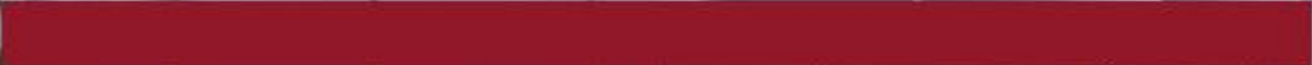




Publication 25182 Rev. AF

Industrial Turbine Products Catalog



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1. Turbine Controls and Associated Devices

2301E-ST Steam Turbine Controls

Part Number



2301E-ST – Steam Turbine Control	8273-1013
2301E-ST – Steam Turbine Control, CSA Hazardous Location	8273-1014
*Documentation: Product Spec: 03297, Manual: 26184	

Hydro Turbine Controls

Part Number



2301E-HT – Hydro Turbine Control (Francis Turbines), 24 VDC, Ordinary Location	8237-2046
*Documentation: Product Spec: 03459, Manual: 35092	



505HT – LVDC, Pelton Turbines	8200-1400
505HT – HVAC/DC, Pelton Turbines	8200-1401
505HT – LVDC, Francis / Kaplan Turbines	8200-1402
505HT – HVAC/DC, Francis / Kaplan Turbines	8200-1403
*Documentation: Product Spec: 03460, 03461, Manuals: 35116, 35117	

Accessories:

17" TouchPanel OCP – Includes RemoteView Software Program	8269-1073
RemoteView - Software License	8928-5311
Old 505 to New 505 Retrofit Wiring Kit	5404-1801

Peak200 Steam Turbine Controls**Part Number**

Peak200 - Bulkhead Mount, LV	8200-1500
Peak200 - Bulkhead Mount, HV	8200-1501
Peak200 - Bulkhead Mount, LV, ATEX	8200-1502
Peak200 - Front Panel Mount, LV	8200-1503
Peak200 - Front Panel Mount, HV	8200-1504
Peak200 - Front Panel Mount, LV, ATEX	8200-1505
Peak200 – Bulkhead Mount, LV, Hazardous Location, INMETRO cert	8200-1506
Peak200 – Front Panel Mount, LV, Hazardous Location, INMETRO cert	8200-1507
Peak200 – Bulkhead Mount, HV, N.A. Class1, Div2 Loc Compliant	8200-1508
Peak200 – Front Panel Mount, HV, N.A. Class1, Div2 Loc Compliant	8200-1509

*Documentation: Product Spec: 03438, Manual: 35051

505 Steam Turbine Controls**Part Number**

505 - LVDC, Ordinary Location	8200-1300
505 - HVAC/DC, Ordinary Location	8200-1301
505 - LVDC, Zone-2 Hazardous Location	8200-1302
*Documentation: Product Spec: 03422, Manuals: 26839V1, 26839V2	
505-XT - LVDC, Ordinary Location	8200-1310
505-XT - HVAC/DC, Ordinary Location	8200-1311
505-XT - LVDC, Zone-2 Hazardous Location	8200-1312
*Documentation: Product Spec: 03423, Manuals: 35018V1, 35018V2	
505-DR - LVDC, Ordinary Location	8200-1330
505-DR - HVAC/DC, Ordinary Location	8200-1331
Flex500DR FTM Kit – DR FTM, Interconnection Cables	5541-705
*Documentation: Product Spec: 03423, Manuals: 35018V1, 35018V2, 35018V3	

Auxiliaries

LinkNet-HT Analog 4-20 mA Module (8 AI and 2 AO)	8200-1203
LinkNet-HT RTD Module (8 RTD Inputs)	8200-1200
LinkNet-HT Discrete Input Module (16 DIs)	8200-1204
LinkNet-HT Discrete Output Module (16 DOs)	8200-1205
RemoteView Software License	8928-5311

5009XT Steam Turbine Controls**Part Number**

5009XT with 2 120 V AC/DC PS	8262-1141
5009XT with 2 220 VAC PS	8262-1142
5009XT with 2 24 VDC PS	8262-1143
Accessories:	
17" TouchPanel OCP – Includes RemoteView Software Program	8269-1073
RemoteView - Software License	8928-5311
Actuator Module Kit (2 2-Chan Act Modules, 2 Cables, 1 FTM)	8928-7574
Kit 5009XT Optional Analog/IO/FTM/Cable	8928-7575
Control Cabinet- 5009XT MICRONET + PROTECH-GII, (HV/HV, VOTED) + 220VAC TMR PS+ INTEG ACT KIT	9907-2024

Servo Position Controllers (Replace Digital Remote Final Drivers)**Part Number**

SPC - Configurable Servo/Actuator Driver, Marine Certified	8200-226
SPC - Configurable Servo/Actuator Driver, CANOpen Comm	8200-227
Optional Mounting Bracket – Vertical	8928-7334
*Documentation: Product Spec: 03254, Manual: 26236	

ProTech® Overspeed Protection Devices

Part Number

ProTech-SX



ProTech-SX - Panel Mount, HV/LV	8237-1242
ProTech-SX - Panel Mount, HV/HV	8237-1243
*Documentation: Product Spec: 03372, Manuals: 26546V1, 26546V2	

ProTech-GII



ProTech-GII - Bulkhead Mount, HV/LV, ind relay	8237-2594
ProTech-GII - Bulkhead Mount, HV/HV, ind relay	8237-2595
ProTech-GII - Bulkhead Mount, HV/LV, voted relays	8237-2596
ProTech-GII - Bulkhead Mount, HV/HV, voted relays	8237-2597
ProTech-GII - Panel Mount, HV/LV, ind relay	8237-2598
ProTech-GII - Panel Mount, HV/HV, ind relay	8237-2599
ProTech-GII - Panel Mount, HV/LV, voted relays	8237-2600
ProTech-GII - Panel Mount, HV/HV, voted relays	8237-2601
*Documentation: Product Spec: 03370, Manual: 35086	

ProTech TPS



ProTech TPS - Bulkhead Mount, HV/LV, ind relay	8237-2602
ProTech TPS - Bulkhead Mount, HV/HV, ind relay	8237-2603
ProTech TPS - Bulkhead Mount, HV/LV, voted relays	8237-2604
ProTech TPS - Bulkhead Mount, HV/HV, voted relays	8237-2605
ProTech TPS - Panel Mount, HV/LV, ind relay	8237-2606
ProTech TPS - Panel Mount, HV/HV, ind relay	8237-2607

ProTech TPS - Panel Mount, HV/LV, voted relays	8237-2608
ProTech TPS - Panel Mount, HV/HV, voted relays	8237-2609
*Documentation: Product Spec: 03371, Manuals: 35059V1, 35059V2, 26712	

MicroNet Safety Module



MicroNet Safety Module - Bulkhead Mount, HV/LV, ind relay	8237-2492
MicroNet Safety Module - Bulkhead Mount, HV/HV, ind relay	8237-2493
MicroNet Safety Module - Bulkhead Mount, HV/LV, voted relays	8237-2496
MicroNet Safety Module - Bulkhead Mount, HV/HV, voted relays	8237-2497
MicroNet Safety Module - Panel Mount, HV/LV, ind relay	8237-2494
MicroNet Safety Module - Panel Mount, HV/HV, ind relay	8237-2495
MicroNet Safety Module - Panel Mount, HV/LV, voted relays	8237-2498
MicroNet Safety Module - Panel Mount, HV/HV, voted relays	8237-2499
*Documentation: Product Spec: 03375, Manuals: 35060V1, 35060V2, 26712	
Conversion Kits	
Old ProTech-GII models to new ProTech-GII models - Refer to PCN 06946 for details/limitations	8929-039
Old ProTechTPS models to new Input Voting ProTechTPS - Refer to PCN 06947 for details/limitations	8929-037

2. Compressor Controls and Associated Devices

Vertex Controllers

Part Number

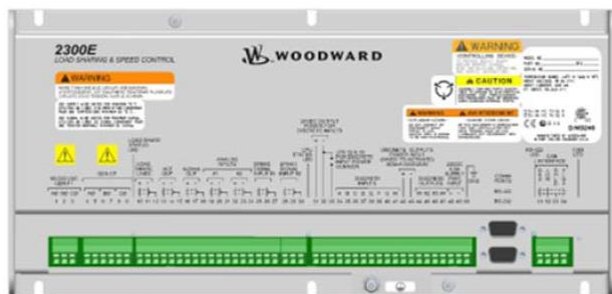


VertexDR (LVDC 18-36 VDC Standard Compliance) Compressor Control	8200-1373
VertexDR (AC/DC 88-264 VAC or 90-150 VDC Standard Compliance) Compressor Control	8200-1374
VertexDR (LVDC 18-36 VDC ATEX Compliance) Compressor Control	8200-1375
Flex500DR FTM Kit – DR FTM, Interconnection Cables *Documentation: Product Spec: 03423, Manuals: 35018V1, 35018V2, 35018V3	5541-705
Auxiliaries	
Distributed I/O Module - RTCnet RTD (100/200ohm)	8200-1100
Distributed I/O Module - RTCnet T/C (Fail High)	8200-1101
Distributed I/O Module - RTCnet AIO Loop power	8200-1103
Distributed I/O Module - RTCnet DIN (16ch)	8200-1104
Distributed I/O Module - RTCnet DOUT (16ch)	8200-1105
RemoteView Software License	8928-5311
*Documentation: FTM Configuration Instructions; Manual 26838 (page 65, Appendix)	

3. Electronic Controls

2300E Electronic Load Sharing and Speed Controls

Part Number



2300E – Hardware Only, Ordinary Locations	8273-1017
2300E – Hardware Only, Hazardous Locations	8273-1018
*Documentation: Product Spec: 03405, Manual: 26691	

Flex500 Platform

Part Number



Flex500 – Front Panel Mount, LVDC, OCP	8200-1343
Flex500 – Front Panel Mount, HVAC/DC, OCP	8200-1344
Flex500 – Front Panel Mount, LVDC, Zone-2, OCP	8200-1345
Flex500 – Back Panel Mount, LVDC	8200-1353
Flex500 – Back Panel Mount, HVAC/DC	8200-1354
Flex500 – Back Panel Mount, LVDC, Zone-2	8200-1355
*Documentation: Product Spec: 03433, Manual: 26838	

Auxiliaries

CSM - 505XT Core Source License	8447-5006
CSM - Vertex Core Source License (core software licenses allow CSMs to program and run on a Flex500 controller)	8447-5008
LinkNet-HT and RTCNet modules	Refer to Section 4.8.10
GAP, CIS, RemoteView, & NetSim software programs	Refer to Chapter 5

MicroNet™ System Modules, Cables, & Accessories



*MicroNet+ documentation: Product Spec: 03333, Manuals: 26166V1, 26166V2, 26199V3, & 26479

*MicroNetTMR documentation: Product Spec: 03363, Manuals: 26167V1, 26167V2, & 26167V3

Chassis				
Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
MicroNet Plus 8 Slot Chassis	5453-829			
MicroNet Plus 14 Slot Chassis	5453-759			
MicroNet TMR Chassis	5453-279			
MicroNet TMR Power Supply Chassis	5453-277	Connect to main chassis using 5416-977 ribbon cable and redundant 5417-293 power supply interconnect cable.		

Power Supplies				
Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
MicroNet Plus PS - 24 VDC Input	5466-1000			
MicroNet Plus PS – 110 VAC/125 VDC Input	5466-1001			
MicroNet Plus PS – 220 VAC Input	5466-1002			
MicroNet TMR PS - 24 VDC Input	5501-370			
MicroNet TMR PS - 120 VAC/VDC Input	5501-380			
MicroNet TMR PS 0 220 VAC Input	5501-381			
MicroNet TMR Kernel PS	5466-1049	Only used with CPU5200		

CPU Modules				
Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
5200CPU MicroNet TMR	5466-1347	Use with 5466-1246 RTN Expansion Rack Module, requires 5466-1049 Kernel P.S.		
5200CPU MicroNet TMR (Preferred)	5466-1247	Use with 5466-1246 RTN Expansion Rack Module; requires 5466-1049 Kernel Power Supply		
Module- MicroNet Plus P1020 CPU	5466-1511			
Module- MicroNet Plus P1020 CPU (Secured Application)	5466-1521			

Communication Modules				
Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
RTN to CAN Gateway (bulkhead mount Atlas based)	8200-1250	CAN to RTN Gateway Interface		
RTN Gateway – 10 CAN, Enhanced	8200-1252			
RTN Gateway – 10 CAN, Cyber	8200-1253			
MicroNet Plus RTC (cyber-security)	5466-1046	The only other RTN that can be used with P1020.		
Remote RTN (MicroNet Plus) (Cyber-Security) LICENSED	5466-1146	Real Time Network XCVR (cyber-security). Use with 5466-1145 style of CPU.		
Remote RTN (MicroNet Plus) - Secure Application	5466-1246	Real Time Network XCVR (cyber-security). Use with 5466-1141 & 5466-1245 CPUs.		
SIO Module, with screw posts, smart-plus	5466-5006			
SIO Module - , 4 Channel, two RS232, two configurable (RS232, RS422, RS485), Slide Locks	5466-5007	Connectors use DB-9 with slide lock posts		Table I

Input Modules				
Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
Speed Sensor - 4 channel, MPU	5466-5000		5437-523	Table J
Speed Sensor - 4 channel, MPU / Eddy Probe	5466-5001		5437-523	Table J
Speed Sensor - 4 channel, 2 MPU / 2 Prox	5466-5002		5437-523	Table J
Speed Sensor - 4 channel, 3 MPU / 1 Prox	5466-5003		5437-523	Table J
Pressure Interface - 2 Channel (4 transducers/channel)	5466-326	See Pressure Transducer Assemblies	5437-523	Table J

Output Modules				
Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
Actuator Driver - 2 channel +/- 12.25 mA Integrating or Proportional (software selectable) Outputs	5501-1428	Bi-Polar (±) Actuator Driver	5437-672	Table K
Actuator Driver - 2 channel +/- 30 mA Integrating or Proportional (software selectable) Outputs	5501-1429	Bi-Polar (+) Actuator Driver	5437-672	Table K
Actuator Driver - 2 channel +/- 60 mA Integrating or Proportional (software selectable) Outputs	5501-1430	Bi-Polar (+) Actuator Driver	5437-672	Table K
Actuator Driver - 2 channel +/- 120 mA Integrating or Proportional (software selectable) Outputs	5501-1431	Bi-Polar (+) Actuator Driver	5437-672	Table K
Actuator Driver - 2 channel +/- 245 mA Integrating or Proportional (software selectable) Outputs	5501-1432	Bi-Polar (+) Actuator Driver	5437-672	Table K
Real Time SIO - Connects to GS/LQ & EM Drivers	5503-267	Uses screw post connectors. Use with LQ Driver & EM Digital. Multidrop is not allowed with this module.		

Input & Output Modules				
Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
High Density Combo I/O - 4 Speed Inputs, 12 I/V (4-20 mA or 0-5 V) Selectable Inputs, 4 4-20 mA Outputs	5466-1105	Speed inputs have high accuracy. All 4-20mA outputs are actuator outputs. No 0-200mA outputs available. Speed inputs use low-density cable & Analog I/O use high-density cable.	For Simplex: 5437-523 (1) 5501-376 (1) For TMR: 5501-372 (1) 5501-502 (1)	Table J Table M
High Density Combo I/O - 4 Speed Inputs (Selectable MPU/PROX/EDDY), 12 Analog Inputs (Selectable 4-20 mA or 0-5 V), 4 Analog Outputs (4-20 mA 600 Ohm)	5466-1115	Speed inputs have standard accuracy (same as -316). All 4-20mA outputs are actuator outputs. No 0-200mA outputs available. Speed inputs use low-density cable & Analog I/O use high-density cable.	For Simplex: 5437-523 (1) 5501-376 (1) For TMR: 5501-372 (1) 5501-502 (1)	Table J Table M
Simplex Discrete I/O - 48 Inputs / 24 Outputs	5466-1050	Digital I/O, SW compatible only in coder 5.0x and up. Simplex FTM relay drivers 5441-693, 5441-694 FTMs are also options.	5501-325 (HV) (1) or 5501-367 (LV) (1)	Table M (2 cables)
Simplex Discrete I/O - 48 Inputs / 24 Outputs -2 (spare)	5466-1158	Digital I/O, use as a spare only. Backward compatible with older systems. SW compatible only in coder 4.06, 5.04, 6.00. Simplex FTM relay drivers 5441-693, 5441-694 FTMs are also options	5501-325 (HV) (1) or 5501-367 (LV) (1)	Table M (2 cables)
High Density Analog I/O - 24 Inputs (Selectable 4-20 mA or 0-5 V) (5mS Anti-aliasing filter on A/I ch. 23/24), 8 Outputs (4-20 mA 600 Ohms) Isolated I/O	5466-5025	2 High Density Analog/Discrete Cables	5501-376 (2) or TMR 5501-372 (2)	Table M (2 cables)
Simplex High Density Analog I/O - 24 4-20 mA Inputs (5mS Anti-aliasing filter on A/I ch. 23/24), 8	5466-5026		5501-376 (2) or TMR 5501-372 (2)	Table M (2 cables)
TMR and Dataforth High Density I/O - 24 0-5 V Inputs (5mS Anti-aliasing filter on A/I ch. 23/24), 8 4-20 mA Outputs	5466-5027	All inputs configured for voltage inputs for use with TMR or DataForth. For use with DataForth FTMs see 9097-601 Dataforth module TAB.	Dataforth: 5441-695 (2) TMR 5441-697 (2) or TMR: 5501-372 (2)	Table M (2 cables)
TMR Combo I/O - (4) MPU's, (8) 0-5 Volt Inputs, (4) 4-20 mA Outputs, (2) Prop. Actuator Outputs	5466-253		5501-365 (2)	Table J
TMR Discrete I/O - 48 Inputs / 24 Outputs	5466-1051	With 4 FTMs and 3 MicroNet cards, system I/O is 24 DI and 12 DO.	5453-276 (4)	Table M (2 cables)
TMR Discrete I/O - 48 Inputs / 24 Outputs (spare)	5466-1156	Digital I/O. Use as a spare only. Backward compatible with older	5453-276 (4)	Table M (2 cables)

		systems. SW Compatible only in coder 4.06, 5.04, 6.00. With 4 FTMs and 3 MicroNet cards, system I/O is 24 DI and 12 DO.		
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Relay FTMs

Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
Discrete Output Relay - 32 channel, 10 Amp at 28 VDC	5441-413	1 Form 'C' contact per relay		Table K
Discrete Output Relay - 16 channel, 10 Amp at 28 VDC, 2 Form 'C' contacts per relay	5441-419	2 Form 'C' contacts per relay		Table K
Discrete Output Relay - 16 channel, 10 Amp at 28 VDC	1751-6091	DIN Rail mount		Table K
Discrete I/O - 24 Inputs /12 Relay Outputs	5441-693	Purchased from Phoenix Contact. No surface mount components.		Table M
Discrete I/O - 24 Inputs /12 Relay Driver	5441-694	Purchased from Phoenix Contact. No surface mount components.		Table M
Discrete I/O - 48 Inputs – 24 VDC, 24 Discrete Outputs J1 & J2 to J3 cable connectors	5501-367	Simplex high density discrete inputs. Discrete outputs are routed from J1 & J2 to J3.		Table M
TMR Discrete I/O - 6 Inputs, 3 Relay Outputs	5453-276	Used with 5009FT and TMR applications. Uses cable 5417-019 between FTMs.		Table M

LINKnet HT Modules

Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
RTD Input - 8 Channel	8200-1200			Table R
Thermocouple Input - 8 Channel, Fail high	8200-1201			Table R
4-20 mA - 8 Inputs / 2 Outputs	8200-1202			Table R
4-20 mA - 8 Inputs / 2 Outputs, 24 VDC Loop Power	8200-1203			Table R
Discrete Input - 16 Channel	8200-1204			Table R
Discrete Output - 16 Channel	8200-1205			Table R

RTCnet Modules

Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
RTD Input - 8 Channel	8200-1100			Table R
Thermocouple Input - 8 Channel, Fail high	8200-1101			Table R
Thermocouple Input - 8 Channel, Fail high, High Accuracy	8200-1151	Use for gas turbine EGT monitoring.		Table R
4-20 mA - 8 Inputs / 2 Outputs	8200-1102			Table R

4-20 mA - 8 Inputs / 2 Outputs, 24 VDC Loop Power	8200-1103			Table R
Discrete Input - 16 Channel	8200-1104			Table R
Discrete Output - 16 Channel	8200-1105			Table R
Termination Resistor Kit	8923-1889			

Dataforth I/O

Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
Thermocouple - K-Type	1784-1028	Datforth PN: SCM7B47K-1574	5441-695	
RTD - 100 Ohm	1784-655	Datforth PN: SCM7B34-1459, European Curve	5441-695	
4-20 mA Input	1784-659	Datforth PN: SCM7BPT-1460	5441-695	
0-5 VDC Input	1784-657	Datforth PN: SCM7BPT	5441-695	

Network Switches

Description	Part Numbers	Notes	Field Termination Modules	Cable Selection Table
Ethernet - 8 Port, RJ45 Connectors	1711-1350	Phoenix Contact switch FL SWITCH SFNT 8TX, Compatible with CPU5200, Recommended for Expansion Racks		

MicroNet System Cables		
Table A. NetCon Analog Cables		
6 feet, Black	5416-346	Netcon style exposed braid
8 feet, Black	5416-347	Netcon style exposed braid
10 feet, Black	5416-348	Netcon style exposed braid
12 feet, Black	5416-349	Netcon style exposed braid
14 feet, Black	5416-350	Netcon style exposed braid
16 feet, Black	5416-351	Netcon style exposed braid

Table B. NetCon Discrete Cables		
3 feet, Gray	5416-332	
6 feet, Gray	5416-333	
8 feet, Gray	5416-334	
10 feet, Gray	5416-335	
16 feet, Gray	5416-338	

Table C. Ethernet Cat-5 Cables		
1.5 feet	5417-391	
3 feet	5417-392	
7 feet	5417-393	
10 feet	5417-394	
15 feet	5417-1243	
25 feet	5417-396	

Table D. MicroNet TMR Cables		
PS Interconnect Cable, 40"	5417-293	Used between power supply & main chassis.

Table F. Shielded RS232 Serial Port Extension Cables		
6 feet, Black	5417-026	MicroNet style-no exposed braid
8 feet, Black	5417-027	MicroNet style-no exposed braid
10 feet, Black	5417-028	MicroNet style-no exposed braid
12 feet, Black	5417-029	MicroNet style-no exposed braid
14 feet, Black	5417-030	MicroNet style-no exposed braid
16 feet, Black	5417-031	MicroNet style-no exposed braid
18 feet, Black	5417-032	MicroNet style-no exposed braid
20 feet, Black	5417-033	MicroNet style-no exposed braid
22 feet, Black	5417-034	MicroNet style-no exposed braid

Table G. MicroNet Low Density Analog Cables		
3 feet, Gray	5417-037	
6 feet, Gray	5417-038	
8 feet, Gray	5417-039	
10 feet, Gray	5417-040	

12 feet, Gray	5417-041	
14 feet, Gray	5417-042	
16 feet, Gray	5417-043	
18 feet, Gray	5417-044	
20 feet, Gray	5417-045	
22 feet, Gray	5417-046	
24 feet, Gray	5417-047	
26 feet, Gray	5417-048	
40 feet, Gray	5417-049	

Table H. MicroNet Low Density Discrete Cables		
6 feet, Gray	5417-171	
8 feet, Gray	5417-172	
10 feet, Gray	5417-173	
12 feet, Gray	5417-174	
14 feet, Gray	5417-175	
16 feet, Gray	5417-176	
18 feet, Gray	5417-177	
20 feet, Gray	5417-178	

Table I. 541 Fiber Optic Cables ST Type Bayonet		
NETWORK TEE, 7/8' M/F BUS, F DROP	1635-1463	
NETWORK TERMINATOR, MALE 121 OHM	1635-1464	
NETWORK TERMINATOR, FEMALE 121 OHM	1635-1465	
THICK TRUNK CABLE (3M)	5417-1113	0.41 Diameter
THICK TRUNK CABLE (6M)	5417-1115	0.41 Diameter
THICK DROP, 7/8' MALE TO PIGTAIL, (0.3M)	5417-1116	
THICK DROP, 7/8' MALE TO PIGTAIL, (1M)	5417-1117	
THICK DROP, 7/8' MALE TO PIGTAIL, (3M)	5417-1119	
THICK DROP, 7/8" MALE TO PIGTAIL, (6M)	5417-1281	
MICRONET DROP, M12 FEMALE TO 7/8' MALE, (0.5M)	5417-1120	0.28 Diameter
MICRONET DROP, 7/8' MALE TO M12 FEMALE, (1M)	5417-1127	0.28 Diameter
MICRONET DROP, 7/8' MALE TO M12 FEMALE, (2M)	5417-1128	0.28 Diameter
MICRONET DROP, 7/8" MALE TO M12 FEMALE, (3M)	5417-1245	0.28 Diameter
MID DROP, 7/8' MALE TO PIGTAIL, (1M)	5417-1142	
MID DROP, 7/8' MALE TO PIGTAIL, (2M)	5417-1143	
MID TRUNK CABLE (0.5M)	5417-1145	0.33 Diameter
MID TRUNK CABLE (6M)	5417-1150	0.33 Diameter

MicroNet TMR Hardware Kits

Part Number



MicroNet TMR Hardware Kit with 4565-1115, 120V AC/DC	8262-1145
MicroNet TMR Hardware Kit with 4565-1115, 220V AC	8262-1146
MicroNet TMR Hardware Kit with 4565-1115, 24 VDC	8262-1147
MicroNet TMR Hardware Kit with 4565-253, 120V AC/DC	8262-1148
MicroNet TMR Hardware Kit with 4565-253, 220V AC	8262-1149
MicroNet TMR Hardware Kit with 4565-253, 24 VDC	8262-1150

MicroNet Plus Hardware Kits

Part Number



Standard MicroNet+ Kit, 8-Slot, 2 120 V AC/DC PS, Relay Drivers, Speed Combo Module	8262-3183
Standard MicroNet+ Kit, 8-Slot, 2 120 V AC/DC PS, Relay Drivers, Analog Combo Module	8262-3191
Standard MicroNet+ Kit, 8-Slot, 2 220 VAC PS, Relay Drivers	8262-3184
Standard MicroNet+ Kit, 8-Slot, 2 24 VDC PS, Relay Drivers	8262-3185
Standard MicroNet+ Kit, 8-Slot, 2 120 V AC/DC PS, Relays	8262-3180
Standard MicroNet+ Kit, 8-Slot, 2 220 VAC PS, Relays	8262-3181
Standard MicroNet+ Kit, 8-Slot, 2 24 VDC PS, Relays	8262-3182
*Documentation: Product Spec: 03333, Manuals: 26166V1, 26166V2, 26479	

Magnetic Pickups



Description	Thread	Thread Length	DC Resistance	Ratings	Compatible Connector	Part Number
MPU-70 VPP	0.625-18	1.4"	210 ohms	None	1630-755	202816
MPU-50 VPP	0.625-18	2.0"	200 ohms	None	1630-755	1680-613
MPU-60 VPP	0.625-18	2.5"	250 ohms	None	1630-755	1680-622
MPU-60 VPP	0.625-18	4.5"	250 ohms	None	1630-755	1680-631
MPU-60 VPP	M 16x1.5	3.5"	260 ohms	CSA Div1&Div2	None-3 10" 18awg wires	1680-637
MPU-60 VPP	M 16x1.5	3"	250 ohms	None	1630-755	1680-649
MPU-54 VPP	0.625-18	1.8"	180 ohms	CSA&ATEX – Div1	None-3 10" 18awg wires	1680-2004
MPU-54 VPP	0.625-18	4.0"	200 ohms	CSA&ATEX – Div1	None-3 10" 18awg wires	1680-2005
MPU-54 VPP	0.625-18	2.75"	200 ohms	CSA&ATEX – Div1	None-3 10" 18awg wires	1680-2006
MPU-54 VPP	0.625-18	6.0"	200 ohms	CSA&ATEX – Div1	None-3 10" 18awg wires	1680-2007
MPU-54 VPP	0.625-18	1.8"	180 ohms	CSA&ATEX – Div1	None-3 10" 18awg wires	1680-2008
MPU-54 VPP	0.625-18	3.0"	180 ohms	CSA&ATEX – Div1	None-3 10" 18awg wires	1680-2009
MPU-54 VPP	0.625-18	1.8"	180 ohms	CSA&ATEX – Div1	None-3 27" 18awg wires	1680-2017
MPU Kit (1680-613) MPU & Connector	0.625-18	2.0	200 ohms	None	N/A	5430-915
MPU Kit (202816) MPU & Connector	0.625-18	2.5"	250 ohms	None	N/A	5430-929
MPU Kit (1680-622) MPU & Connector	0.625-18	2.5"	250 ohms	None	N/A	5430-929
MPU Kit (1680-631) MPU & Connector	0.625-18	4.5"	250 ohms	None	N/A	5430-933
MPU Kit (1680-649) MPU & Connector	0.625-18	4.5"	250 ohms	None	N/A	5430-951
MPU SIL-3 Ex- Proof	0.750-20	1.87"		SIL3 Ex Proof		1680-2004.SIL
MPU SIL-3 Ex- Proof	0.625-18	4.0"		SIL3 Ex Proof		1680-2005.SIL
MPU SIL-3 Ex- Proof	0.625-18	2.75"		SIL3 Ex Proof		1680-2006.SIL
MPU SIL-3 Ex- Proof	0.625-18	6.0"		SIL3 Ex Proof		1680-2007.SIL

MPU SIL-3 Ex-Proof	0.625-18	1.8"		SIL3 Ex Proof	1680-2008.SIL
MPU SIL-3 Ex-Proof	0.750-20	1.867"		SIL3 Ex Proof	1680-2017.SIL

Active Proximity Probes

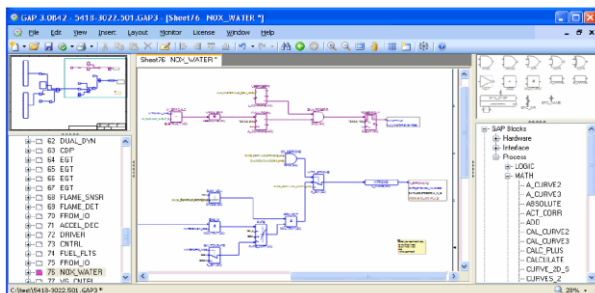
Description	Thread	Thread Length	DC Resistance	Ratings	Compatible Connector	Part Number
Active Probe-5-24V Pwr	0.625-18	4.0"		None	1631-002, 1631-612	1680-986
Active Probe-7-30V Pwr	M 16x1.5	4.0"		None	1630-249, 1631-002	1689-1114

4. Software Licenses

Woodward's Graphical Application Program (GAP™) is used to custom program Woodward's MicroNet™ and Atlas controllers. The GAP install software may be downloaded from the Woodward website for free and can be copied multiple times but does not function unless a software license is purchased for each computer (seat) that it is to be used on. Additional GAP programmer platforms include Flex***, LECM, 2301E, 723, 733, 828, etc.

Each listed seat license price below includes one seat license (authorization serial number), which can only be used on one computer.

GAP Software Programs



GAP Software Programs & Kits	Part Number
GAP Programmer License	8928-810
GAP 4.0 Install File	9927-2662
GAP 3.14 Install File	9927-1591

- This seat license is used to authorize the GAP on any one computer.
- The **GAP Install Program** must be downloaded from Woodward's website before the received program authorization serial number can be used to authorize its use on that computer.
- An un-activated version of the **Monitor-GAP service tool** program is also installed on the target computer during a GAP program install. This Monitor-GAP service tool program can then be activated/authorized by purchasing a Monitor-GAP license (refer to information listed below).
- Woodward's Monitor-GAP service tool program is also installed during GAP programmer installation program and can be authorized and utilized with this program.

GAP-Read-Only Programmer License	(none needed)
GAP-Demo Programmer License	(none needed)

- No license is necessary for the **GAP-Read-Only** software program functionality. When a GAP Programmer program is installed on a computer without an authorization serial number, the program functions as a **Read Only GAP program** or as a **Demo GAP program**.

The **GAP Programmer Install Program** must first be downloaded from Woodward's website onto the desired computer, before it can be used as a Read-Only or Demo based GAP program.

*Documentation: Product Spec: 03377, Manuals: Included in GAP Program

GAP Software Programs & Kits	Part Number
Monitor-GAP License	8928-5007
Monitor-GAP 4.X License	8928-5361
Editor-GAP 4.X License	8928-5359

- Optionally, the Monitor-GAP service tool program can be authorized and utilized with this program functioning in its Read-Only or Demo modes of operation.
- This license is used to authorize the Monitor-GAP software service tool, and only includes a program authorization serial number for one computer (seat).

- Monitor GAP is a licensed software service tool that allows GAP users to view real-time values in GAP application programs when connected to a control or running NetSim™ (nVe) tools. Monitor GAP works in parallel with the GAP graphical display and superimposes the actual run-time values into that display environment.

Old GAP Programs (3.03 and older) CD Install Kits

9927-1591

- Contact Woodward's technical assistance group for part number availability of Old GAP programs, and associated turbine package models.

Latest ITCC Software Cores

Core Name	Description	WW PN
ASC1 (Anti Surge Control)	ASC1 Core Software	5418-3675
ASC2 (Anti Surge Control)	ASC2 Core Software	5418-3676
ASC3 (Anti Surge Control)	ASC3 Core Software	5418-3677
ASC4 (Anti Surge Control)	ASC4 Core Software	5418-3678
STC (Steam Turbine Core)	STCXT Core Software	10-027-206
PFC (Performance Control Core)	PFC Core Software	10-028-721
LSC (Load Sharing Control)	LSC Core Software	10-024-831

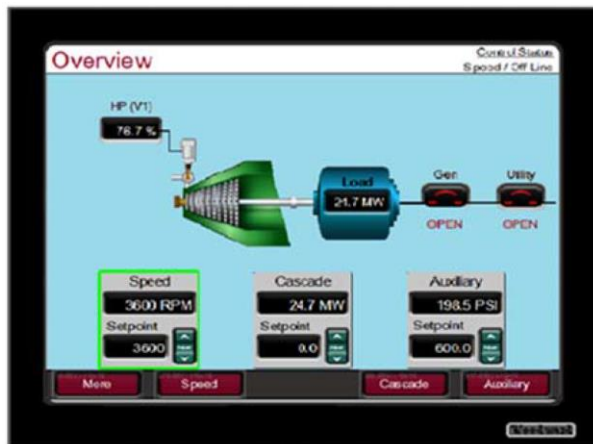
Graphical User Interface Development and Viewing Program Licenses CIS (Control Interface Studio) GUI Development Software Program

CIS Yearly Subscription License

1796-3131

- This subscription license is used to authorize the CIS program on any one computer for a period of one year.
- The CIS program is used to create to create GUIs for Flex500 or MicroNet platforms.
- Contact your Woodward customer service representative to purchase a subscription.
- Upon purchase of a CIS subscription license, the user will receive an email notification of Qt account creation and then will be granted 72 hours access to Qt's web portal to upload/install Woodward's CIS program and related component library.
- Subscription & Install Kit includes:
 - Woodward's standard component kit (used by the 505 controller).
 - Example application program, which includes basic screens a typical user would need to create a GUI program similar to the 505 controllers.

RemoteView Operator Control Panel Program



RemoteView License

8928-5311

- This license is used to authorize the RemoteView program to function continuously on any one computer.
- The RemoteView program allows users to view CIS based programs on computers or touch panels used with Flex500 or MicroNet platforms.
- Contact your Woodward customer service representative to purchase a license.
- The RemoteView software install program can be obtained/downloaded from Woodward's website.

*Documentation: Product Spec: 03424, Manuals: Included in RemoteView Program.

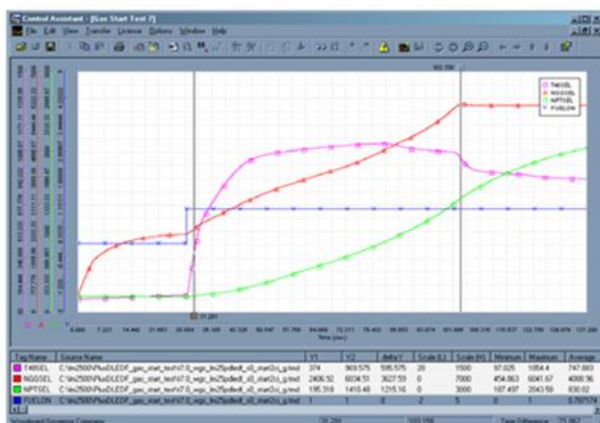
iFix HMI Software License**Part Number**

Proficy iFix Unlimited Tag,1000 PT Hist. M5 USB Key	1796-3132
Proficy iFix Unlimited Tag,1000PT Hist. Software Advantage License	1796-3145

- These licenses are used to authorize the Proficy iFix HMI program to function continuously on HMI computer.
- Contact your Woodward customer service representative to purchase a license.

Software Service Tool Programs & Kits

Part Number



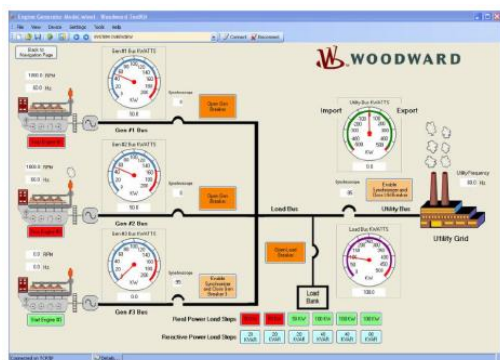
Control Assistant Software License

8928-5014

Control Assistant Install File

9927-1237

- This license is used to authorize the Control Assistant Software tool on one computer (seat).
- The Control Assistant program is used to view high-speed datalog files created in **Atlas**, **MicroNet**, and **MicroNet TMR** controllers.
- Control Assistant provides live parameter monitoring, tuning, trending, and off line trending (datalogs).



ToolKit Developer License

8928-5016

This license is used to authorize the Developer functionality in ToolKit, and only includes a program authorization serial number for one computer (seat).

- ToolKit is a licensed software development program used to create Service Tools and Service and Configuration tools for Woodward electronic controllers 2300, 723, 733, LECM, Atlas, and MicroNet via Woodward's Servlink protocol over RS-232/-422/-485 serial, CANOpen, XCP, Ethernet.
- Upon purchasing the developer license, you will be given a serial number. It is important that you keep this number, as it is your proof that you own the license.

AppManager Datalog Retrieval License - Enterprise

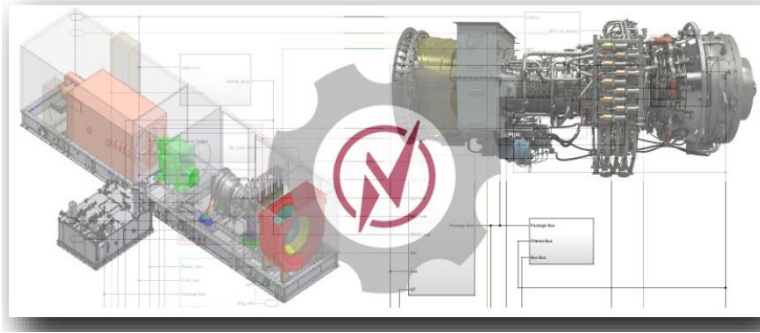
8928-5009

This license is used to authorize the **AppManager program's datalog retrieval function for four or more controls**, and only includes a program authorization serial number for one computer (seat).

- Datalog retrieval function for 1-3 controls is included in AppManager without a fee.
- The AppManager program's datalog retrieval function is embedded in **AppManager version 2.2 and higher install programs**.
- The **AppManager install program** must be downloaded from Woodward's website and onto the desired computer before the received program authorization serial number can be used to authorize its use on that computer.
- The datalog retrieval functionality performs automatic archiving of datalog files generated on one or more controls connected by a network. The collected files are given unique names based upon the original file name, the last time of modification, and the source control.

NetSim Simulation Licenses

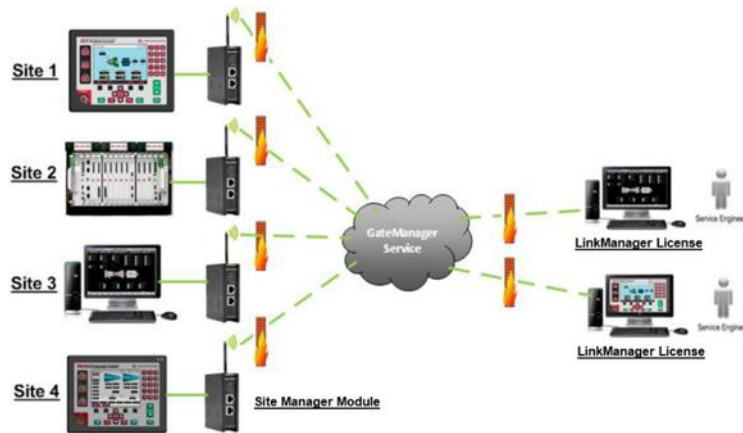
Part Number



NetSim nVe Nodes Only License	8928-5363
<ul style="list-style-type: none"> This seat license is used to authorize a NetSim Basic Software program, and only includes a program authorization serial number for one computer (seat). The nVe Control Executive program (PN 9928-1363) must first be downloaded from Woodward's website onto the desired computer before the received program authorization serial number can be used to authorize its use on that computer. NetSim nVe Nodes Only license is a simulation service tool that allows GAP application programs to be run and tested on a computer before they are downloaded into the control. With this license, once a GAP application program has been created it can then be executed to simulate the open-loop control operation (internal recycler mode). Training is available to utilize GAP-to-GAP modeling techniques to achieve closed-loop control operations with NetSim nVe. The supported hardware platforms are MicroNet controllers. Supports GAP programmed hardware platforms. The NetSim basic program is only compatible with GAP programs using coder 2.08 and higher coder programs. Contact the Woodward technical assistance group for training. 	
NetSim nVe Advanced License	8928-5364
<ul style="list-style-type: none"> This seat license is used to authorize a NetSim nVe Advanced Software program, and only includes a program authorization serial number for one computer (seat). The NetSim nVe Control Executive program (PN 9928-1363) must first be downloaded from Woodward's website onto the desired computer before the received program authorization serial number can be used to authorize its use on that computer. The NetSim nVe Advanced Program is a simulation service tool that allows GAP application programs to be run and tested against turbine models on a computer before they are downloaded into the control. With NetSim nVe Advanced, once a GAP application program has been created it can then be executed against a simulated turbine package to simulate the closed-loop control operation. Supports GAP-programmed hardware platforms. 	
NetSim nVe Annual Subscription-based Licenses	
All tools (App Manager, CA, GAP4 Editor, Monitor) software annual license, no nVe	8928-5387
Full package (all in 8928-5387) with nVe	8928-5390
Full package, 14 day trial	8928-5388

Remote Access Program

Part Number



Site Manager Module (SMM-4G)	1711-1418
LinkManager License	8928-5347
First Year GateManager Setup Fee (1-5 LinkMgr licenses)	8928-5389
Yearly GateManager Support Fee (based on # of LinkMgr licenses)	8928-5348

5. Electro-Hydraulic Governors & Actuators

TG Turbine Governors

Preferred Item Number



TG13 Screw SS, 2400 rpm	9904-814
TG13 Screw SS, 2400 rpm	9904-815
TG13 Screw SS, 2400 rpm	9904-816
TG13L Lever, 4000 rpm	9904-817
TG13L Lever, 4000 rpm	9904-818
TG13 Lever SS, 4000 rpm	9904-819
TG13 Screw SS, 4000 rpm	9904-820
TG13 Screw SS, 4000 rpm	9904-821
TG13 Screw SS, 6000 rpm	9904-822
TG13 Screw SS, 6000 rpm	9904-823
TG13 Lever SS, 2400 rpm	9904-824
TG13 Lever, 6000 rpm	9904-825
TG13 Lever SS, 6000 rpm	9904-826
TG13 Screw, 2400 rpm	9904-827
TG13 Screw, 4000 rpm	9904-828
TG17 Screw SS, 2400 rpm	9904-800
TG17 Screw SS, 2400 rpm	9904-801
TG17 Screw SS, 2400 rpm	9904-802
TG17 Screw SS, 4000 rpm	9904-803
TG17 Screw SS, 4000 rpm	9904-804
TG17 Screw SS, 4000 rpm	9904-805
TG17 Screw SS, 6000 rpm	9904-806
TG17 Screw SS, 6000 rpm	9904-807
TG17 Lever SS, 2400 rpm	9904-808
TG17 Lever SS, 2400 rpm	9904-809
TG17 Lever SS, 4000 rpm	9904-810
TG17 Lever SS, 4000 rpm	9904-811
TG17 Lever SS, 6000 rpm	9904-812
TG17 Lever SS, 6000 rpm	9904-813

TG611

Part Number



TG to TG611 Conversion Kit	8516-174
TG611-13, Screw, 2400 rpm, CCW, ATEX, w/ OTD	8516-175
TG611-13, Screw, 2400 rpm, CW, ATEX, w/ OTD	8516-176
TG611-13, Screw, 2400 rpm, CCW, ATEX, w/ OTD	8516-178
TG611-13, Screw, 4000 rpm, CCW, ATEX, w/ OTD	8516-179
TG611-13, Screw, 4000 rpm, CW, ATEX, w/ OTD	8516-180
TG611-13, Screw, 4000 rpm, CW, ATEX, w/ OTD	8516-181
TG611-13, Screw, 4000 rpm, CCW, ATEX, w/ OTD	8516-182
TG611-13, Screw, 6000 rpm, CCW, ATEX, w/ OTD	8516-183
TG611-13, Screw, 6000 rpm, CW, ATEX, w/ OTD	8516-184
TG611-17, Screw, 2400 rpm, CCW, ATEX, w/ OTD	8516-185
TG611-17, Screw, 2400 rpm, CW, ATEX, w/ OTD	8516-186
TG611-17, Screw, 4000 rpm, CCW, ATEX, w/ OTD	8516-187
TG611-17, Screw, 4000 rpm, CW, ATEX, w/ OTD	8516-188
TG611-17, Screw, 4000 rpm, ATEX, w/OTD	8516-189
TG611-17, Screw, 6000 rpm, CCW, ATEX, w/ OTD	8516-190
TG611-17, Screw, 6000 rpm, CW, ATEX, w/ OTD	8516-191
*Documentation: Product Spec: 04038, Manual: 04042	

TGE Turbine Actuators

Part Number



TGE13, 4000 rpm	9904-111
TGE17, 2400 rpm	9904-113
TGE17, 4000 rpm	9904-114
TGE17, 6000 rpm	9904-115

VariStroke Actuators



VariStroke Selection Procedure:

1. Create VariStroke model number by using information from Figure 5-1 below.
2. Use the VariStroke Sizing Tool as necessary to select the correct size cylinder for the application. The VariStroke Sizing Tool is available from FTC\serv10\saleskit\Actuation\VariStroke directory or via e-business.
3. Use the developed VariStroke model number from step #1 and the below VariStroke part number table to select the correct internal VariStroke part number. Note that the estimated delivery time for part numbers that already exist is 8-10 weeks.
4. If an internal VariStroke part number does not exist for the required model number, contact Levi Smith or Rich Kamphaus to have a part number created. Note that the estimated delivery time for part numbers that do not yet exist in the below table is 12+ weeks.

- *Documentation – VS-I: Product Spec: 03397, Manual: 26727
- *Documentation – VS-GI: Product Spec: 03364, Manual: 35148
- *Documentation – VS-DX: Product Spec: 03463, Manual: 35132
- *Documentation – VS-II: Product Spec: 03378, Manual: 26740

Double Acting VSI - Model Number Information

Revision 9 | 25/Nov/2019

VariStroke Product Line
Code: V
Description: VS I / Port 3x .453"

Valve Size
Code: XX
Description: Integrated¹
Remote²

Configuration
Code: X
Description: Remote²

Action
Code: X
Description: Remote²

Bore
Code: XX
Description: Remote²

Stroke
Code: XX
Description: Remote²

Rod End
Code: X
Description: Remote²

Mounting Option
Code: X
Description: Remote²

Fail-Safe Direction
Code: X
Description: Remote²

Compliance
Code: X
Description: Remote²

Dump Valve
Code: XX
Description: Remote²

Seals
Code: XX
Description: Remote²

Notes:

- 1) Servo installed directly on the hydraulic cylinder thru special pattern holes. Solution dedicated to work with WWD cylinders.
- 2) Servo can be connected to any hydraulic cylinder. Hydraulic connections S&E Code 61 Flange.
- 3) Select this option in case of servo ordering (no hydraulic cylinder).

RETRACT
Fail-Safe direction

EXTEND
Fail-Safe direction

Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
10	101.6mm (4in) / Rod Dia 1.75"	07	76.2mm (3in)	10	101.6mm (4in)	07	76.2mm (3in)	10	101.6mm (4in)
12	127mm (5in) / Rod Dia 1.75"	10	101.6mm (4in)	15	152.4mm (6in)	10	101.6mm (4in)	15	152.4mm (6in)
15	152.4mm (6in) / Rod Dia 2.50"	15	152.4mm (6in)	20	203.2mm (8in)	15	152.4mm (6in)	20	203.2mm (8in)
20	203.2mm (8in) / Rod Dia 3.50"	20	203.2mm (8in)	25	254.0mm (10in)	20	203.2mm (8in)	25	254.0mm (10in)
25	254.0mm (10in) / Rod Dia 4.50"	25	254.0mm (10in)	30	304.8mm (12in)	25	254.0mm (10in)	30	304.8mm (12in)
Blank	No Hydraulic Cylinder	Blank	No Hydraulic Cylinder	Blank	No Hydraulic Cylinder	Blank	No Hydraulic Cylinder	Blank	No Hydraulic Cylinder

Example Model Number = Servo with Cylinder and without Dump Valve

V45RS-1520-FUR1

Example Model Number = Servo with Cylinder and Dump Valve

V45TD-2030-MUE2-DV L

Example Model Number = Servo only

V45RD-R1

Spring

Bore [in]	Stroke [in]	Spring force [lbf]	Spring			
			S	T	U	V
4	4	MIN	56	114	224	-
		MAX	112	226	478	-
6	3	MIN	108	235	520	-
		MAX	216	471	1040	-
8	3	MIN	108	235	520	-
		MAX	216	471	1040	-
10	4	MIN	276	529	1052	1946
		MAX	510	1057	2104	4046
10	4	MIN	242	528	1052	2023
		MAX	544	1058	2104	4047
10	4	MIN	354	642	1312	2744
		MAX	708	1286	2624	5488

Figure 5-1. VariStroke and VariStroke II Model Number Information

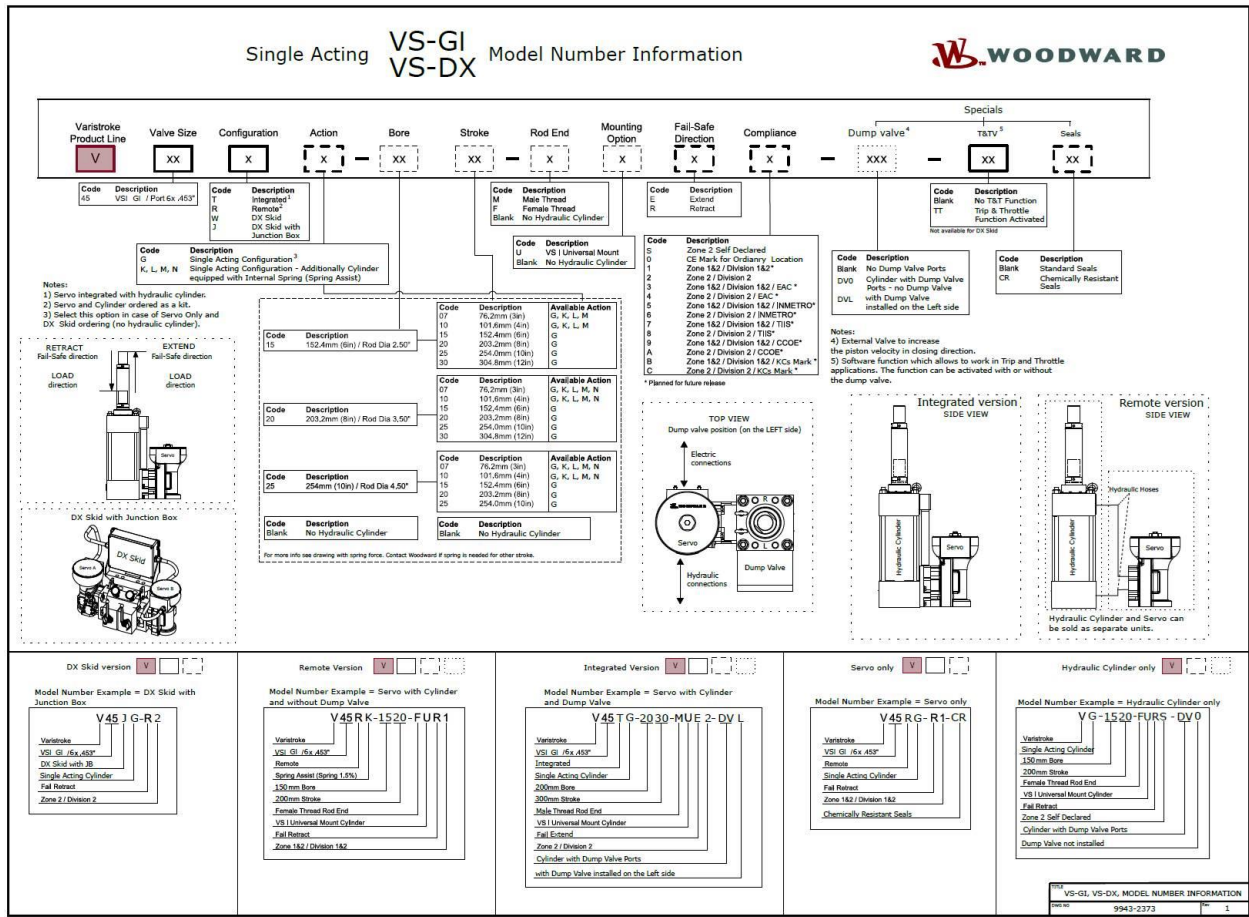


Figure 5-2. Single Acting VariStroke VSI G1 Model Number Information

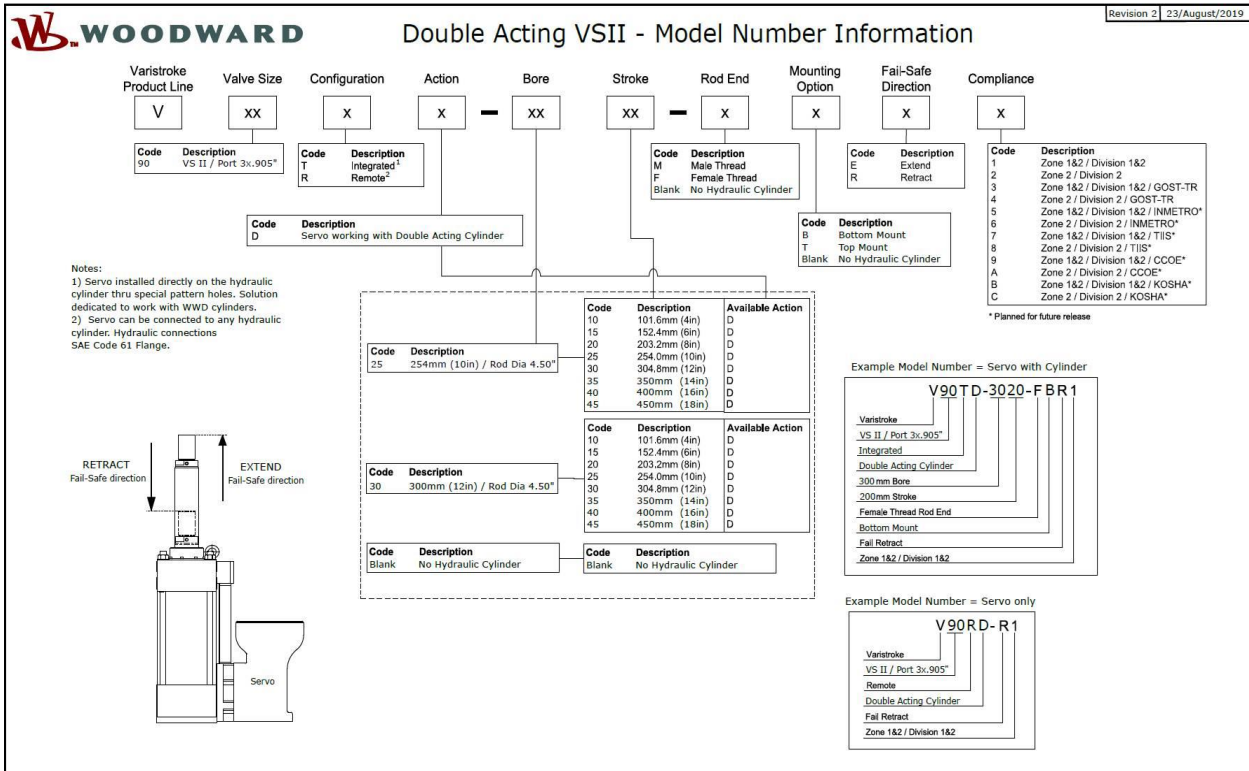


Figure 5-3. Double Acting VariStroke VSII Model Number Information

Table O. Currently Active VS-I, GI, DX Actuator Models

Currently Active VariStroke-1 & GI Models				
Description	External Model Number	Operating Action	Cylinder Return	Part Number
ACTUATOR	V45TD-1007-MUEXM-X-S-X	Double Acting	None	9907-1726
ACTUATOR	V45TD-1015-MUEXM-X-S-X	Double Acting	None	9907-1730
ACTUATOR	V45TD-1015-MURXM-X-S-X	Double Acting	None	9907-1728
ACTUATOR	V45TD-1207-FUEXM-X-S-X	Double Acting	None	9907-1756
ACTUATOR	V45TD-1207-MUEXM-X-S-X	Double Acting	None	9907-1748
ACTUATOR	V45TD-1210-MUEXM-X-S-X	Double Acting	None	9907-1749
ACTUATOR	V45TD-1210-MURXM-X-S-X	Double Acting	None	9907-1753
ACTUATOR	V45TD-1215-FUEXM-X-S-X	Double Acting	None	9907-1758
ACTUATOR	V45TD-1505-MUEXM-X-S-X	Double Acting	None	9907-1488
ACTUATOR	V45TD-1505-MURXM-X-S-X	Double Acting	None	9907-1475
ACTUATOR	V45TD-1507-FUEXM-X-S-X	Double Acting	None	9907-1493
ACTUATOR	V45TD-1507-MUEXM-X-S-X	Double Acting	None	9907-1491
ACTUATOR	V45TD-1507-MURXM-X-S-X	Double Acting	None	9907-1492
ACTUATOR	V45TD-1510-FUEXM-X-C-X	Double Acting	None	9907-2022
ACTUATOR	V45TD-1510-FUEXM-X-S-X	Double Acting	None	9907-1374
ACTUATOR	V45TD-1515-FUE-G1XM-X-	Double Acting	None	9907-1548
ACTUATOR	V45TD-1515-FURXM-X-S-X	Double Acting	None	9907-1375
ACTUATOR	V45TD-1525-MURXM-X-S-X	Double Acting	None	9907-1380
ACTUATOR	V45TD-1530-FURXM-X-S-X	Double Acting	None	9907-1386
ACTUATOR	V45TD-1530-MURXM-X-S-X	Double Acting	None	9907-1384
ACTUATOR	V45TD-2005-MURXM-X-S-X	Double Acting	None	9907-2323
ACTUATOR	V45TD-2015-FUE-G1XM-X-	Double Acting	None	9907-1549
ACTUATOR	V45TD-2025-FURXM-X-S-X	Double Acting	None	9907-1370
ACTUATOR	V45TD-2025-MUE-DV0, FA	Double Acting	None	9907-1993
ACTUATOR	V45TD-2030-FURXM-X-S-X	Double Acting	None	9907-1373
ACTUATOR	V45TD-2030-MUEXM-X-S-X	Double Acting	None	9907-1371
ACTUATOR	V45TD-2520-FURXM-X-C-X	Double Acting	None	9907-2023
ACTUATOR	V45TS-1510-FUEXM-X-S-X	Double Acting	108 - 216	9907-1687
ACTUATOR	V45TS-1510-MUEXM-X-S-X	Double Acting	108 - 216	9907-1681
ACTUATOR	V45TS-2007-MURXM-X-S-X	Double Acting	262 - 524	9907-1663
ACTUATOR	V45TS-2010-FUEXM-X-S-X	Double Acting	262 - 524	9907-1659
ACTUATOR	V45TS-2010-FURXM-X-S-X	Double Acting	262 - 524	9907-1674
ACTUATOR	V45TS-2010-MUEXM-X-S-X	Double Acting	262 - 524	9907-1652
ACTUATOR	V45TS-2010-MURXM-X-S-X	Double Acting	262 - 524	9907-1667
ACTUATOR	V45TS-2510-FUEXM-X-S-X	Double Acting	354 - 708	9907-1634
ACTUATOR	V45TS-2510-MUEXM-X-S-X	Double Acting	354 - 708	9907-1630
ACTUATOR	V45TS-2515-MUEXM-X-S-X	Double Acting	354 - 708	9907-1999
ACTUATOR	V45TT-1010-MUEXM-X-S-X	Double Acting	114 - 226	9907-1610
ACTUATOR	V45TT-1507-FUEXM-X-S-X	Double Acting	235 - 471	9907-1685
ACTUATOR	V45TT-1507-MUEXM-X-S-X	Double Acting	235 - 471	9907-1679
ACTUATOR	V45TT-2007-FUEXM-X-S-X	Double Acting	528 - 1057	9907-1656
ACTUATOR	V45TT-2007-FURXM-X-S-X	Double Acting	528 - 1057	9907-1671

ACTUATOR	V45TT-2007-MUEXM-X-S-X	Double Acting	528 - 1057	9907-1602
ACTUATOR	V45TT-2010-FURXM-X-S-X	Double Acting	528 - 1057	9907-1675
ACTUATOR	V45TT-2510-MUEXM-X-S-X	Double Acting	642 - 1286	9907-1631
ACTUATOR	V45TT-2515-MUEXM-X-S-X	Double Acting	642 - 1286	9907-2013
ACTUATOR	V45TT-2515-MURXM-X-S-X	Double Acting	642 - 1286	9907-2017
ACTUATOR	V45TU-1010-MURXM-X-S-X	Double Acting	224 - 478	9907-1615
ACTUATOR	V45TU-1510-MURXM-X-S-X	Double Acting	520 - 1040	9907-1695
ACTUATOR	V45TU-1515-MURXM-X-S-X	Double Acting	520 - 1040	9907-2140
ACTUATOR	V45TU-2007-FURXM-X-S-X	Double Acting	1052 - 2104	9907-1672
ACTUATOR	V45TU-2007-MUEXM-X-S-X	Double Acting	1052 - 2104	9907-1598
ACTUATOR	V45TU-2010-FURXM-X-S-X	Double Acting	1052 - 2104	9907-1676
ACTUATOR	V45TU-2010-MURXM-X-S-X	Double Acting	1052 - 2104	9907-1669
ACTUATOR	V45TU-2015-MURXM-X-S-X	Double Acting	1004 - 2104	9907-1989
ACTUATOR	V45TU-2510-FURXM-X-S-X	Double Acting	1312 - 2623	9907-1644
ACTUATOR	V45TV-2010-FURXM-X-S-X	Double Acting	2023 - 4046	9907-1677
ACTUATOR w/REMOTE SERVO	V45RD-1505-FUEXM-X-S-X	Double Acting	None	9907-1486
ACTUATOR w/REMOTE SERVO	V45RD-1505-MUEXM-X-S-X	Double Acting	None	9907-1484
ACTUATOR w/REMOTE SERVO	V45RD-1507-MUEXM-X-S-X	Double Acting	None	9907-1480
ACTUATOR w/REMOTE SERVO	V45RD-1510-FURXM-X-S-X	Double Acting	None	9907-1428
ACTUATOR w/REMOTE SERVO	V45RD-1510-MUEXM-X-S-X	Double Acting	None	9907-1425
ACTUATOR w/REMOTE SERVO	V45RD-1515-FUEXM-X-S-X	Double Acting	None	9907-1431
ACTUATOR w/REMOTE SERVO	V45RD-1515-FURXM-X-S-X	Double Acting	None	9907-1432
ACTUATOR w/REMOTE SERVO	V45RD-1515-MUEXM-X-S-X	Double Acting	None	9907-1429
ACTUATOR w/REMOTE SERVO	V45RD-1515-MURXM-X-S-X	Double Acting	None	9907-1430
ACTUATOR w/REMOTE SERVO	V45RD-2005-MURXM-X-S-X	Double Acting	None	9907-2322
ACTUATOR w/REMOTE SERVO	V45RD-2015-FUEXM-X-S-X	Double Acting	None	9907-1391
ACTUATOR w/REMOTE SERVO	V45RD-2015-MURXM-X-S-X	Double Acting	None	9907-1390
ACTUATOR w/REMOTE SERVO	V45RD-2020-MURXM-X-S-X	Double Acting	None	9907-1394
ACTUATOR w/REMOTE SERVO	V45RD-2025-MUEXM-X-S-X	Double Acting	None	9907-1397

ACTUATOR w/REMOTE SERVO	V45RD-2510-MUEXM-X-S-X	Double Acting	None	9907-1405
ACTUATOR w/REMOTE SERVO	V45RD-2510-MURXM-X-S-X	Double Acting	None	9907-1406
ACTUATOR w/REMOTE SERVO	V45RD-2515-FUEXM-X-S-X	Double Acting	None	9907-1411
ACTUATOR w/REMOTE SERVO	V45RD-2515-MURXM-X-S-X	Double Acting	None	9907-1410
ACTUATOR w/REMOTE SERVO	V45RD-2525-FURXM-X-S-X	Double Acting	None	9907-1420
ACTUATOR w/REMOTE SERVO	V45RD-2530-MURXM-X-S-X	Double Acting	None	9907-1422
ACTUATOR w/REMOTE SERVO	V45RT-2007-FUEXM-X-S-X	Double Acting	528 - 1057	9907-1574
ACTUATOR w/REMOTE SERVO	V45RV-2510-FUEXM-X-S-X	Double Acting	2744 - 5488	9907-1557
POWER CYLINDER	VXXRD-2530-MUEXM-X-S-X	Double Acting	None	9907-2146
POWER CYLINDER	VXXRN-2530-MURXM-X-S-B	Single Acting	2550 - 5488	9907-2367
ACTUATOR	V45TG-1507-MUEXM-D-S-X	Single Acting	None	9907-2212
ACTUATOR	V45TG-1507-MUEXM-T-S-X	Single Acting	None	9907-2301
ACTUATOR	V45TG-1520-MURXM-P-S-X	Single Acting	None	9907-2236
ACTUATOR	V45TG-1525-MURXM-D-S-X	Single Acting	None	9907-2229
ACTUATOR	V45TG-1530-MURXM-X-S-X	Single Acting	None	9907-2238
ACTUATOR	V45TM-1507-MUEXM-T-S-X	Single Acting	520 - 1040	9907-2304
ACTUATOR	V45TM-1507-MUEXM-W-S-X	Single Acting	520 - 1040	9907-2306
ACTUATOR	V45TM-1510-MUEXM-X-S-X	Single Acting	520 - 1040	9907-2224

Table P. VS-I, GI, DX Servos

Currently Active VariStroke Servos			
Description	External Model Number	Operating Action	Part Number
SERVO	V45V-EXM-X-S-X	Double Acting	9907-1256
SERVO	V45V-RXM-X-S-X	Double Acting	9907-1333
SERVO	V45V-E-CRXM-X-S-X	Double Acting	9907-2113
SERVO	V45V-R-CRXM-X-S-X	Double Acting	9907-2112
SERVO	V45RG-EX-X-S-X	Single Acting	9907-2117
SERVO	V45RG-RX-X-S-X	Single Acting	9907-2116
SERVO	V45RG-EX-T-S-X, - TTV Logic	Single Acting	9907-2130
SERVO	V45RG-RX-T-S-X - TTV Logic	Single Acting	9907-2131
SERVO	VS-DX SKID, J-BOX, FAIL EXTEND, Z2	Single Acting	8918-164
SERVO	VS-DX SKID, FAIL EXTEND, Z1	Single Acting	8918-165
SERVO	VS-DX SKID, J-BOX, FAIL RETRACT, Z2	Single Acting	8918-166
SERVO	VS-DX SKID, FAIL RETRACT, Z1	Single Acting	8918-167

Table Q. VS-I, GI, DX Servos

VS Spare Parts Kit			
Description	Detailed Description	Operating Action	Part Number
Replacement Kit	V45TD-E1 Servo - Integrated, 4" & 5" bore		1-9907-1452
Replacement Kit	V45TD-E2 Servo - Integrated, 4" & 5" bore		2-9907-1452
Replacement Kit	V45TD-E1 Servo - Integrated, 6",8",10" bore		1-9907-1335
Replacement Kit	V45TD-E2 Servo - Integrated, 6",8",10" bore		2-9907-1335
Replacement Kit	V45TD-R1 Servo - Integrated, 4" & 5" bore		1-9907-1453
Replacement Kit	V45TD-R2 Servo - Integrated, 4" & 5" bore		2-9907-1453
Replacement Kit	V45TD-R1 Servo - Integrated, 6",8",10" bore		1-9907-1336
Replacement Kit	V45TD-R2 Servo - Integrated, 6",8",10" bore		2-9907-1336
Replacement Kit	V45VD-E1 Servo - Remote		1-9907-1256
Replacement Kit	V45VD-E2 Servo - Remote		2-9907-1256
Replacement Kit	V45VD-R1 Servo - Remote		1-9907-1333
Replacement Kit	V45VD-R2 Servo - Remote		2-9907-1333
Replacement Kit	V45 Servo Driver Module - Replacement Kit		8935-1212
Replacement Kit	Bridge Manifold Seal Kit - 4" & 5" bore		8923-2165
Replacement Kit	Bridge Manifold Seal Kit - 6",8",10" bore		8923-2068
Replacement Kit	Cylinder Shaft Seal Kit - 4" Bore		8935-1216-10
Replacement Kit	Cylinder Shaft Seal Kit - 5" Bore		8935-1216-12
Replacement Kit	Cylinder Shaft Seal Kit - 6" Bore		8935-1216-15

Replacement Kit	Cylinder Shaft Seal Kit - 8" Bore		8935-1216-20
Replacement Kit	Cylinder Shaft Seal Kit - 10" Bore		8935-1216-25
Replacement Kit	Tools/sockets Kit - V1 Gland Seal Removal		8923-2508
Replacement Kit	MLDT - 2" Stoke Kit		1689-1256-05
Replacement Kit	MLDT - 3" Stoke Kit		1689-1256-07
Replacement Kit	MLDT - 4" Stoke Kit		1689-1256-10
Replacement Kit	MLDT - 6" Stoke Kit		1689-1256-15
Replacement Kit	MLDT - 8" Stoke Kit		1689-1256-20
Replacement Kit	MLDT - 10" Stoke Kit		1689-1256-25
Replacement Kit	MLDT - 12" Stoke Kit		1689-1256-30
Replacement Kit	MLDT - 14" Stoke Kit		1689-1256-35
Replacement Kit	MLDT - 16" Stoke Kit		1689-1256-40
Replacement Kit	MLDT - 18" Stoke Kit		1689-1256-45
Replacement Kit	Dump Valve Solenoid - Spare		8923-3024
Replacement Kit	KIT - VSI SERVO PLUGS, ZONE 1		8923-3203
Replacement Kit	VS-DX Servo, Fail Extend, Zone 2		8935-1341
Replacement Kit	VS-DX Servo, Fail Extend, Zone 1		8935-1340
Replacement Kit	VS-DX Servo, Fail Retract, Zone 2		8935-1343
Replacement Kit	VS-DX Servo, Fail Retract, Zone 1		8935-1342
Replacement Kit	VS-DX Isolation Valve, Right Hand		8935-1338
Replacement Kit	VS-DX Isolation Valve, Left Hand		8935-1339
Replacement Kit	VS-DX Pressure Gauge		8935-1344
Replacement Kit	VS-DX Shuttle Valve		8935-1336
Replacement Kit	V90VD-E1, Z1 Servo	Double Acting	1-9907-1287
Replacement Kit	V90VD-E2, Z2 Servo	Double Acting	2-9907-1287
Replacement Kit	V90VD-R1, Z1 Servo	Double Acting	1-9907-1288
Replacement Kit	V90VD-R2, Z2 Servo	Double Acting	2-9907-1288
Replacement Kit	Electronic DVP Driver		8923-2024
Replacement Kit	Bridge Manifold Seal Kit		8923-2020
Replacement Kit	Cylinder Shaft Seal Kit - 10" Bore		8923-2021
Replacement Kit	Cylinder Shaft Seal Kit - 12" Bore		8923-2022
Replacement Kit	LVDT Connector Kit		8923-2023
Replacement Kit	LVDT - 4" Stoke Kit		1680-1104-10
Replacement Kit	LVDT - 6" Stoke Kit		1680-1104-15
Replacement Kit	LVDT - 8" Stoke Kit		1680-1104-20
Replacement Kit	LVDT - 10" Stoke Kit		1680-1104-25
Replacement Kit	LVDT - 12" Stoke Kit		1680-1104-30
Replacement Kit	LVDT - 14" Stoke Kit		1680-1104-35
Replacement Kit	LVDT - 16" Stoke Kit		1680-1104-40
Replacement Kit	LVDT - 18" Stoke Kit		1680-1104-45

Table R. VS-I & II Spare Parts

Currently Active VariStroke II Models				
Description	External Model Number	Operating Action	Internal Cylinder Return Spring	Part Number
ACTUATOR	V90TD-2520-FBE	DOUBLE ACTING	None	9907-1261
ACTUATOR	V90TD-2530-MBR	DOUBLE ACTING	None	9907-1262
ACTUATOR	V90TD-3020-MBE	DOUBLE ACTING	None	9907-1263
ACTUATOR	V90TD-2530-MBE	DOUBLE ACTING	None	9907-1282
ACTUATOR	V90TD-3030-MBE	DOUBLE ACTING	None	9907-1283
ACTUATOR	V90TD-3025-MBE	DOUBLE ACTING	None	9907-1499
ACTUATOR	V90TD-2520-MBR	DOUBLE ACTING	None	9907-1866
ACTUATOR	V90RD-3030-MBE	DOUBLE ACTING	None	9907-1898
ACTUATOR	V90RD-2535-MBRXM-X-S-X	DOUBLE ACTING	None	9907-1937
ACTUATOR	V90RD-2535-MBEXM-X-S-X	DOUBLE ACTING	None	9907-1938
ACTUATOR	V90TD-2520-FBE	DOUBLE ACTING	None	9907-1998
SERVO	V90V-E	DOUBLE ACTING		9907-1287
SERVO	V90V-R	DOUBLE ACTING		9907-1288

UG25+ Governors for Steam Turbines

Part Number



GOVERNOR - P3, UG-25+, 25 LB FT, .625 PUMP, SERR DRIVE, .625 TERM SHAFTS, CW ROT, OIL GAUGE LT,W/O STOP BUTTON, FOR STEAM TURBINE	8528-122
GOVERNOR - P3, UG-25+, 25 LB FT, .625 PUMP, KEYED DRIVE, .625 TERM SHAFTS, CCW ROT, OIL GAUGE RT,W/O STOP BUTTON, FOR STEAM TURBINE	8528-123
GOVERNOR - P3, UG-25+, 25 LB FT, .625 PUMP, SERR DRIVE, .625 TERM SHAFTS, CCW ROT, OIL GAUGE LT,W/O STOP BUTTON, FOR STEAM TURBINE	8528-132
GOVERNOR - P3, UG-25+, 25 LB FT, .625 PUMP, SERR DRIVE, .625 TERM SHAFTS, CW ROT, OIL GAUGE RT,W/O STOP BUTTON, FOR STEAM TURBINE	8528-133
GOVERNOR - P3, UG-25+, 25 LB FT, .625 PUMP, KEYED DRIVE, .625 TERM SHAFTS, CW ROT, OIL GAUGE RT,W/O STOP BUTTON, FOR STEAM TURBINE	8528-134
GOVERNOR - P3, UG-25+, 25 LB FT, .625 PUMP, SERR DRIVE, .625 TERM SHAFTS, CW ROT, OIL GAUGE LT,W/O STOP BUTTON, FOR STEAM TURBINE	8528-135
GOVERNOR - P3, UG-25+, 25 LB FT, .625 PUMP, KEYED DRIVE, .625 TERM SHAFTS, CCW ROT, OIL GAUGE RT,W/O STOP BUTTON, FOR STEAM TURBINE	8528-136
GOVERNOR - P3, UG-25+, 25 LB FT, .625 PUMP, KEYED DRIVE, .625 TERM SHAFTS, CW ROT, OIL GAUGE RT,W/O STOP BUTTON, FOR STEAM TURBINE	8528-137

*Documentation: Product Spec: 03339, Manual: 26643

UG25+ Actuators

Part Number



ACTUATOR - P3, UG-25+, 31 LB FT, .875 PUMP, KEY DRIVE, .750 TERM SHAFTS, CW ROT, OIL GAUGE RT, MAN	8528-027
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ACTUATOR - P3, UG-25+, 31 LB FT, .875 PUMP, SERR DRIVE, .750 TERM SHAFTS, CCW ROT, OIL GAUGE RT, MAN	8528-028
ACTUATOR - P3, UG-25+, 31 LB FT, .875 PUMP, KEY DRIVE, .750 TERM SHAFTS, CCW ROT, OIL GAUGE RT, MAN	8528-029
ACTUATOR - P3, UG-25+, 31 LB FT, .875 PUMP, KEY DRIVE, .750 TERM SHAFTS, CCW ROT, OIL GAUGE LT	8528-033
ACTUATOR - P3, UG-25+, 31 LB FT, .875 PUMP, KEY DRIVE, .750 TERM SHAFTS, CW ROT, OIL GAUGE RT	8528-300
ACTUATOR - P3, UG-25+, 31 LB FT, .875 PUMP, KEY DR, .750 TERM SHAFT, CCW ROT, OILGA LT	8528-302
ACTUATOR - P3, UG-25+, 25 LB FT, .875 PUMP, KEY DR, .625 TERM SHAFT, CW ROT, OILGA RT	8528-303
ACTUATOR - P3, UG-25+, 25 LB FT, .875 PUMP, KEY DR, .625 TERM SHAFT, CW ROT, OILGA LT	8528-305
ACTUATOR - P3, UG-25+, 25 LB FT, .625 PUMP, KEY DR, .625 TERM SHAFT, CW ROT, OILGA RT	8528-307
ACTUATOR - P3, UG-25+, 25 LB FT, .625 PUMP, KEY DR, .625 TERM SHAFT, CCW ROT, OILGA RT	8528-308
ACTUATOR - P3, UG-25+, 25 LB FT, .625 PUMP, KEY DR, .625 TERM SHAFT, CW ROT, OILGA LT	8528-309
ACTUATOR - P3, UG-25+, 25 LB FT, .875 PUMP, SERR DRIVE, .625 TERM SHAFTS, CW ROT, OIL GAUGE LH	8528-311
ACTUATOR - P3, UG-25+, 25 LB FT, .625 PUMP, SERR DRIVE, .625 TERM SHAFTS, CW ROT, OIL GAUGE LT	8528-312
ACTUATOR - P3, UG-25+, 25 LB FT, .625 PUMP, SERR DR, .625 TERM SHAFT, CCW ROT, OILGA LT	8528-313
ACTUATOR - P3, UG-25+, 25 LB FT, .625 PUMP, SERR DR, .625 TERM SHAFT, CW ROT, OILGA RT	8528-314
ACTUATOR - P3, UG-25+, 25 LB FT, .625 PUMP, SERR DR, .625 TERM SHAFT, CCW ROT, OILGA RT	8528-315
ACTUATOR - P3, UG-25+, 31 LB FT, .625 PUMP, KEY DRIVE, .750 TERM SHAFTS, CW ROT, OIL GAUGE LT	8528-316
ACTUATOR - P3, UG-25+, 31 LB FT, .625 PUMP, SERRATED DRIVE, .750 TERM SHAFTS, CW ROT, OIL GAUGE LT	8528-320
ACTUATOR - P3, UG-25+, 31 LB FT, .625 PUMP, SERRATED DRIVE, .750 TERM SHAFTS, CW ROT, OIL GAUGE RT	8528-321
ACTUATOR - P3, UG-25+, 31 LB FT, .625 PUMP, SERRATED DRIVE, .750 TERM SHAFTS, CCW ROT, OIL GAUGE LT	8528-322
ACTUATOR - P3, UG-25+, 25 LB FT, .875 PUMP, SERR DR, .625 TERM SHAFT, CW ROT, OIL GAUGE RT	8528-324
ACTUATOR - P3, UG-25+, 25 LB FT, .875 PUMP, SERR DR, .625 TERM SHAFT, CCW ROT, OIL GAUGE RT	8528-325
ACTUATOR - P3, UG-25+, 31 LB FT, .875 PUMP, SERR DR, .750 TERM SHAFT, CW ROT, OIL GAUGE RT	8528-326
ACTUATOR - P3, UG-25+, 31 LB FT, .875 PUMP, SERR DR, .750 TERM SHAFT, CCW ROT, OIL GAUGE RT	8528-327

*Documentation: Product Spec: 03386, Manual: 26580

UG Actuators

Part Number



ACTUATOR - UG 2 MPU, CW, DOUBLE LIP DRIVE SEAL	8251-212
ACTUATOR - 14 PINS, HIGH SPEED, SERR, WITH 8923-631 BOOSTER T	8251-218
ACTUATOR - 14 PINS.HIGH SPEED.SERR.NO BOOSTER KIT	8251-569
ACTUATOR - UG8 LOW SPD CW WP	8251-711
ACTUATOR - UG 20 FT LB	8251-716
ACTUATOR - UG15 (SERR DR SHAFT, HI SPD, MPU)	8251-719
ACTUATOR - UG15 (KEYED DR SHAFT, HI SPD, MPU)	8251-720
ACTUATOR - UG15 (SERR DR SHAFT, MISS TOOTH TERM SHAFT, HI SPEED)	8251-724
ACTUATOR - UG15 (HIGH SPEED, SERR D/S, MARINE GLAND)	8251-734
ACTUATOR - UG15 (HIGH SPEED, FRENCH 31 D/S, MPU)	8251-735
ACTUATOR - UG15 (SERR D/S, HIGH SPEED)	8251-737
ACTUATOR - UG15 FT/LB, H.S, KEYED,DOUBLE LIPS	8251-752
ACTUATOR - UG15 SERR.DR.SHAFT/SERR.TERM.SHAFT/HI.SPD. /3 PIN	8251-758
ACTUATOR - UG15/KEY DR SHAFT/HI SPD/3 PIN	8251-759
ACTUATOR - UG20/SERR DR SHAFT/HI SPD/3 PIN	8251-760
ACTUATOR - UG20/SERR DR SHAFT/.625 D-TERM SHAFT/LO SPD/3 PIN	8251-762
ACTUATOR - UG15/SERR DR SHAFT/.562 D-TERM SHAFT/HI SPD/3 PIN	8251-763
ACTUATOR - UG15 WITH SINGLE RH SERR T/S	8251-0016
ACTUATOR - UG20/SERR DR SHAFT/.625 D-TERM SHAFT/LO SPD/10 PIN/LVDT	8251-764
ACTUATOR - UG15/SERR DR SHAFT/LO SPD/3 PIN	8251-765
ACTUATOR - UG20/SERR DR SHAFT/LO SPD/3 PIN	8251-766
ACTUATOR - UG20/PG ADPTR/SERR DR SHAFT/HI SPD/3 PIN	8251-767
ACTUATOR - UG20/PG ADPTR/SERR DR SHAFT/LO SPD/3 PIN	8251-768
ACTUATOR - UG15/PG ADPTR/SERR DR SHAFT/MISS TOOTH TERM SHAFT/LO SPD/3 PIN	8251-769
ACTUATOR - UG15/EXT KEY DR SHAFT/HI SPD/3 PIN	8251-770
ACTUATOR - UG15/PG ADPTR/SERR DR SHAFT/LO SPD/3 PIN	8251-771
ACTUATOR - UG20/SERR DR SHAFT/HI SPD/3 PIN/CSA	9907-261
ACTUATOR - UG15/KEY DR SHAFT/HI SPD/3 PIN/CSA	9907-262
ACTUATOR - CSA UG15 (SERR DRIVE SHAFT, LOW SPEED)	9907-444
ACTUATOR - UG15 SERR D/S, HI SPEED, 3 PINS, CSA	9907-448
ACTUATOR - UG20/SERR DR SHAFT/.625 D-TERM SHAFT/LO SPD/3 PIN/CSA	9907-878
ACTUATOR - UG20 (KEYED D/S, LOW SPEED PUMP)	8251-0001
ACTUATOR - UG15 ACTUATOR W/HEAT EXCHANGER,	8251-0002
ACTUATOR - UG ACTUATOR (LOW SPD, KEY SHAFT)	8251-0003
ACTUATOR - UG 15 FT-LB SPECIAL DRIVE, HEAT EXCHANGER, MPU	8251-0004
ACTUATOR - UG15 HIGH PUMP 4PINS	8251-0005
ACTUATOR - UG MISSING SERR, MPU	8251-0006
ACTUATOR - UG15 WITH SINGLE RH SERR T/S	8251-0008
ACTUATOR - UG LOW SP, CW, MPU	8251-0009
ACTUATOR - UG ACTUATOR	8251-0010
ACTUATOR - UG20/EXT KEY DR SHAFT/LOW SPD/3 PIN	8251-0015
ACTUATOR - UG15 WITH SINGLE RH SERR T/S	8251-0016
ACTUATOR - UG20/SERR DR SHAFT/.625 D-TERM SHAFT/LO SPD/3 PIN	8251-0018

ACTUATOR - UG 15 FT LB REMOTE OIL PRESSURE	8915-2007
ACTUATOR - UG20 ACT(SERR T/S W/INDICATORS, PG ADAPTER, CSA)	9907-1501
ACTUATOR - UG15/EXTERNAL KEY DR SHAFT/HI SPD/3 PIN/CSA	9907-1508
ACTUATOR - UG HI SPD,CCW,DOUBLE LIP DRIVE SEAL	8251-207-2
*Documentation: Manual: 37512	

CPC Current-to-Pressure Converter

Part Number



CPC-II - 10 bar, Div.2 (Zone2)	9907-1200
CPC-II - 10 bar, Div.1&2 (Zone1&2)	9907-1199
CPC-II - 25 bar, Div.2 (Zone2)	9907-1198
CPC-II - 25 bar, Div.1&2 (Zone1&2)	9907-1197
CPC-II - Dual Redundant, Zone 2, 0-10 bar model	9907-1253
CPC-II - Dual Redundant, Zone 2, 0-25 bar model	9907-1254
CPC-II - Voith Adapter Manifold	8928-7240
CPC-DX - Dual Redundant Skid, Zone 2, 0-10 bar model	8918-116
CPC-DX - Dual Redundant Skid, Zone 2, 0-25 bar model	8918-118
*Documentation: Product Spec: 03352, Manual: 26615	

CPC-DX Repair Kits

KIT-CPC REPLACEMENT, 10 BAR, ZONE 2, FOR CPC-DX SKID	8923-1996
KIT-CPC REPLACEMENT, 25 BAR, ZONE 2, FOR CPC-DX SKID	8923-1997
KIT-REPLACEMENT ISOLATION VALVE: RIGHT HAND	8923-2236
KIT-REPLACEMENT ISOLATION VALVE, LEFT HAND	8923-2242
KIT-PRESSURE GAUGE, 10BAR, FOR CPC-DX SKID	8923-2237
KIT-PRESSURE GAUGE, 25BAR, FOR CPC-DX SKID	8923-2238
KIT-SHUTTLE VALVE, FOR CPC-DX SKID	8923-2239

TM Actuators (Linear)

Part Number



TM-25LP, Standard, Extends	9907-1213
TM-25LP, Standard, Retracts	9907-1214
TM-25LP, Dual Coil, Extends w/o Feedback	9905-658

Turbine Shutdown Trip Block Assemblies

Part Number



Valve- Assembly, QuickTrip, Chemically Resistant	0-9907-2108
Valve- Assembly, QuickTrip, Chemically Resistant	1-9907-2108
Valve- Assembly, QuickTrip, Chemically Resistant	2-9907-2108
QuickTrip - SIL-3, CV=10, Ordinary Locations	0-9907-1978
QuickTrip - SIL-3, CV=10, Zone 1 Locations	1-9907-1978
QuickTrip - SIL-3, CV=10, Zone 2 Locations	2-9907-1978
QuickTrip - SIL-3, CV=10, Zone 1 Locations, Russia C-US Certs	3-9907-1978
QuickTrip - SIL-3, CV=10, Zone 2 Locations, Russia C-US Certs	4-9907-1978
*Documentation: Product Spec: 03415, Manual: 26815	
QuickTrip Spare Parts	
Solenoid (LAT) Replacement Kit	8923-2142
Sight Window Replacement Kit	8923-2143
Top Cover Replacement Kit (Painted)	8923-2690
Bottom Cover Replacement Kit	8923-2145
PCBA Replacement Kit	8923-2146
Return Spring Replacement Kit	8923-2147

6. Gas Turbine Valves

GS40 Gas Fuel Valve Actuator with On-board Driver

Part Number



GS40, 0.30" Port Size, 600# RF Flange, 125 VDC, Conduit Connections	9908-1608
GS40, 0.75" Port Size, 600# RF Flange, 125 VDC, Conduit Connections	9908-1609
*Documentation: Product Spec: 03456, Manual: 35136	
GS40, 1.5IN SAE, ALUM,0.30 ACD, 125V, NO-SIL, NO-RTE, CONNECTORS	9908-1650
GS40, 1.5IN SAE, ALUM, 0.30 ACD, 24V, NO-SIL, NO-RTE, CONNECTORS	9908-1651
GS40, 1.5IN SAE, ALUM, 0.75 ACD, 125V, NO-SIL, NO-RTE, CONNECTORS	9908-1653
GS40, 1.5IN SAE, ALUM, 0.75 ACD, 24V, NO-SIL, NO-RTE, CONNECTORS	9908-1654

GS50 Gas Fuel Valve Actuator with On-board Driver

Part Number



GS50, 1.0" Port Size, 600# RF Flange, 125 VDC, Conduit Connections	9908-1605
GS50, 1.5" Port Size, 600# RF Flange, 125 VDC, Conduit Connections	9908-1606
GS50, 2.0" Port Size, 600# RF Flange, 125 VDC, Conduit Connections	9908-1607
*Documentation: Product Spec: 03456, Manual: 35136	
GS50, 2IN SAE, ALUM, 1.0 ACD, 125V, NO-SIL, NO-RTE, CONNECTORS	9908-1665
GS50, 2IN SAE, ALUM, 1.0 ACD, 24V, NO-SIL, NO-RTE, CONNECTORS	9908-1666
GS50, 2IN SAE, ALUM, 1.5 ACD, 125V, NO-SIL, NO-RTE, CONNECTORS	9908-1668
GS50, 2IN SAE, ALUM, 1.5 ACD, 24V, NO-SIL, NO-RTE, CONNECTORS	9908-1669
GS50, 2IN SAE, ALUM, 2.0 ACD, 125V, NO-SIL, NO-RTE, CONNECTORS	9908-1671
GS50, 2IN SAE, ALUM, 2.0 ACD, 24V, NO-SIL, NO-RTE, CONNECTORS	9908-1673

LQ6 Liquid Fuel Valve Actuator with On-board Driver

Part Number



LQ6, 0.050" Port Size, Single Resolver	9908-1519
LQ6, 0.067" Port Size, Single Resolver	9908-1520
LQ6, 0.150" Port Size, Single Resolver	9908-271
*Documentation: Product Spec: 03288, Manual: 26207	

LQ25 Standard Valves

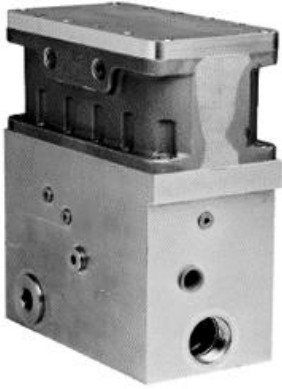
Part Number



LQ25 - 0.1 SQ INCH, PIV AND SOV, 3 SPD RESOLVER, ATEX/PED	9908-238
LQ25 - 0.2 SQ INCH, PIV AND SOV, 3 SPD RESOLVER, ATEX/PED	9907-696
LQ25 - 0.3 SQ INCH/PIV AND SOV, 3 SPD RESOLVER, ATEX/PED	9907-996
*Documentation: Product Spec: 40174, Manual: 26161	

LSOV25 Liquid Fuel Shutoff Valve

Part Number



LSOV25, 24 VDC, W/ PROX SWITCH	9908-359
LSOV25, 125 VDC, W/ SINGLE PROX SWITCH	9908-358
LSOV25, 24 VDC, M20-1.5 CONDUIT	9908-363
LSOV25, 125 VDC, M20-1.5 CONDUIT	9908-361
*Documentation: Product Spec: 40169, Manual: 40148	

USOV Universal Shutoff Valves

Part Number



USOV, 2 IN 900#, 1.6 ACD, 24 VDC	9907-1233
*Documentation: Product Spec: 03382, Manuals: 26307, 26335	

GSOV80 Gas Fuel Shutoff Valve, 2.0" Flange

Part Number



GSOV80, 3 INCH, HP, 24 VDC, WITH CIRCULAR CONNECTOR, LOW TEMP	9907-2328
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GSOV80, 3 INCH, HP, 125 VDC, WITH CIRCULAR CONNECTOR, LOW TEMP	9907-2335
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*Documentation: Product Spec: 03457, Manuals: 35189

GSOV25HT Gas Fuel Shutoff Valve, 2.0" Flange

Part Number



GSOV25 HT W/24 VDC SOLENOID (CLOSED POSITION SWITCH)	9907-861
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GSOV25 HT W/24 VDC SOLENOID (OPEN POSITION SWITCH)	9907-894
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GSOV25 HT W/125 VDC SOLENOID (OPEN POSITION SWITCH)	9907-895
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GSOV25 HT W/125 VDC SOLENOID (CLOSED POSITION SWITCH)	9907-896
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GSOV25 HT W/24 VDC SOLENOID, W/OPEN & CLOSED PROXIMITY SWITCHES	9907-898
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GSOV25 HT W/125 VDC SOLENOID, W/OPEN & CLOSED PROXIMITY SWITCHES	9907-899
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*Documentation: Product Spec: 03286, Manual: 26190

DVP Digital Valve Positioner

Part Number

**24 VDC DVP Driver**

IP30, Ethernet, TB Input, TB Output	8200-505
IP30, TB Input, TB Output	8200-507
IP56, Ethernet, Conduit Input And Output	8200-506
IP56, Conduit Input And Output	8200-508

125V DVP Driver (DVP 1250)

IP30, Ethernet, TB Input, Circ Connector Output	8200-182
IP30, Ethernet, TB Input, TB Output	8200-183
IP30, TB Input, TB Output	8200-186
IP30, TB Input, Circ Connector Output	8200-188

High Output DVP, 5KW

TB input/output, Ethernet, Non-SIL, NA Listings	8200-533
TB input/output, No Ethernet, Non-SIL, NA Listings	8200-538

High Output DVP, 10KW

TB input/output, Ethernet, Non-SIL, NA Listings	8200-535
TB input/output, No Ethernet, Non-SIL, NA Listings	8200-536

High Output DVP, 12KW

TB INPUT/OUTPUT, ETHERNET, NON-SIL	8200-555
TB INPUT/OUTPUT, NO ETHERNET, NON-SIL	8200-556

*Documentation: Obtain based on specific part number

7. L-Series Actuators and Integrated Speed Controls

The L-Series process controller provides a flexible control solution for applications including air/fuel ratio control, pressure control, and certain other process control functions. It provides a suitable replacement for mechanical systems that need more flexibility in control strategy. The L-Series process controller is designed for industrial applications ranging from generators and mechanical drives to pumps and compressors (see product manual 26251).



L-Series Speed Control–Actuator Only

	Part Number
L-Series Act., Type 6 Shaft, Std Cvr, Spd Ctrl w/o CAN, Dflt Pmtrs	8404-1001
L-Series Act., Type 5 Shaft, Std Cvr, Spd Ctrl w/o CAN, Dflt Pmtrs	8404-1002
L-Series Act., Type 5 Shaft, Std Cvr, Spd Ctrl w/o CAN, Coleman Pmtrs	8404-1003
L-Series Act., Type 4 Shaft, Std Cvr, Spd Ctrl w/o CAN, Dflt Pmtrs	8404-1004

L-Series Speed Control–Actuator with ITB

L-Series ITB, 36 mm, Spd Ctrl, Dflt Pmtrs	8404-2007
L-Series ITB, 43 mm, Spd Ctrl, Dflt Pmtrs	8404-2008
L-Series ITB, 50 mm, Spd Ctrl, Dflt Pmtrs	8404-2009
L-series ITB, 30 mm, Sealed, Spd Ctrl, Dflt Pmtrs	8404-2033

L-Series Process Control with ITB

(AFR is considered a form of Process Control)

L-Series Trim Valve, 16 mm, Process Ctrl, Dflt Pmtrs	8404-3001
L-Series Trim Valve, 22 mm, Process Ctrl, Dflt Pmtrs	8404-3002
L-Series ITB, 25 mm Sealed, Process Ctrl, Dflt Pmtrs, N/C	8404-2061
L-Series ITB, 30 mm Sealed, Process Ctrl, Dflt Pmtrs, N/C	8404-2062
L-Series ITB, 36 mm Sealed, Process Ctrl, Dflt Pmtrs, N/C	8404-2063
L-Series ITB, 43 mm Sealed, Process Ctrl, Dflt Pmtrs, N/C	8404-2064
L-Series ITB, 50 mm Sealed, Process Ctrl, Dflt Pmtrs, N/C	8404-2065

L-Series Speed Control–Actuator with ITB & Venturi Mixer (MAS)

L-Series LC50, 25 mm ITB, 27 mm X-MIX, MAS, Spd Ctrl, Dflt Pmtrs	8404-4001
L-Series LC50, 30 mm ITB, 19 mm O-MIX, MAS, Spd Ctrl, Dflt Pmtrs	8404-4002

L-Series LC50, 36 mm ITB, 23 mm O-MIX, MAS, Spd Ctrl, Dflt Pmtrs	8404-4003
L-Series LC50, 43 mm ITB, 29 mm O-MIX, MAS, Spd Ctrl, Dflt Pmtrs	8404-4004
L-Series LC50, 50 mm ITB, 36 mm O-MIX, MAS, Spd Ctrl, Dflt Pmtrs	8404-4005
L-Series LC50, 30 mm ITB, 30 mm X-MIX, MAS, Spd Ctrl, Dflt Pmtrs	8404-4006
L-Series LC50, 36 mm ITB, 34 mm X-MIX, MAS, Spd Ctrl, Dflt Pmtrs	8404-4007
L-Series LC50, 43 mm ITB, 40 mm X-MIX, MAS, Spd Ctrl, Dflt Pmtrs	8404-4008
L-Series LC50, 50 mm ITB, 47 mm X-MIX, MAS, Spd Ctrl, Dflt Pmtrs	8404-4009

L-Series Diesel Engine Applications

L-Series DER, Stanadyne Cvr/Shft, Spd Ctrl w/o CAN, Stana Pmtrs	8404-5003
L-Series DER, Delphi Cvr/Shft w/Lvr, Spd Ctrl w/o CAN, Dflt Pmtrs	8404-5004

L-Series Positioner with ITB

L-Series Trim Valve, 16 mm, Pos Ctrl, Dflt Pmtrs	8404-3003
L-Series Trim Valve, 22 mm, Pos Ctrl, Dflt Pmtrs	8404-3004
L-Series ITB, 25 mm Sealed, Pos Ctrl, PWM, N/C	8404-2013
L-Series ITB, 30 mm Sealed, Pos Ctrl, PWM, N/C	8404-2014
L-Series ITB, 36 mm Sealed, Pos Ctrl, PWM, N/C	8404-2015
L-Series ITB, 43 mm Sealed, Pos Ctrl, PWM, N/C	8404-2016
L-Series ITB, 50 mm Sealed, Pos Ctrl, PWM, N/C	8404-2017
L-Series ITB, 36 mm Sealed, Pos Ctrl, PWM, N/O	8404-2057

L-Series Accessories

Gasket, 16 & 22 mm, 1/valve	3051-073
Gasket, 25, 30, & 36 mm ITBs	0014-00-034
Gasket, 43 & 50 mm ITBs	0108-00-021
HEGO (Heated Exhaust Gas Oxygen) Sensor	1680-6005
Kit, HEGO Mating Connector	8928-427
Cable, LCS to L-Series Adapter	5450-1033
Kit, L-Series Serial Communication Interface	8923-1061
Kit, L-Series Mating Connector	8928-396
Manifold Air Pressure Transducer	6910-314
Zero Pressure Regulator (for sizes 43 or 50 mm)	0055-00-063

8. F-Series Actuator and Actuator with ITB

The F-Series ITB is designed to throttle air or air/fuel mixtures for gaseous engines in industrial and on-highway service. This system is designed for direct replacement of traditional throttle valves and does not require linkage between the valve and actuator.

F-Series Positioners

Part Number



F-Series Actuator, Std Shaft, 23-pin	8235-600
F-Series 33 mm ITB, Std Mount, 23-pin, Plan A	8235-661
F-Series 48 mm ITB, Std Mount, 23-pin, Plan A, Factory Default SW	8235-602
F-Series 60 mm ITB, Std Mount, 23-pin, Plan A, Factory Default SW	8235-606
F-Series 60 mm ITB, JADE Mount, 23-pin, Plan A, Factory Default SW	8235-608
F-Series 68 mm ITB, Std Mount, 23-pin, Plan A, Factory Default SW	8235-610
F-Series 68 mm ITB, M10 Mount, 23-pin, Plan D, Factory Default SW	8235-612
F-Series 68 mm ITB, Std Mount, 23-pin, Plan B, Flo-Tech Flow Curve	8235-635
F-Series 68 mm ITB, M10 Mount, 14-pin, Plan A	8235-618
F-Series 48 mm ITB, Std Mount, 14-pin, Plan A	8235-623
F-Series 48 mm ITB, M08 Mount, 14-pin, Plan B	8235-624
F-Series 60 mm ITB, Std Mount, 14-pin, Plan A	8235-625
F-Series 60 mm ITB, JADE Mount, 14-pin, Plan A	8235-626
F-Series 68 mm ITB, Std Mount, 14-pin, Plan A	8235-627
F-Series 68 mm ITB, M10 Mount, 14-pin, Plan A	8235-628
F-Series 60 mm ITB, Std Mount, 14-pin, Plan A	8235-630
F-Series 68 mm ITB, Std Mount, 14-pin, Plan A	8235-631
F-Series 60 mm ITB, Std Mount, 14-pin, Plan B	8235-634
F-Series 68 mm ITB, Std Mount, 14-pin, Plan B	8235-639
F-Series 48 mm ITB, Std Mount, 23-pin, Plan B, Flo-Tech Sch, N/O	8235-668
F-Series 60 mm ITB, Std Mount, 23-pin, Plan A, Flo-Tech Sch, N/O	8235-669
F-Series 68 mm ITB, Std Mount, 23-pin, Plan A, Flo-Tech Sch, N/O	8235-622
Accessories	
Kit-F-Series 14-Pin Mating Connector (14-pin kit)	8923-1311
Kit-F-Series 23-Pin Mating Connector (23-pin kit)	8923-1312
Kit-F-Series Communication Hardware, 14 Pin (14-pin kit)	8923-1254
Kit-F-Series Communication Hardware, 23 Pin (23-pin kit)	8923-1255

9. R-Series Actuators

Woodward's R-11 and R-30 electric actuators provide high torque rotary travel to precisely position various types of control valves and other mechanisms that operate in high-temperature, high-vibration locations.

R-Series Actuators

Part Number



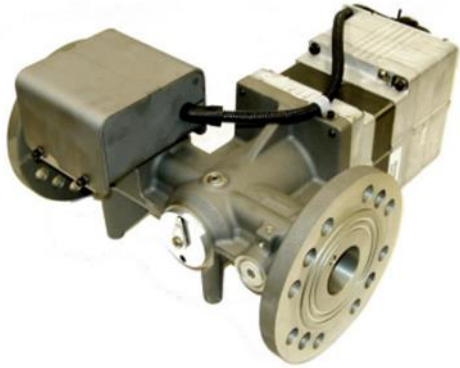
R11 Jumper configurable	8410-001
R30 Jumper configurable	8410-002
*Documentation: Product Spec 03434; Manual 26729	

10. TecJet Fuel Control Valves

The TecJet™ valve/actuator is an integrated, digitally-compensated control valve and actuator system for regulating and metering the flow of gaseous fuels. The device is designed to accept a fuel rate demand signal. It also incorporates feedback sensors that monitor fuel pressure, temperature, and valve pressure differential.

TecJet Fuel Control Valves

Product Number



TecJet 110	8407-523
TecJet 52	8407-527
TecJet 85	8407-538

11. Large Engine Control Module (LECM)

The LECM provides a single-box approach that can be built up with interlocking modules into a single engine-mountable assembly. This control scheme uses a modular approach for both the electronic control modules hardware and software. These modules can be mixed and matched to address different applications all using the same software interface. This single-module approach lowers hardware, wiring, and troubleshooting costs, and reduces development and installation time.

Large Engine Control Module (LECM)

Part Number



CONTROL - LECM - E6 (3-STACK) LEAN-BURN, 20 IGNITION, 10 KNOCK, 14 TC	8280-4003
CONTROL - LECM - E6 (3-STACK) LEAN-BURN, 20 IGNITION, 16 KNOCK, 8TC	8280-4041
CONTROL - LECM - E6 (2-STACK) LEAN-BURN WITH 20 KNOCK	8280-4043
CONTROL - LECM - E6 (2-STACK) LEAN-BURN WITH 20 IGNITION	8280-4045
CONTROL - LECM - E6 LEAN-BURN (SA MAIN MODULE)	8280-4046
CONTROL - LECM - E6 (2-STACK) RICH-BURN WITH 20 IGNITION	8280-4048
CONTROL - LECM - E6 RICH-BURN (SA MAIN MODULE)	8280-4049
CONTROL - LECM - E6 (3-STACK) RICH-BURN, 20 IGNITION, 16 KNOCK 8TC	8280-4051
CONTROL - LECM - E6 (3-STACK) RICH-BURN, 20 IGNITION, 20 KNOCK	8280-4053
CONTROL - LECM - E6 (3-STACK) RICH-BURN, 20 IGNITION, 10 KNOCK, 14TC	8280-4059
CONTROL - LECM - E6 (3-STACK) LEAN-BURN, 20 IGNITION, 20 KNOCK	8280-4061
CONTROL - LECM - GENERIC - STANDALONE AUX RTCDC, 10 CH FAST 4-20MA, 14 CH T/C	8280-4063
CONTROL - LECM - GENERIC - 3-STACK: MAIN; AUX RTCDC, 10 CH FAST 0-5V, 14 CH T/C; EID, 20 CH DRVR	8280-4073
CONTROL - LECM - GENERIC - 2-STACK: MAIN; AUX RTCDC, 10 CH FAST 0-5V, 14 CH T/C	8280-4074
CONTROL - LECM - GENERIC - STANDALONE AUX RTCDC, 10 CH FAST 0-5V, 14 CH T/C	8280-4075
CONTROL - LECM, MAIN SA, MARINE ENGINE PROPULSION	8280-4082
CONTROL - LECM; 2-STACK; MAIN / AUX; GENERIC; PROTECTION/ IO MODULE, 16 CH SLOW 4-20MA, 8 CH T/C	8280-4084
CONTROL - LECM; AUX SA; GENERIC PROTECTION/ IO MODULE, 16 CH SLOW 4-20MA, 8 CH T/C	8280-4088
CONTROL - LECM; 3-STACK; GENERIC; PROTECTION/ IO MODULE, 16 CH SLOW 4-20MA, 8 CH T/C	8280-4089
CONTROL - LECM - GENERIC - 2-STACK: MAIN; EID, (20) DRVR	8280-4400
CONTROL - LECM - GENERIC - 3-STACK: MAIN; AUX, (8) KNK, (8) FAST 0-5V, (8) T/C; EID, (20) DRVR	8280-4401

CONTROL - LECM - GENERIC - STAND-ALONE: EID, (20) DRVR	8280-4402
CONTROL - LECM - GENERIC - 3-STACK: MAIN; AUX RTCDC, 10 CH FAST 4-20MA, 14 CH T/C; EID, 20 CH DRVR	8280-4403
CONTROL - LECM - GENERIC - 3-STACK: MAIN; AUX, (10) KNK, (14) TC; EID, (20) DRVR	8280-4404
CONTROL - LECM - GENERIC - 3-STACK: MAIN; AUX, (16) KNK, (8) TC; EID, (20) DRVR	8280-4405
CONTROL - LECM - GENERIC - 2-STACK: MAIN; AUX, (10) KNK, (14) TC	8280-4406
CONTROL - LECM SA MAIN MODULE	8280-4408
CONTROL - LECM - GENERIC - STAND-ALONE: AUX, (24) T/C	8280-4409
CONTROL - LECM - GENERIC - 3-STACK: MAIN; AUX, (24) TC; EID, (20) DRVR	8280-4410
CONTROL - LECM - GENERIC - 3-STACK: MAIN; AUX RTCDC, 2 CH FAST 4-20MA, 2 CH FAST 0-5V, 20 CH KNK; EID, 20 CH DRVR	8280-4411
CONTROL - LECM - GENERIC - 2-STACK: MAIN; AUX RTCDC, 2 CH FAST 4-20MA, 2 CH FAST 0-5V, 20 CH KNK	8280-4412
CONTROL - LECM - GENERIC - STAND-ALONE: AUX RTCDC, 2 CH FAST 4-20MA, 2 CH FAST 0-5V, 20 CH KNK	8280-4413
CONTROL - LECM - GENERIC - STAND-ALONE - AUX RTCDC, 1 CH SLOW 0-5V, 1 CH FAST 0-5V, 1 CH SLOW 4-20 MA, 1 CH FAST 4-20 MA, 20 CH KNK	8280-4414
CONTROL - LECM - GENERIC - 2-STACK: MAIN; AUX, 24 T/C	8280-4417
KIT - LECM, VIBRATION ISOLATION, MOUNTING HARDWARE	8923-2031
KIT - LECM, HARDWARE, SMALL MTG, VIBRATION ISOLATION	8923-2049
KIT - LECM, MARINE VIBRATION ISOLATION, MOUNTING HARDWARE	8923-2216
KIT - DEUTCH DT06 FOR LECM COIL	8928-7476
KIT - LECM 3-BOARD STACK STANDARD ACCESSORIES	8928-7522
KIT - LECM MAIN STANDARD ACCESSORIES	8928-7525
KIT - LECM HARNESS, AND BREAKOUT MODULE	8928-7541
KIT - LECM PINS FOR TERMINALS	8928-7555
KIT - LECM-MAIN KIT, R30 SERIES, WITH LECM ACCESSORIES	8928-7615
KIT - ELEMENT 1 MSERIES LECM KIT	10-020-609
COIL - CSA CERTIFIED LECM IGNITION COIL	1698-1230CSA
KIT - PURCHASED SECONDARY KIT FOR LECM COIL	8928-7490.KIT

12. IPCS Power Management & Power Generation Controls

easYgen-100 Line

Part Number



Autostart Controls

easYgen-400 Manual: 37884, 37890	8440-2250
easYgen-600 Manual: 37698, 37786	8440-2252
easYgen-800 Manual: 37691, 37692	8440-2254
Documentation: Product Spec: 37697	

easYgen-1000 Line

Part Number



AMF Automatic Mains Failure Controls

easYgen-1400 Manual: 37799, 37889	8440-2251
easYgen-1600 Manual: 37699, 37785	8440-2253
easYgen-1700 Manual: 37798, 37888	8440-2256
easYgen-1800 Manual: 37685, 37690	8440-2255
Documentation: Product Spec: 37686	

easYgen-2000 Simple Paralleling

Part Number



easYgen-2200-5/P1	8440-1855
easYgen-2200-1/P1	8440-1856
easYgen-2200-5/P2	8440-1857
easYgen-2200-1/P2	8440-1858
easYgen-2300-5/P1	8440-2080
easYgen-2300-1/P1	8440-2122

easYgen-2300-5/P2	8440-2058
easYgen-2300-1/P2	8440-2123
easYgen-2500-5/P1	8440-1884
easYgen-2500-1/P1	8440-1860
Documentation: Product Spec: 37548, Manual: 37535	
easYgen-2500-5/P1-K33 Rental Version	8440-2029
easYgen-2500-1/P1-K33 Rental Version	8440-2096
Documentation: Product Spec: 37553, Manual: 37537	

easYgen-3100XT/3200XT Complex Paralleling

Part Number



easYgen-3100XT	8440-2081
easYgen-3200XT-LT	8440-2083
easYgen-3200XT	8440-2082
Documentation: Product Spec: 37582, Manual: 37574	

easYgen-3400XT/3500XT Complex Paralleling

Part Number



easYgen-3400XT-P1	8440-2084
easYgen-3400XT-P2	8440-2087
easYgen-3500XT-P1	8440-2085
easYgen-3500XT-P1-LT	8440-2086
easYgen-3500XT-P2	8440-2088
easYgen-3500XT-P2-LT	8440-2089
Documentation: Product Spec: 37583, Manual: -P1 37580, - P2 37581	

easYgen-3000XT Rental**Part Number**

easYgen-3100XT-RENTAL	8440-2284
easYgen-3200XT-RENTAL	8440-2285
easYgen-3200XT-LT-RENTAL	8440-2286
easYgen-3400XT-P1-RENTAL	8440-2287
easYgen-3400XT-P2-RENTAL	8440-2289
easYgen-3500XT-P1-RENTAL	8440-2288
easYgen-3500XT-P1-LT-RENTAL	8440-2283
easYgen-3500XT-P2-RENTAL	8440-2290
easYgen-3500XT-P2-LT-RENTAL	8440-2291

Documentation: easYgen-3000XT Manual +Manual: 37935

LS-5 Breaker Controls for easYgen-3400XT/3500XT Packages CANopen Communication**Part Number****LS-521****LS-522****LS-511****LS-512****Backpanel Version 1 Breaker**

LS-511-5/P1	
LS-511-1/P1	8440-2180

Display Version 1 Breaker

LS-521-5/P1	8440-2150
LS-521-1/P1	8440-2178

Documentation: Product Spec: 37661, Manual: 37649

Backpanel Version 2 Breaker

LS-512-5/P1	8440-2153
LS-512-1/P1	8440-2181

Display Version 2 Breaker

LS-522-5/P1	8440-2151
LS-522-1/P1	8440-2179

Documentation: Product Spec: 37665, Manual: 37650

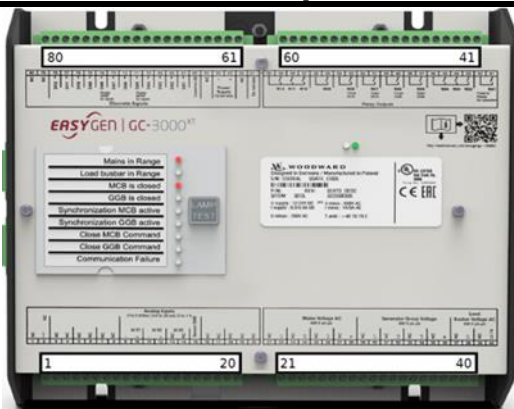
LS-6XT Breaker Controls for easYgen-3400XT/3500XT Packages Redundant E-Net Communication**Part Number**

LS-612XT-P1	8440-2222
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Documentation: Product Spec: 37913, Manual: 37914

GC-3400XT Group Controller

Part Number



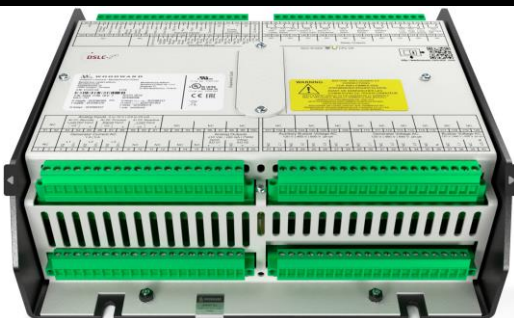
GC-3400XT-P1

8440-2267

Documentation: Product Spec: 37921, Manual: 37922

DSLCL-2XT and MSLCL-2XT Switchgear Paralleling Controls

Part Number



DSLCL-2XT

8440-2299

Documentation: Product Spec: 37963, Manual: 37948

MSLCL-2XT

8440-2298

Documentation: Product Spec: 37962, Manual: 37947

easY-I* Control for Inverter-Based Power Systems

Part Number



easY-I-3500XT-P1

8440-2292

easY-I-3400XT-P1

8440-2293

Documentation: Manual: 37957

*Contact your Woodward Sales contact

easyFlex* Free Programable Control

Part Number



easYFLEX-3400XT-P2 (GAP)

8440-2217

*Contact your Woodward sales contact

Accessories

Part Number

easYgen-3000XT Software Tools

Modbus Master Mapper

10-017-822

Modbus Telegram Mapper

9927-2582

Documentation: Manual: 37673, 37684

HMI Localization Tool

10-011-569

See Tutorials YouTube [Woodward Power Management Channel](#)

LDSS Emulation Tool

10-012-060

Documentation: Product Spec: 37594, Manual: 37928

PowerGen Learning Module

8447-1012

Documentation: Product Spec: 03412, Manual: 26736 51474

Remote Panel for easYgen-3000XT, LS6XT

Part Number



RP-3000XT

8446-1068

Documentation: Product Spec: 37594, Manual: 37928

Configuration Cable Required for easYgen-1500/2000/DTS-200/LS5/IKD1M

Part Number



DPC-USB Configuration Cable

5417-1251

DPC-1 RS232 Configuration Cable

5417-557

Documentation: Manual: 37372

Digital Expansion Cards for easYgen- 1500/2000/3000XT/LS6XT/GC-3400XT

Part Number



IKD1M 8 DI/8 DO Expansion Card

8440-2116

Documentation: Product Spec: 37171, Manual: 37135



IKD-IN-16 16 DI Expansion Card

8440-2304

Documentation: Product Spec: 37955, Manual: 37953



IKD-OUT-16 16 DO Expansion Card

8440-2304

Documentation: Product Spec: 37954, Manual: 37952

Remote Annunciator for easYgen-100/1000 line and 3000XT (Oct 2023)

Part Number



easYlite-200

8446-1007

Documentation: Product Spec: 37907, Manual: 37903, 37908

actiVgen

Part Number



actiVgen

8440-2100

Documentation: Product Spec: 03419, Manual: 26777

EKS CAN Fiber Converters

Part Number



Single

8445-1049

Redundant

8445-1048

Documentation: See [FAQ Article](#)

Exciter-10 DC Amplifier for easYgen-3400XT/3500XT AVR Regulation

Part Number



Exiter-10

10-012-909

Documentation: Product Spec: 37909, Manual: 37910

LSG Load Share Gateway

Part Number



LSG kVAR Reactive Power Analog Load Share

8444-1074

LSG kW Active Power Analog Load Share

8444-1075

Documentation: Product Spec: 37451, Manual: 37442

ESENET CANopen to MODBUS/TCP Converter

ESENET

8445-1044

Documentation: Manual: 37576

ESEPREO CANopen to PROFIBUS-DP

ESEPREO

8445-1046

Documentation: Manual: 37577

ATS Controls

Part Number



DTSC-200

DTSC-200-51B	8440-1867
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DTSC-200-55B	8440-1868
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DTSC-200-55B/K38	8440-2155
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Documentation: Product Spec: 37398, Manual: 37482, 37483, 37484, 37485, 37486



DTSC-200A	8440-2297
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Documentation: Product Spec: 37944, Manual: 37939, 37940, 37941, 37942, 37943

SPM-D Synchronizers

Part Number



2 Phase Paralleling

SPM-D2-1040B /400VAC sensing	8440-2164
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SPM-D2-1010B /110VAC sensing	8440-2166
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SPM-D2-1040B/N wide range power supply	8440-2175
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SPM-D2-1010B/N wide range power supply	8440-2174
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SPM-D2-1040B/X analog speed/voltage bias	8440-2171
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SPM-D2-1010B/X analog speed/voltage bias	8440-2168
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SPM-D2-1040B/XN analog speed/voltage bias, wide range power supply	8440-2190
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SPM-D2-1010B/XN analog speed/voltage bias, wide range power supply	8440-2172
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Documentation: Product Spec: 37622, Manual: 37615

SPM-D2-10B/PSY5-FU-D	8440-2170
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SPM-D2-10B/PSY5-FU-D-W wide range power supply	8440-2173
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Documentation: Product Spec: 37622, Manual: 37616

**2 Phase Paralleling with Single Phase CT Sensing and kW
and kVAR Analog Load Sharing Lines**

SPM-D2-1145B/LSXR	8440-2169
SPM-D2-1115B/LSXR	8440-2165

Documentation: Product Spec: 37623, Manual: 37618

3 Phase Paralleling

SPM-D2-1040B/YB	8440-2176
SPM-D2-1010B/YB	8440-2167
SPM-D2-1040B/NYB	8440-2189
SPM-D2-1010B/NYB	8440-2177

Documentation: Product Spec: 37622, Manual: 37617

MFR300 kW Transducers with Protection

Part Number



MFR300-71M	8444-1063
MFR300-15M	8444-1064
MFR500-6M/WK0400 + DPC USB	8444-1070
MFR300-11M	8444-1071
MFR300-11M	8444-1089
MFR300-15M	8444-1090
MFR300-71M	8444-1091
MFR300-75M	8444-1092
MFR300-75M/SU03 replacement for LR20025 MFR13	8444-1093
MFR300-75M/K28	8444-1094
MFR300-71M	8444-1095
MFR300-71M/K42	8444-1104
MFR300-75M	8444-1107
MFR300-75M/K45	8444-1108
MFR300-71M	8444-1109
MFR300-71M/K45	8444-1111
MFR300-71M/K53	8444-1112

Documentation: Product Spec: 37406, Manual: 37938

easYprotec-100

Part Number



easYPROTEC-1410-7	8441-1161
easY2116PROTEC-1410-1	8441-1160
Documentation: Manual: 37541	

easYgen-3100/3200

Part Number



easYgen-3200-1/P1	8440-2049
easYgen-3200-5/P1	8440-2050
easYgen-3200-1/P2	8440-2051
easYgen-3200-5/P2	8440-2052
easYgen-3100-5/P1	8440-2054
easYgen-3100-1/P1	8440-2055
easYgen-3100-5/P2	8440-2056
easYgen-3100-1/P2	8440-2057

Documentation: Product Spec: 37258, Manual: 37532

easYgen-3400/3500/P1/P2

Part Number

easYgen-3500-5/P1	8440-1934
easYgen-3500-1/P1	8440-1935
easYgen-3500-5/P2	8440-1936
easYgen-3500-1/P2	8440-1937
easYgen-3400-5/P1	8440-1945
easYgen-3400-1/P1	8440-1956
easYgen-3400-5/P2	8440-2078
easYgen-3400-1/P2	8440-2079

Documentation: Product Spec: 37523, Manual: 37528

easYgen-3400/3500/P1/P2 RENTAL Packages

Part Number

easYgen-3500-5/P1-K32	8440-2030
easYgen-3500-1/P1-K32	8440-2095
easYgen-3500-1/P2-K32	8440-2191
easYgen-3500-5/P2-K32	8440-2192

Documentation: Manual: 37528 37536

RP-3000

Part Number



RP-3000	8446-1048
RP-3500-P1-K32-RENTAL	8446-1059
RP-3500-P2-K32-RENTAL	8446-1062
RP-3000-MARINE additional DNV and BV	8446-1046
Documentation: Product Spec: 37446, Manual: 37534	

RP-3000 Ordering Table

The RP-3000 remote panels support the following easYgen-3000 genset controls:

Remote Panel...	Supporting easYgen...	P/N
RP-3000...	...supporting easYgen-3100/3200-P1/P2	Software version 1.17xx or higher
	...supporting easYgen-3400/3500-P1/P2	all
	...supporting easYgen-3400/3500 Marine	all
	...supporting easYgen-3400-P1 Rental	all
	...supporting easYgen-3500-P2 Rental	all

easYgen-3400/3500, LS5 & RP-3000

MARINE Packages

	Part Number
easYgen-3500-5/P1-MARINE additional BV & DNV	8440-2047
easYgen-3500-1/P1-MARINE additional BV & DNV	8440-2046
easYgen-3400-5/P1-MARINE additional BV & DNV	8440-2045
easYgen-3400-1/P1-MARINE additional BV & DNV	8440-2044
Documentation: Product Spec: 37533, Manual: 37531	
Backpanel version 1 breaker	
LS-511-5/P1-MARINE additional DNV and BV	8440-2077
LS-511-1/P1-MARINE additional DNV and BV	8440-2076
Documentation: Product Spec: 37545, Manual: 37542	
Display version 1 breaker	
LS-521-5/P1-MARINE additional DNV and BV	8440-2075
LS-521-1/P1-MARINE additional DNV and BV	8440-2074
Documentation: Product Spec: 37545, Manual: 37542	
RP-3000 Marine	
RP-3000-MARINE additional DNV and BV	8446-1046
Documentation: Product Spec: 37446, Manual: 37534	

SPM-A Synchronizers

Part Number



SPM-A STD NON VOLTAGE MATCH	9907-028
SPM-A STD VOLTAGE MATCHING	9907-029
Documentation: Product Spec: 82383, Manual: 82384	

LSM Load Sharing Module

Part Number



Load Sharing Module 120VAC, (ANALOG)	9907-173
Load Sharing Module 24VDC, (0-5V)	9907-252
Load Sharing Module 24VDC, (PWM)	9907-838

Documentation: Product Spec: 82686, Manual: 02029

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