



# CH Actuator

## High Torque electric actuator

The CH valve actuators are used on ball or butterfly valves. This quarter turn actuators are available from 443 lb-in to 3540 lb-in. As standard, this actuator offers an IP67 ABS housing, dome position indicator, end of travel limit switches, manual override and an internal heater. The new Series offers multi-voltage capability and failsafe functionality utilizing a super-capacitor back-up system.



The CH family provides the following output running torques:

Model	Nominal Torque
CH1	443 lb-in (50 Nm)
CH2	708 lb-in (80 Nm)
CH3	974 lb-in (110 Nm)
CH4	1770 lb-in (200 Nm)
CH5	3540 lb-in (400 Nm)

### Technical features & benefits:

- **Multiple ISO 5211 mountings.**

The CH Series Actuators are ready for direct attachment on valves providing two size ISO 5211 and an octagonal female drive output.

- **Dome style local visual indicator.**

A clearly visible indicator allows intuitive indication of the valve position.

- **Hand operation.**

by hexagonal wrench, supplied in clip under the actuator, it's possible to do open/close operation when no power is being applied.

- **Fully weatherproof to IP67.**

Enhances the range of application environments.

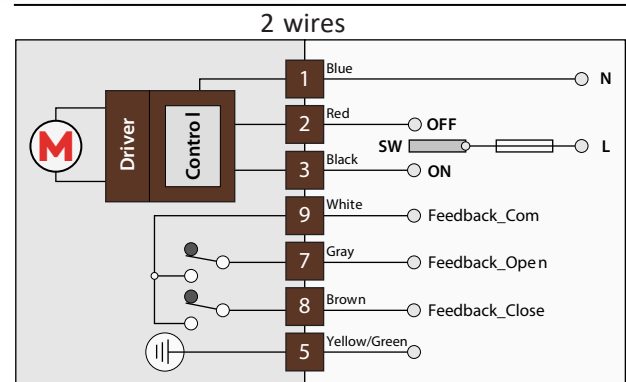
- **End of travel confirmation switches.**

Provides line voltage capable switch up to 1 A Resistive.

- **Special models available.**

The CH family fits the customer needs extending the application coverage on request.

### Wiring diagrams - On/Off models



# CH1 - 443 lb-in (50 Nm)

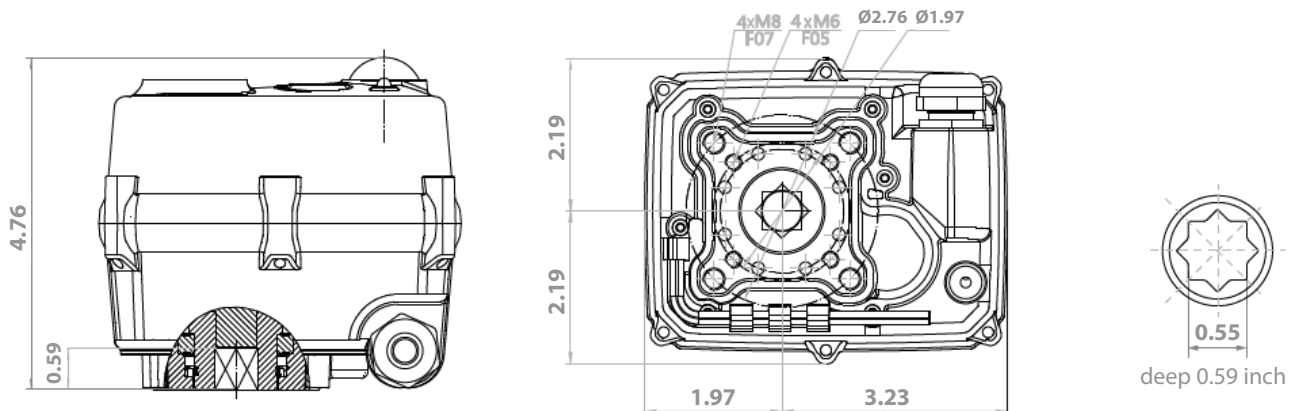


## Technical specification

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
Ordering code	CH1GCM2	CH1FCM2	CH1GCM2Fx*	CH1GCM2Fx*
Rated voltage	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)
Voltage range	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V
Consumption	25 W	25 W	40 W	40 W
Peak current	6.25 A	6.25 A	6.25 A	6.25 A
Fuse	2 A	4 A	4 A	4 A
Maximum break Torque lb-in	531.04 lb-in		531.04 lb-in	
Manual operation	Yes, by hexagonal wrench (supplied in clip) when no power is being applied.			
Run time	≈ 10 sec			
Operating frequency	Not continuous, allow ≥ 1 minute between cycles			
Position confirmation	Mechanically driven dome style visual 2 colour indicator			
Mounting restriction	Do not install underslung/upside down. Can install upright horizontally or vertically.			
End position indication	Micro-switches operated by adjustable internal cams , set slightly ahead of the final motor stop position.			
ISO 5211	F05 & F07			
Working angle	Factory set at 90° ± 2°, maximum angle of rotation 360° unless multi turn series.			
Female drive	0.55 inch x 0.59 inch deep			
Ingress protection	IP67			
Max media temperature	≤ 176° F			
Ambient temperature	-4° F to 140° F			
Non-operating temperature	-40° F to 176° F			
Ambient humidity	5-95% RH non-condensing			
Housing	Plastic (ABS) cover			

\*Note: x = O Failsafe Valve Open; C Failsafe Valve Closed

## Dimensions inches



**WARNING:** This product can expose you to chemicals including lead which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



# CH2 - 708 lb-in (80 Nm)

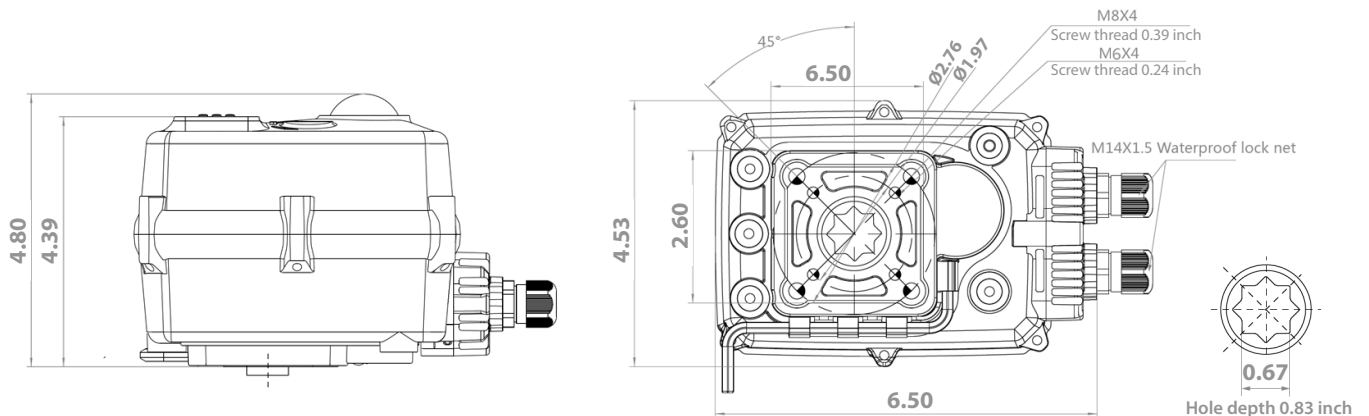


## Technical specification

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
	CH2GCM2	CH2FCM2	CH2GCM2Fx*	CH2FCM2Fx*
<b>Ordering code</b>	CH2GCM2	CH2FCM2	CH2GCM2Fx*	CH2FCM2Fx*
<b>Rated voltage</b>	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)
<b>Voltage range</b>	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V
<b>Consumption</b>	60 W	60 W	60 W	60 W
<b>Peak current</b>	3.75 A	3.75 A	3.75 A	3.75 A
<b>Fuse</b>	4 A	4 A	4 A	4 A
<b>Maximum break Torque lb-in</b>	796.57 lb-in	796.57 lb-in	796.57 lb-in	796.57 lb-in
<b>Manual operation</b>	Yes, by hexagonal wrench (supplied in clip) when no power is being applied.			
<b>Run time</b>	≈ 10 sec			
<b>Operating frequency</b>	Not continuous, allow ≥ 1 minute between cycles			
<b>Position confirmation</b>	Mechanically driven dome style visual 2 colour indicator			
<b>Mounting restriction</b>	Do not install underslung/upside down. Can install upright horizontally or vertically.			
<b>End position indication</b>	Micro-switches operated by adjustable internal cams , set slightly ahead of the final motor stop position.			
<b>ISO 5211</b>	F05 & F07			
<b>Working angle</b>	Factory set at 90° ± 2°, maximum angle of rotation 360° unless multi turn series.			
<b>Female drive</b>	0.67 inch x 0.83 inch deep			
<b>Ingress protection</b>	IP67			
<b>Max media temperature</b>	≤ 176° F			
<b>Ambient temperature</b>	-4° F to 140° F			
<b>Non-operating temperature</b>	-40° F to 176° F			
<b>Ambient humidity</b>	5-95% RH non-condensing			
<b>Housing</b>	Plastic (ABS) cover			

\*Note: x=O Failsafe Valve Open; C Failsafe Valve Closed

## Dimensions inches



# CH3 - 974 lb-in (110 Nm)

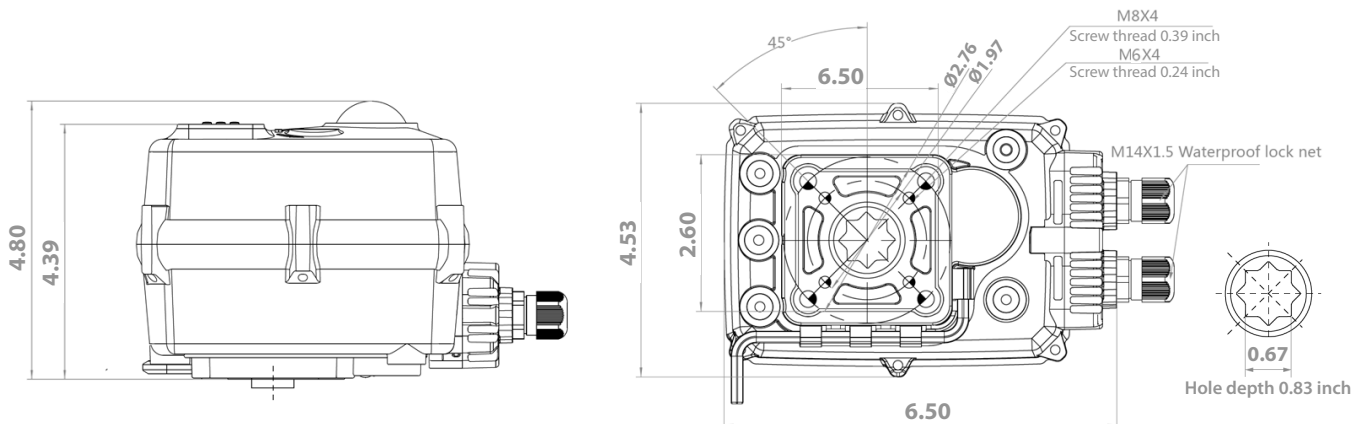


## Technical specification

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
Ordering code	CH3GCM2	CH3FCM2	CH3GCM2Fx*	CH3FCM2Fx*
Rated voltage	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)
Voltage range	AC 95-265V / DC 100-300V	AC 20-28 / DC 22-32V	AC 95-265V / DC 100-300V	AC 20-28 / DC 22-32V
Consumption	100 W	100 W	100 W	100 W
Peak current	6.25 A	6.25 A	6.25 A	6.25 A
Fuse	2 A	10 A	2 A	10 A
Maximum break Torque lb-in	1239.11 lb-in		1239.11 lb-in	
Manual operation	Yes, by hexagonal wrench (supplied in clip) when no power is being applied Run time			
Run time	≈ 10 sec			
Operating frequency	AC not continuous, 75% duty cycle but recommend allowing ≥1 min between cycles. DC is continuous.			
Position confirmation	Mechanically driven dome style visual 2 color indicator			
Mounting restriction	None, it can be mounted at any angle. Leave space for manual operation and electrical connection.			
End position indication	Micro-switches operated by adjustable internal cams , set slightly ahead of the final motor stop position.			
ISO 5211	F05 & F07			
Working angle	Factory set at 90° ± 2°			
Female drive	0.67 inch octagon x 0.83 inch deep			
Ingress protection	IP67			
Max media temperature	≤ 176° F			
Ambient temperature	-4° F to 140° F			
Non-operating temperature	-40° F to 176° F			
Ambient humidity	5-95% RH non-condensing			
Housing	Plastic (ABS) cover			

\*Note: x=O Failsafe Valve Open; C Failsafe Valve Closed

## Dimensions inches



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# CH4 - 1770 lb-in (200 Nm)

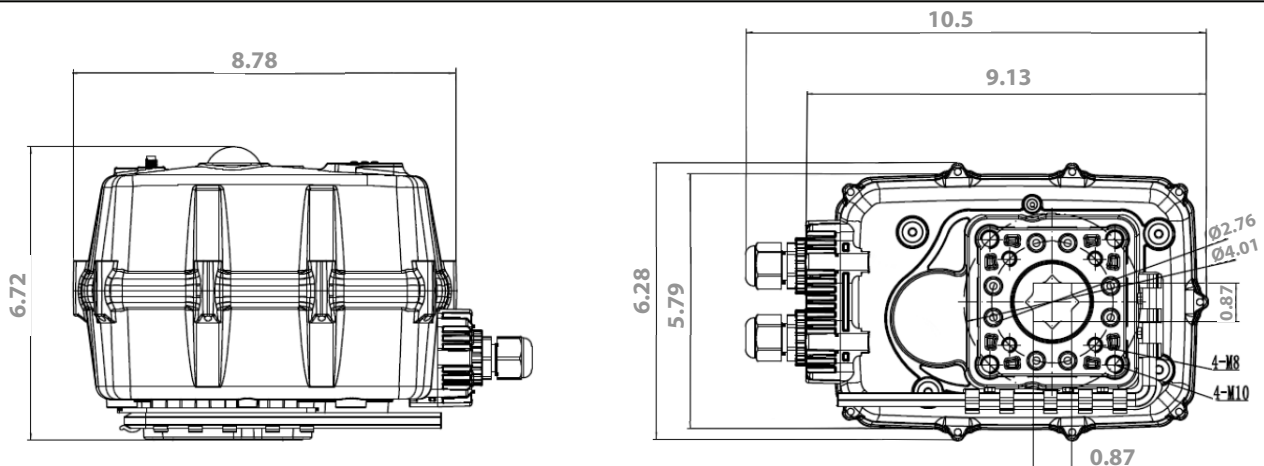


## Technical specification

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
	CH4GCM2	CH4FCM2	CH4GCM2Fx*	CH4FCM2Fx*
<b>Ordering code</b>	CH4GCM2	CH4FCM2	CH4GCM2Fx*	CH4FCM2Fx*
<b>Rated voltage</b>	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)
<b>Voltage range</b>	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V
<b>Consumption</b>	120 W	120 W	150 W	150 W
<b>Peak current</b>	7.5 A	7.5 A	7.5 A	7.5 A
<b>Fuse</b>	10 A	10 A	10 A	10 A
<b>Maximum break Torque lb-in</b>	2124.18 lb-in		2124.18 lb-in	
<b>Manual operation</b>	Yes, by hexagonal wrench (supplied in clip) when no power is being applied. Must engage declutch button on cover first.			
<b>Run time</b>	≈ 25 sec			
<b>Operating frequency</b>	Not continuous, allow ≥ 1 minute between cycles			
<b>Position confirmation</b>	Mechanically driven dome style visual 2 colour indicator			
<b>Mounting restriction</b>	Do not install underslung/upside down. Can install upright horizontally or vertically.			
<b>End position indication</b>	Micro-switches operated by adjustable internal cams , set slightly ahead of the final motor stop position.			
<b>ISO 5211</b>	F07 & F10			
<b>Working angle</b>	Factory set at 90° ± 2°, maximum angle of rotation 360° unless multi turn series.			
<b>Female drive</b>	0.87 inch x 1.06 inch deep			
<b>Ingress protection</b>	IP67			
<b>Max media temperature</b>	≤ 176° F			
<b>Ambient temperature</b>	-4° F to 140° F			
<b>Non-operating temperature</b>	-40° F to 176° F			
<b>Ambient humidity</b>	5-95% RH non-condensing			
<b>Housing</b>	Plastic (ABS) cover			

\*Note: x=O Failsafe Valve Open; C Failsafe Valve Closed

## Dimensions inches



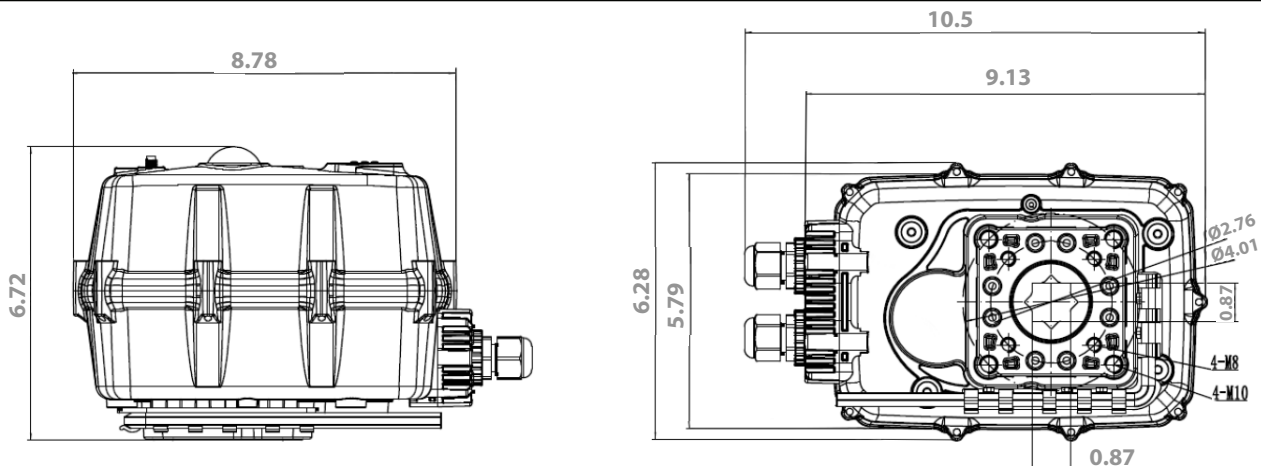
# CH5 - 3540 lb-in (400 Nm)



## Technical specification

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
Ordering code	CH5GCM2	CH5FCM2	NA	NA
Rated voltage	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)		
Voltage range	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V		
Consumption	150 W	150 W		
Peak current	9.3 A	9.3 A		
Fuse	15 A	15 A		
Maximum break Torque lb-in	450 Nm			
Manual operation	Yes, by hexagonal wrench (supplied in clip) when no power is being applied. Must engage declutch button on cover first			
Run time	≈ 25 sec			
Operating frequency	Not continuous, allow ≥ 1 minute between cycles			
Position confirmation	Mechanically driven dome style visual 2 colour indicator			
Mounting restriction	Do not install underslung/upside down. Can install upright horizontally or vertically			
End position indication	Micro-switches operated by adjustable internal cams , set slightly ahead of the final motor stop position			
ISO 5211	F07 & F10			
Working angle	Factory set at 90° ± 2°, maximum angle of rotation 360° unless multi turn series			
Female drive	22mm x 27mm deep			
Ingress protection	IP67			
Max media temperature	≤ 176° F			
Ambient temperature	-4° F to 140° F			
Non-operating temperature	-40° F to 176° F			
Ambient humidity	5-95% RH non-condensing			
Housing	Plastic (ABS) cover			

## Dimensions inches



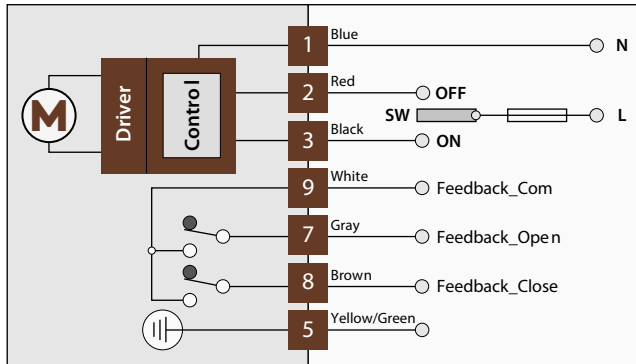
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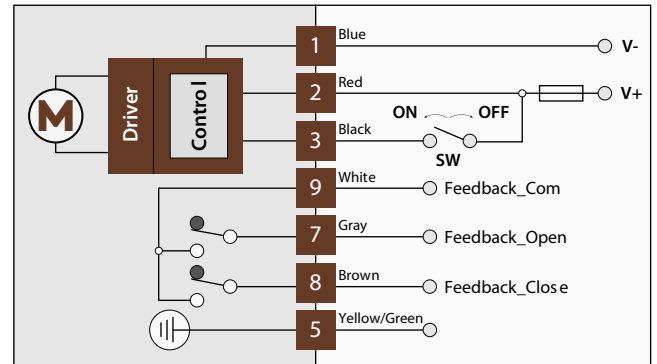
## Wiring diagrams

### On/Off models


2 wires




3 wires



## Valves combination

s.84 AM	code	size	$\Delta P$	CH1 443 lb-in	CH2 708 lb-in	CH3 974 lb-in	CH4 1770 lb-in	CH5 3540 lb-in
	S84L00AM	2 1/2"	0 ÷ 15 Bar 0 ÷ 200 PSI	•				
	S84M00AM	3"			•			
	S84N00AM	4"					•	
	code	size	$\Delta P$	CH1 443 lb-in	CH2 708 lb-in	CH3 974 lb-in	CH4 1770 lb-in	CH5 3540 lb-in
	S84L00AM	2 1/2"	15 ÷ 30 Bar 200 ÷ 450 PSI			•		
	S84M00AM	3"					•	
	S84N00AM	4"						•

s.95 AM	code	size	$\Delta P$	CH1 443 lb-in	CH2 708 lb-in	CH3 974 lb-in	CH4 1770 lb-in	CH5 3540 lb-in
	S95L41AM	2 1/2"	0 ÷ 15 Bar 0 ÷ 200 PSI	•				
	S95M41AM	3"			•			
	S95N41AM	4"					•	
	code	size	$\Delta P$	CH1 443 lb-in	CH2 708 lb-in	CH3 974 lb-in	CH4 1770 lb-in	CH5 3540 lb-in
	S95L41AM	2 1/2"	15 ÷ 30 Bar 200 ÷ 450 PSI			•		
	S95M41AM	3"					•	
	S95N41AM	4"						•