

TA310R series

Product Segments

Care Motion

The TA31QR improves upon the TA31 with added design benefits and functionality, while providing a high quality yet economical option for medical applications. In particular, the TA31QR provides multiple output signal options. These include a spindle set Hall sensors or POT which will continue to send position feedback after the quick release action is performed. This feature allows the user to maintain accurate position within the control system without having to perform a system reset.

General Features

Max. load	5,000N (push)
	3,000N (pull)
Vax. speed at max. load	4.7mm/s
Max. speed at no load	11.2mm/s
Retracted length	≥ Stroke + 178mm
P rating	IP66W
Stroke	25~450mm
Options	Safety nut, Hall sensors, POT, spindle set
	Hall sensors
Voltage	12/24V DC
	12/24V DC (PTC)
	24V DC, overcurrent module
	24V DC, PTC, overcurrent module
Color	Black or grey
Operational temperature range	+5°C~+45°C

TA31QR series

Drawing

Standard Dimensions (mm)



Load and Speed

CODE	Load (N)	Load (N)		Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull	Force (N)	No Load 32V DC	With Load 24V DC	No Load 32V DC	With Load 24V DC
Motor Spee	d (3800RPM, Du	ity Cycle 10%)					
J	3500	3000	1000	0.8	3.5	11.2	6.3
к	5000	3000	1500	0.8	3.5	9.0	4.7

Note

1 The current & speed in table are tested with 24V DC motor. With a 12V DC motor, the current is approximately twice the current measured in 24V DC; speed will be similar for both voltages.

2 This self-locking force level is reached only when a short circuit is applied on the terminals of the motor. All the TiMOTION control boxes have this feature built-in.

3 The current & speed in table are tested when the actuator is extending under push load.

4 Standard stroke: 25~450mm





Performance Data (24V DC Motor)

Motor Speed (3800RPM, Duty Cycle 10%)









Note

1 The performance data in the curve charts shows theoretical value.



TA31QR Ordering Key



TA31QR

Version: 20200918-F

				VCI31011. 20200310			
Voltage	1 = 12V DC 2 = 24V DC	5 = 24V DC, PTC 6 = 12V DC, PTC	J = 24V DC, Over current module	K = 24V DC, PTC, Over current module			
Load and Speed	<u>See page 2</u>						
Stroke (mm)	25~450						
Retracted Length (mm)	<u>See page 5</u>						
Rear Attachment (mm)	2 = Aluminum casting, L 3 = Aluminum casting, L	J clevis, slot 8.2, depth 17.0, hol J clevis, slot 8.2, depth 17.0, hol	le 10.2 le 12.2				
<u>See page 6</u>	C = Aluminum casting, l	J clevis, slot 8.2, depth 17.0, ho	le 10.2, with T-bushing				
Front Attachment (mm) See page 6	1 = Punched hole on inn slot, hole 10.2, with 2 = Punched hole on inn	er tube + plastic cap, without plastic bush er tube + plastic cap, without	6 = Punched hole on inner tube, wihout slot, hole 12.2 7 = Aluminum casting, U clevis, width 6.2, depth 17.0, hole 10.2				
	slot, hole 12.2 3 = Plastic, U clevis, wid push < 4000N and p	lth 8.2, depth 20.0, hole 10.2, foi ull < 2500N	8 = Aluminum casting, U cl hole 12.2 9 = Aluminum casting, U cl	evis, width 6.2, depth 17.0, evis, width 6.2, depth 17.0,			
	4 = Plastic, U clevis, wid push < 4000N and p	ng					
	5 = Punched hole on inn with plastic bush	5 = Punched hole on inner tube, wihout slot, hole 10.2, with plastic bush					
Direction of Rear Attachment (Counterclockwise)	1 = 0°	3 = 90°					
<u>See page 7</u>							
Color	1 = Black	2 = Pantone 428C					
IP Rating	1 = Without	2 = IP54	3 = IP66	5 = IP66W			
Special Functions	0 = Without (Standard)		2 = Standard push only				
for Spindle Sub- Assembly	1 = Safety nut		3 = Standard push only + S	afety nut			
Functions for	1 = Two switches at full	retracted / extended positions t	o cut current				
See nage 7	2 = Two switches at full	retracted / extended positions t	o cut current + third one in be	tween to send signal			
<u>000 pago /</u>	3 = IWO SWITCHES AT TUIL retracted / extended positions to send signal 4 = Two switches at full retracted / extended positions to condicional + third one in between to condicional						
	5 = Two switches at full TC14, TC21)	retracted / extended positions t	o send signal (Operate with co	ontrol box: TC1, TC8, TC10,			
Output Signals	0 = Without		P = POT				
	2 = Hall sensor*2		H = Spindle set Hall sensor	rs*2			
Connector (mm)	1 = DIN 6P, 90° plug		R = Extension cable, preset	t on motor cover (cable legth			
<u>See page 8</u>	2 = Tinned leads		50)	-			
	4 = Big 01P, plug		E = Molex 8P, plug				
	C = Y cable (direct cut, v	vater proof, anti-pull)	$F = DIN 6P, 180^{\circ} plug$				
	D = Extension cable, not legth 120)	t preset on motor cover (cable	G = Audio plug				
Cable Length (mm)	0 = Straight, 100	4 = Straight, 1250	8 = Curly, 400	(cable legth 120)			
	1 = Straight, 500	5 = Straight, 1500	B~H = For direct cut system	R = Extension cable, prese			
	2 = Straight, 750 3 = Straight, 1000	6 = Straight, 2000 7 = Curly, 200	<u>See page 8</u> J = Extension cable, not preset on motor cover	on motor cover (cable legth 50)			

Retracted Length (mm)

- 1. Calculate A+B+C+D = Y
- 2. Retracted length needs to \geq Stroke + Y

A. Front Attachment CODE 1, 2, 5, 6 +178 3, 4 +201 7, 8, 9 +193 B,C +201

Stroke (mm)	Load (N)			
	3500	5000		
25~150	-	-		
151~200	-	-		
201~250	-	-		
251~300	-	-		
301~350	+5	+5		
351~400	+10	+10		
401~450	+15	+15		

C. Load V.S	S. Special Functions for S	Spindle Sub-Assembly				
CODE	Load (N)	Load (N)				
	3500	5000				
0	-	-				
1	-	-				
2	-	+3				
3	-	+3				
D. Signal O	utputs					
CODE						
0	-					
1	-					
2	-					
Р	+7					
н	-					

TA31QR Ordering Key Appendix

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Rear Attachment (mm)

2 = Aluminum casting, U clevis, slot 8.2, depth 17.0, hole 10.2



- Front Attachment (mm)
- 1 = Punched hole on inner tube + plastic cap, without slot, hole 10.2, with plastic bush



5 = Punched hole on inner tube, wihout slot, hole 10.2, with plastic bush



9 = Aluminum casting, U clevis, width 6.2, depth 17.0, hole 10.2, with T-bushing



3 = Aluminum casting, U clevis, slot 8.2, depth 17.0, hole 12.2



C = Aluminum casting, U clevis, slot 8.2, depth 17.0, hole 10.2, with T-bushing



2 = Punched hole on inner tube + plastic cap, without slot, hole 12.2



6 = Punched hole on inner tube, wihout slot, hole 12.2



3 = Plastic, U clevis, width 8.2, depth 20.0, hole 10.2, for push < 4000N and pull < 2500N



7 = Aluminum casting, U clevis, width 6.2, depth 17.0, hole 10.2



4 = Plastic, U clevis, width 8.2, depth 20.0, hole 12.2, for push < 4000N and pull < 2500N



8 = Aluminum casting, U clevis, width 6.2, depth 17.0, hole 12.2



TA31QR Ordering Key Appendix



Direction of Rear Attachment (Counterclockwise)



Functions for Limit Switches

Wire Definitions								
CODE	Pin							
	🛑 1 (Green)	🛑 2 (Red)	🔵 3 (White)	4 (Black)	😑 5 (Yellow)	6 (Blue)		
1	extend (VDC+)	N/A	N/A	N/A	retract (VDC+)	N/A		
2	extend (VDC+)	N/A	middle switch pin B	middle switch pin A	retract (VDC+)	N/A		
3	extend (VDC+)	common	upper limit switch	N/A	retract (VDC+)	lower limit switch		
4	extend (VDC+)	common	upper limit switch	medium limit switch	retract (VDC+)	lower limit switch		
5	extend (VDC+)	N/A	upper limit switch	common	retract (VDC+)	lower limit switch		

TA31QR Ordering Key Appendix

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Connector







C = Y cable (direct cut, water proof, anti-pull)



4 = Big 01P, plug



Cable length for direct cut system (mm)					
CODE	L1	L2	L3		
В	100	100	100		
С	100	1000	400		
D	100	2700	500		
E	1000	100	100		
F	100	600	1000		
G	1500	1000	1000		
Н	100	100	1200		

D = Extension cable, not preset on motor cover (cable legth 120mm)



R = Extension cable, preset on motor cover (cable legth 50mm)











G = Audio plug



Terms of Use

The user is responsible for determining the suitability of TiMOTION products for a specific application. TiMOTION products are subject to change without prior notice.