

Rasco Contactors ... Rasco Contactors							Third Party Contactors				
Kelvin Contactors							High Frequency Contactors				
Contactor Type	Kelvin	ESX Kelvin	QFN Kelvin (4) Kelvin finepitch	PTB Kelvin	PTB Kelvin (10) High Current	X-Line Kelvin	Pogo Pin	ECT Bantampak	C-Type	Johnstech	Yamaichi
<b>SO1X00 SO2X00</b>											
Temperature Range(1) (2)	-60°... +175°C	-60° ... +175°C	-60°... +175°C	-60°... +175°C	-60°... +175°C	-60° ... +175°C	-60°... +175°C (3)	-60°... +175° C (9)	n/a	n/a	n/a
Plunger (stroke)	1.5 mm ... 33.5 mm	1.5 mm ... 33.5 mm	RPTB 65 - 70 mm	PTB 65 - 70 mm	PTB 65 - 70 mm	PTB 65 - 70 mm	RPTB 65 - 70 mm	RPTB 63.5 - 70 mm	PTB 63.5 - 70 mm	RPTB 63.5 - 70 mm	PTB 63.5 - 70 mm
Pin Count	up to 48	up to 54	n/a	up to 54	up to 54	n/a	n/a	> 2,500 (as required)	up to 54	up to 54	up to 54
Device Pitch	down to 0.5 mm	down to 0.4 mm	down to 0.4 mm	down to 0.4 mm	down to 0.4 mm	down to 0.4 mm	down to 0.4 mm (3)	down to 0.5 mm	down to 0.5 mm	down to 0.5 mm	down to 0.5 mm
Signal Path Length	~90 mm to ~130 mm	~90 mm to ~130 mm	~30 mm	~35 mm	~35 mm	~11 mm (surface mounted) ~35 mm (edge connectors)	n/a (3)	down to 2.5 mm	down to ~9 mm	n/a	n/a
Package Type	SOP, SSOP, TSSOP	SOP, SSOP, TSSOP	QFN	SOP, SSOP, TSSOP	TO	QFN	QFN	all types (custom designs)	SOP, SSOP, TSSOP, QFN	SOP, SSOP, TSSOP, QFN	SOP, SSOP
Deflection (typical)	0.3 mm	0.3 mm	0.25 mm	0.3 mm	0.5 mm	0.25 mm	n/a (3)	0.2 mm (6)	0.38 - 0.69 mm (6)	0.5 mm (3) (6)	n/a
Lifetime (typical) (5)	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	500,000 (3)	up to 500,000	n/a	1,000,000	n/a
Contact Force (typical)	0.40 N	0.40 N	0.20 - 0.30 N	0.60 - 0.80 N	1.00 - 1.20 N	0.20 N	n/a (3)	0.33 - 0.57 N	n/a	n/a	n/a
Peak Current (6)	70A/3ms	50A/0,2ms	n/a	50A/0.2ms	60A/3ms	n/a	n/a (3)	30 - 50A (3)	n/a	n/a	n/a
Continuous Current	2A	2A	2A	2A	2A	2A	up to 2.5A (3)	3.5A @ 20K T-rise (3)	0.5A	1.5A (3)	0.5A
Peak Voltage	(depending on pitch, contactor material & other)	(depending on pitch, contactor material & other)	(depending on pitch, contactor material & other)	up to 6kV (7)	up to 6kV (7)	(depending on pitch, contactor material & other)	n/a (3)	(depending on pitch, contactor material & other)	(depending on pitch, contactor material & other)	(depending on pitch, contactor material & other)	(depending on pitch, contactor material & other)
Inductance	n/a	11 nH (8)	15 nH (8)	25 nH (8)	25 nH (8)	n/a	1.1 nH (3) (8)	< 1.0 nH (6)	n/a	0.95 nH (3) (8)	n/a
Typical Resistance (11)	50 mOhm	50 mOhm	50 mOhm	50 mOhm	50 mOhm	50 mOhm	62 mOhm (3)	<100 mOhm (5)	n/a	50 mOhm	30 mOhm (9)
Bandwith	n/a	n/a	n/a	n/a	n/a	n/a	n/a	up to 23GHz @-1dB (3)(8)	n/a	up to 12.87 GHz (3)	n/a
Loadboard Connection (12)	pin/edge connectors	pin/edge connectors	surface mounted	surface mounted	surface mounted	surface mounted/edge	surface mounted	surface mounted	Surface Mounted/Pin	surface mounted	Pin
Manual Actuator	type 3/4	type 3/4	type 1	type 2/3/4	type 2/3/4	type 1/4	type 1	various available	type 3/4	available	n/a

(1) Temperature performance can only be guaranteed for Rasco approved sockets

(2) Optional extended temperature range + 175°C

(3) Depending on Pogo Pin

(4) Minimum pad size 0,35x0,2 mm, depending on device tolerances

(5) Depending on plating

(6) Depending on contact geometry

(7) Opposite pins, special plunger and contactor

(8) Depending on pitch

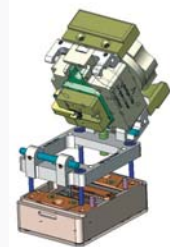

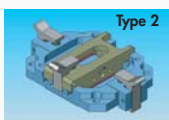

(9) Depending on socket type

(10) Self-cleaning, depending on plating

(11) Pin resistance without contact resistance

(12) All interfaces available

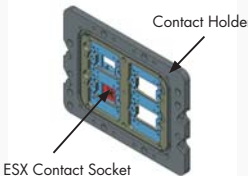
### Manual Actuators

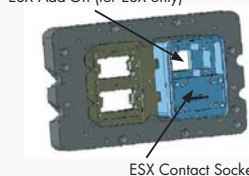
Each contactor can be assigned to at least one type of manual actuator (see table). Type 1 is usable for QFN packages, type 2,3 and 4 are for SO packages. Type 1,2,3 are socket used, type 4 is contact holder used. Special advantage type 3: Pitch and pin count independent; easy to handle.

### All Surface Mounted Contactors Require a Contactor Holder

Device Plunging Side



Loadboard Attachment Side




ESX Contact Socket

ESX Add-On (for ESX only)

ESX Contact Socket

### Contactors/ MEMS for:

1. Hall Sensors
2. Pressure Sensors
3. Optical Sensors
4. Acoustic Sensors



	Rasco		Third Party Contactors	
	HF Contactors (Kelvin also possible)			
Contactor type	Pogo Pin	ECT	NHK	Johnstech
<b>SO3000</b>				
Temperature range	-60° ... +160°C	-60° ... +160°C	-60° ... +160°C	-60° ... +160°C
Plunger (stroke)	Applicable to every contactor type			
Pin count	Depending on strip, tester limits, spring force			
Device pitch	down to 0.4 mm	down to 0.5 mm	down to 0.5 mm	n/a
Signal path length	n/a (2)	down to 6.45 mm (2)	n/a (2)	down to 2 mm
Package type	QFN, SOP, SSOP, TSSOP, TQFP	QFN, BGA, QFP, SOP, TSSOP (all common)	QFN, SOP, SSOP, TSSOP, TQFP	QFN, SOP, SSOP, TSSOP
Deflection (typical)	n/a	0.5 mm	n/a	0,2 mm (3)
Lifetime (typical)	500,000 (2)	500,000 (2)	n/a	n/a
Contact force (typical)	n/a (2)	0.24 - 0.57 N	0.35 N (2)	n/a
Peak current	n/a	17 - 21 A (2) (depending on duty cycle)	n/a	n/a
Continuous current	up to 2.5 A	1.6 A (2)	5.0 A (2)	4 A (3)
Peak voltage	n/a (2)	(depending on pitch, contactor material & geometry)	n/a	n/a
Inductance	1.1 nH (2) (4)	< 1.8 nH (2) (4)	0.86 nH (2) (4)	0.45 nH (3)
Resistance (typical)	62 mOhm (2)	< 250 mOhm (2)	80 mOhm (2)	30 mOhm (3)
Bandwidth	n/a	up to 7 GHz @ -1 dB (2)	up to 20 GHz (2)	up to 20 GHz
Loadboard Connection	surface mounted	surface mounted	surface mounted	surface mounted
Manual Actuator	available	available	available	available

(1) Temperature performance can only be guaranteed for sockets approved by Rasco  
 (2) Depending on Pogo Pin  
 (3) Depending on contact geometry  
 (4) Depending on pitch

Subject to technical changes without prior notice.



Product Specification

# Contactors