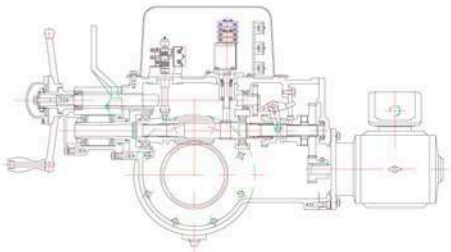
LTMD-Q SERIES

MULTI TURN ACTUATOR FOR NUCLEAR USE

LTMD-Q series Actuators

Structure



LTMD-Q series actuators are structurally rigid and properly operated under even a severe environment. As main material of outside parts is cast-iron and inner structure is so simple, they are very suitable for Class-1E.

Characteristics

Motor	Starting torque is more than 250% of normal operating torque
Output Revolution	13 ~ 85rpm in 60Hz 11 ~ 71rpm in 50Hz
Thrust Unit	Gear case does not directly take thrust because thrust unit, made of robust ductile cast iron, absorbs it primarily.
Slip Mechanism	Gear reducer or valve is protected from overload when actuators are operated manually (available above LTMD-05Q)
Torque Switch	When the actual torque value goes over pre-set value of torque, its torque is transmitted to torque switch by torque shaft. Electric motor stops automatically with torque switch activated. Changable torque value by repositioning the adjustable scale at the site.
Limit Switch	Adopted the counter gear train to ensure high accuracy and reliability at any predetermined position. Set easily and fast by screwdriver.
Manual / Power Shifting	Simply converted to manual from motor-driven mode by just shifting the lever. By switching on motor, Motor powered driving is automatically returned.
Position Indicator	Continuously shows the exact position of valve in percentage.

Specifications

1. MOTOR	- Certified Class 1E for Nuclear Power Plant - Design Specification : NEMA MG1 - High starting torque and low inertia force , TENV - 400 / 440 / 460VAC 60Hz 3 Phase / 15min rating - Deviation of main electric power for normal operation Voltage : +10% ~ -25% / Frequency : ±5% - Insulation grade : H
2. WORM & WORM WHEEL	- Self-Locking design - Reliable long-term performance due to alloy steel & bronze - Hammer-blow effect for improvement of starting performance
3. LIMIT SWITCH	- Counter gear type & snap-action for reliability - Contact of DPST method and using silver alloy - Maximum 16 contacts (4 trains x 4 contacts) - Durability of over 100,000 cycle
4. TORQUE SWITCH	- Mechanism of cam driving - Available to contact for warning or alarming - Setting torque value by adjusting scale
5. ENCLOSURE	- IP 55 based on IEC 60529
6. OPTION	- Potentiometer and R/I Converter

Non metal materials for LTMD-Q

Classification	Materials	Application
PLASTIC group	PEEK	Limit Switch / Torque Switch
	Phenol	Terminal Block
RUBBER group	Viton	O Ring / Oil Seal / Gasket
	EPR	Wire (Class 1E certified)
LUBRICATION	Fluorocarbon Grease	Lubricant
PAINT	Epoxy / Polyamide Resin	Primer / Top Coat (Class 1E certified)

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SPEED vs TORQUE DATA (460V, 3ψ, 60Hz)

ACTUATOR MODEL			MAXIMUM SETTING TORQUE(N • m)										
LTMD -01Q	speed(r.p.m.)		15.9	22.3	28.5	34.0	38.1	42.7	44.6	57.0	68.0	76.2	85.4
	motor (KW)	0.2	140	100	79	66	59	52	–	–	–	–	–
		0.4	210	150	120	100	90	81	90	70	59	52	44
		0.75	–	250	230	190	170	150	170	130	110	100	91
LTMD – 02Q	speed(r.p.m.)		15.5	18.6	24.8	31.0	32.3	37.2	39.5	49.6	64.6	79.0	–
	motor (KW)	0.4	220	180	130	–	–	–	–	–	–	–	–
		0.75	420	350	270	240	–	200	–	150	–	–	–
		1.5	–	–	440	–	390	–	320	290	230	180	–
LTMD – 05Q	speed(r.p.m.)		–	27.7	–	35.8	–	42.7	–	54.8	–	71.6	84.5
	motor (KW)	0.75	–	240	–	180	–	–	–	–	–	–	–
		1.5	–	460	–	350	–	–	–	270	–	200	–
		2.2	–	730	–	560	–	–	–	430	–	330	–
		3.7	–	–	–	830	–	820	–	–	–	570	470
LTMD – 1Q	speed(r.p.m.)		13.0	21.6		35.5		43.3		51.3	60.5	78.6	
	motor (KW)	1.5	970	580	–	350	–	–	–	–	–	–	
		2.2	1550	930	–	570	–	540	–	450	–	–	
		3.7	–	1610	–	980	–	930	–	790	670	510	
		5.5	–	1720	–	1420	–	1350	–	1140	970	740	
LTMD – 3Q	speed(r.p.m.)		12.8	22.0		31.7		44.1		51.7	63.3	77.2	
	motor (KW)	3.7	2720	1580	–	1100	–	–	–	–	–	–	
		5.5	–	2290	–	1590	–	1330	–	1140	930	760	
		7.5	–	3330	–	2320	–	1940	–	1650	1350	1110	
		11	–	–	–	3920	–	3250	–	270	2260	1860	
LTMD – 5Q	speed(r.p.m.)		13.7	20.1	29.6	36.4		42.5		50.3	53.1		
	motor (KW)	5.5	3680	2510	–	–	–	–	–	–	–		
		7.5	5360	3660	–	–	–	–	–	–	–		
		11	–	6130	4160	3370	–	3370	–	2850	2700		
		15	–	6370	5040	4090	–	4090	–	3450	3270		
LTMD – 10Q	speed(r.p.m.)		12.7	19.1	25.0	32.1	37.7						
	motor (KW)	7.5	5780	3840	2940	2290	1940						
		11	9680	6440	4920	3830	3260						
		15	–	7810	5970	4650	3950						
		18.5	–	8940	6840	5320	4530						
		22	–	11760	8470	6590	5610						

※ Note : For the other voltages, Please contact our design department

Mechanical data

ALLOWABLE TORQUE N · m	ALLOWABLE THRUST KN	MOUNTING FLANGE SIZE(mm)	MAX.STEM DIA(mm)		WEIGHT kg Approx.
		PILOT DIA. TAP PCD TAP SIZE FLANGE O.D	BORE & KEY	SCREW	
250	45	100 125 4-M10 150	28	30	57 66 70
440	65	130 160 4-M12 190	40	42	81 84 91
830	103	130 180 8-M16 220	50	52	139 146 156 163
1720	196	200 250 8-M16 300	62	70	211 221 228 250
3920	310	250 300 8-M20 340	80	90	299 321 336 360
6370	490	310 360 8-M24 410	100	115	464 479 503 528
11760	1080	300 406 8-M36 475	115	135	692 716 741 781 801