 °C to +70 °C
Weight		3.53 (1.6)		lb (kg)	End fan '-EF' version
EMC	EN55022 Level B Conducted & Radiated, EN61000-4, EN61000-3				
Safety Approvals	EN60950-1, UL60950-1, CSA22.2 No.60950-1				

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	90		264	VAC	
Input Frequency	47		63	Hz	
Input Current		6		A	115 VAC (3.0 A at 230 VAC)
Inrush Current		70		A	230 VAC (35 A at 115 VAC)
Power Factor		>0.9			EN61000-3-2 class A
Earth Leakage Current		<1.0		mA	264 VAC
Input Protection	T10.0 A/250V fuse				

### Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3.3		60	VDC	See Models and Ratings table
Output Voltage Trim		±5		%	V1 (V2 of dual output models will track by same % of adjustment)
Initial Set Accuracy		±1		%	
Minimum Load	1 / 10			%	Single / Dual (for regulation)
Start Up Delay			2.0	s	115 VAC
Start Up Rise Time		40		ms	PD1224 model typically 50 ms
Hold Up Time	10	13		ms	115 VAC
Drift			±0.5	%	After 20 min warm up
Line Regulation			±0.5	%	
Load Regulation		±1 / ±3 / ±5		%	Single / Dual V1 / Dual V2 outputs
Over/Undershoot		1.5	5	%	
Transient Response			±5	%	Deviation, recovery to within 1% in 500 µs for a 50% load change
Ripple & Noise			1	% pk-pk	Measured at 20 MHz BW and 10 µF electrolytic and 0.1 µF ceramic at terminals
Overvoltage Protection			130	%	V1 recycle AC input to reset
Overload Protection	110		140	%	
Short Circuit Protection - V1					Trip and restart, auto recovery
Remote On/Off	Applying short circuit between Remote On/Off pin and signal return turns output off.				
Remote Sense	Compensates for 0.5 V max. voltage drop on single output models only.				

### General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		90 / 89		%	Single output / Dual output at 230 V and full load
Isolation: Input to Output Input to Ground Output to Ground			3000	VAC	
			1500	VAC	
			250	VDC	
Switching Frequency		60 / 28		kHz	PFC / PWM
Power Density	9.37			W/in <sup>3</sup>	For U Channel Versions
Signals					Power Good
Mean Time Between Failure	115			kHrs	MIL-HDBK-217F at 25 °C GB
Weight		3.53 (1.6)		lb (kg)	End fan '-EF' version

### Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	0		+70	°C	Derate at 2.5%/°C from +50 °C to +70 °C
Storage Temperature	-20		+85	°C	
Cooling					Forced-cooled. -EF and -EF versions have inbuilt two speed fan. Speed increases when output exceeds 2 A approx
Operating Altitude			3000	m	
Vibration	5		50	Hz	Acceleration 7.35 ms <sup>-2</sup> on 3 axes

### EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55022	Level B	
Radiated	EN55022	Level B	
Harmonic Current	EN61000-3-2	Class A	Class C for loads ≥70%
Voltage Flicker	EN61000-3-3		

### EMC: Immunity

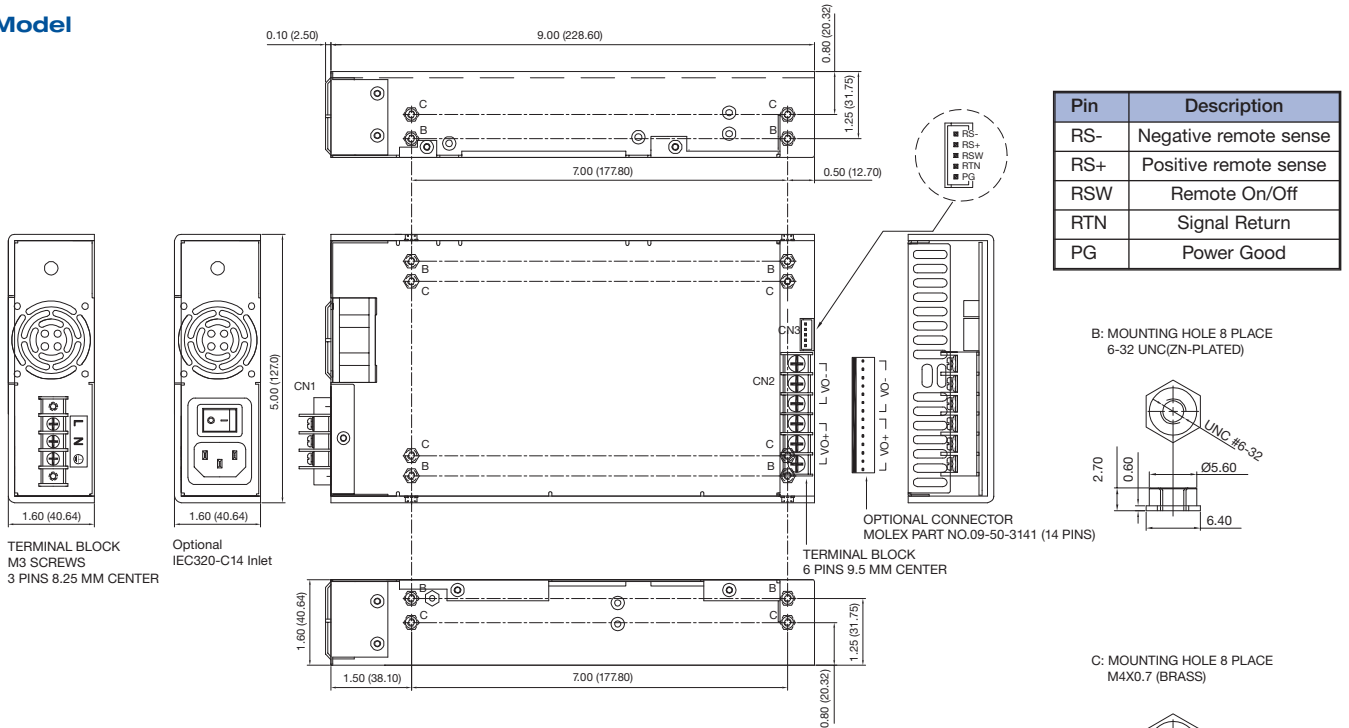
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD	EN61000-4-2	Level 3	A	
Radiated	EN61000-4-3	Level 2	A	
EFT	EN61000-4-4	Level 2	A	
Surges	EN61000-4-5	Installation class 3	A	
Conducted	EN61000-4-6	Level 2	A	
Dips and Interruptions	EN61000-4-11	DIP: 30% 10 ms DIP: 60% 100 ms INT: 100% 5000 ms	A A/B B	Highline (<420 W) / Lowline

### Safety Approvals

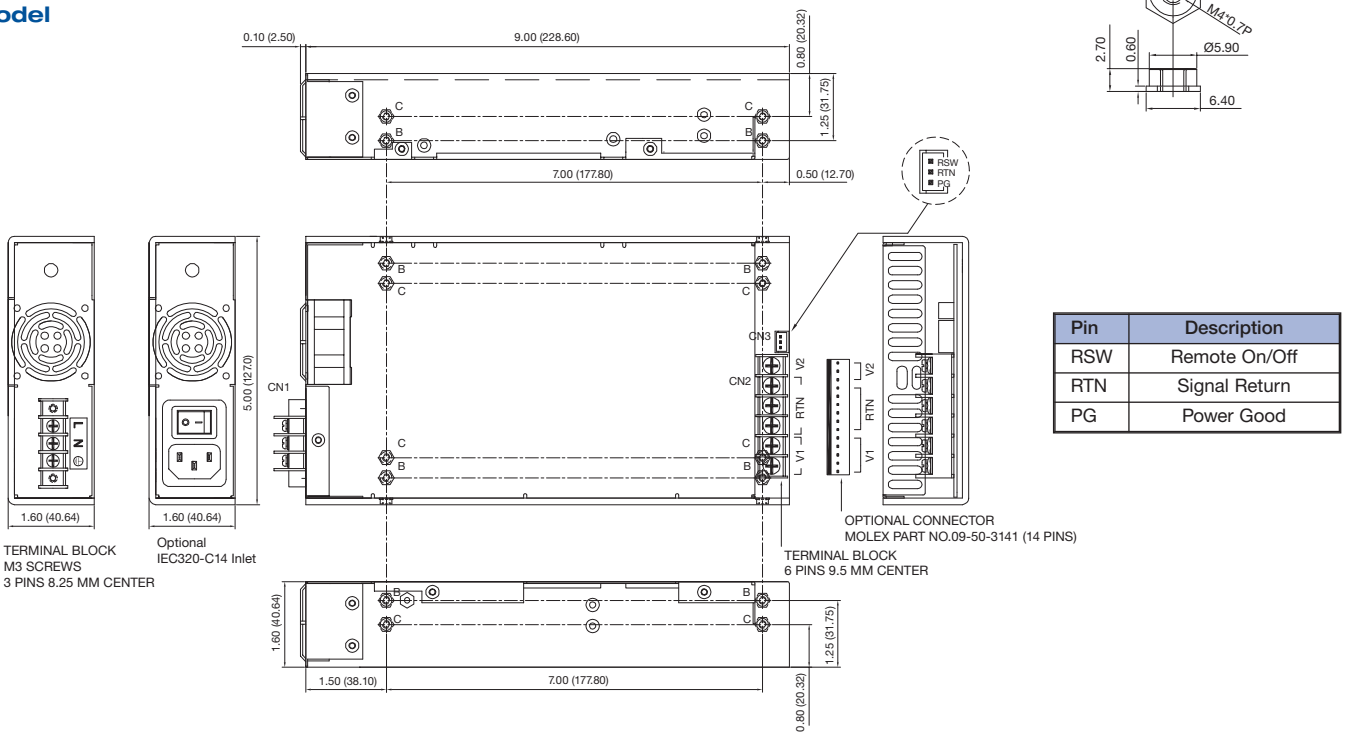
Safety Agency	Safety Standard	Notes & Conditions
UL	UL60950-1 (2007), CSA 22.2 No.60950-1-1:08	
CSA	C22.2 No.60950-1	
TUV	EN60950-1	

### Mechanical Details - End Fan (-EF)

#### Single Model



#### Dual Model



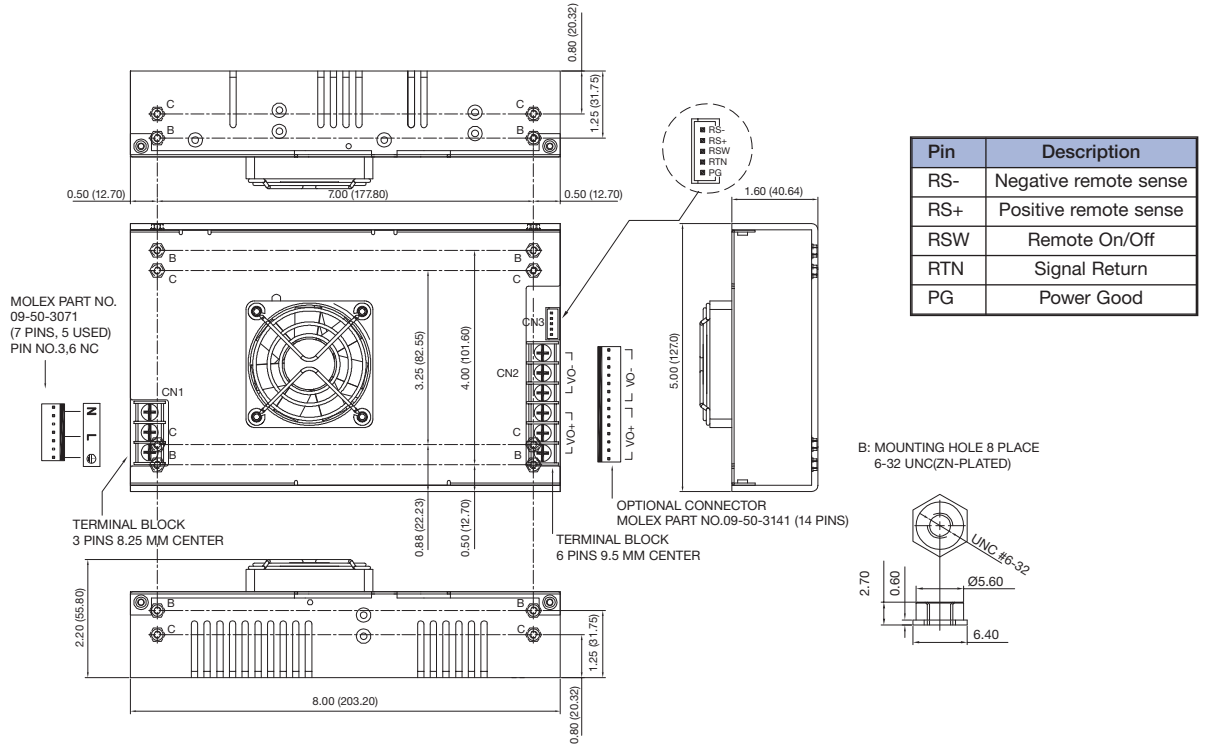
#### Notes

1. All dimensions in inches (mm).
2. Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)

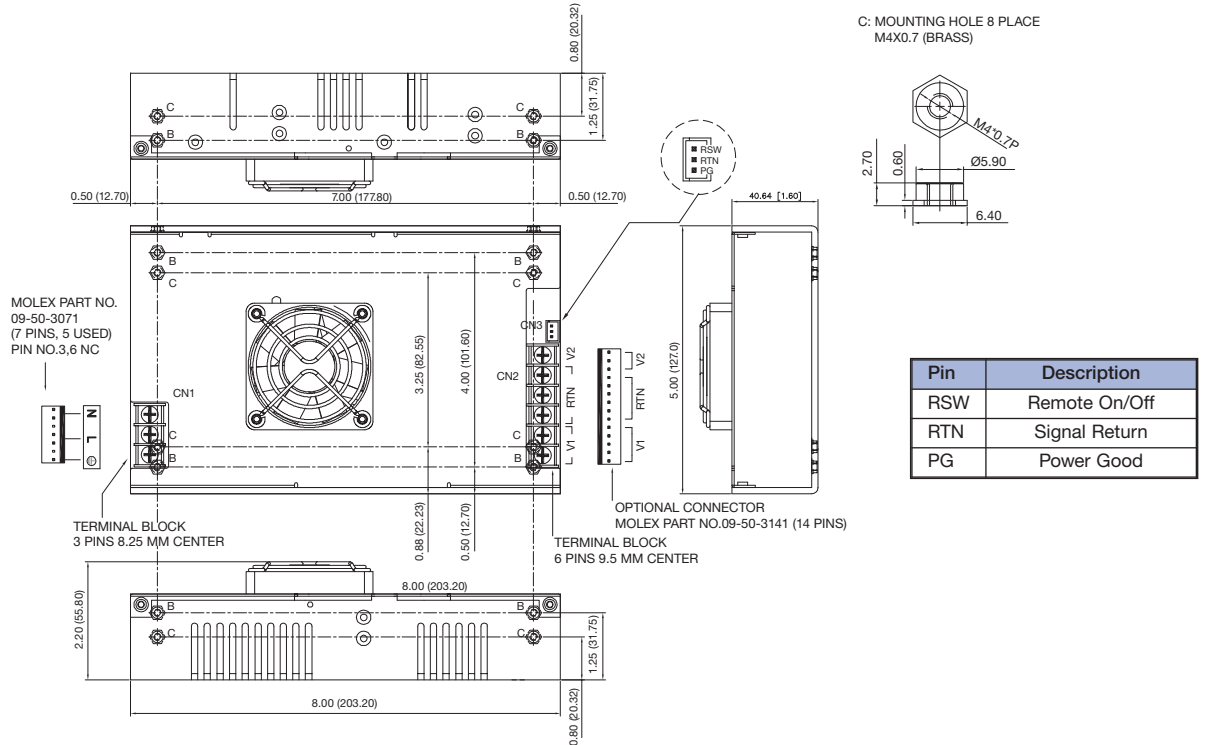
3. Weight: 3.53 lbs (1.6 kg)
4. Fan output not available

### Mechanical Details - Top Fan (-TF)

#### Single Model



#### Dual Model



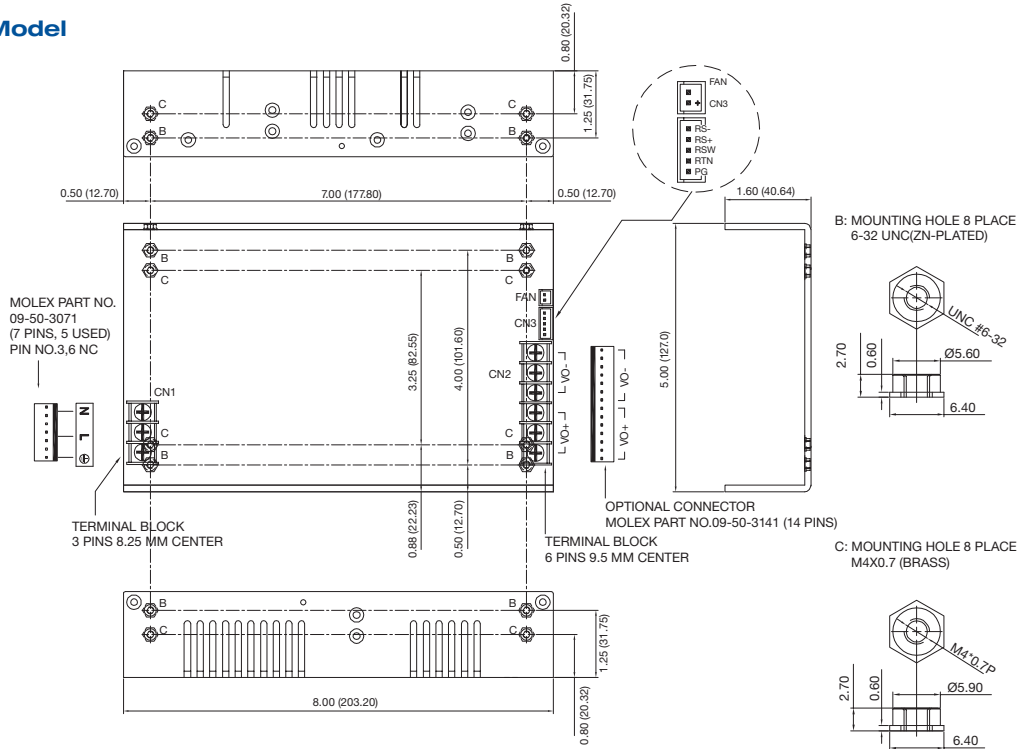
#### Notes

1. All dimensions in inches (mm).
2. Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)

3. Weight: 2.87 lbs (1.3 kg)
4. Fan output not available

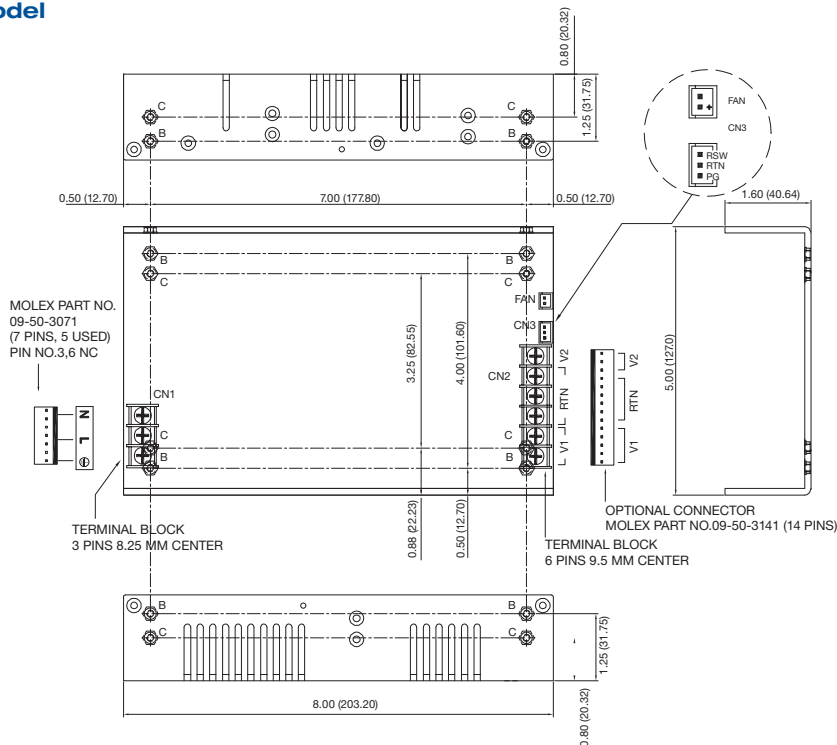
### Mechanical Details - U-Channel

#### Single Model



Pin	Description
RS-	Negative remote sense
RS+	Positive remote sense
RSW	Remote On/Off
RTN	Signal Return
PG	Power Good

#### Dual Model



Pin	Description
RSW	Remote On/Off
RTN	Signal Return
PG	Power Good

#### Notes

1. All dimensions in inches (mm).
2. Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)

3. Weight: 2.65 lbs (1.2 kg)

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