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# Solenoid Valves

## VE400AA SOLENOID GASVALVES



Class 'A' Safety valve, normally closed, fast opening, with AC coils, threaded connection

Type	Pmax, mbar	Connection size	Supply voltage
VE408 AA1007	500	1/4"	230 Vac
VE410 AA1003	200	3/8"	230 Vac
VE415 AA1008	200	1/2"	230 Vac
VE420 AA1001	200	3/4"	230 Vac

## VE4000A SOLENOID GASVALVES



Class 'A' Safety valve, normally closed, fast opening, threaded connection

Type	Pmax, mbar	Connection size	Supply voltage
VE4010 A1006	360	3/8"	230 Vac
VE4015 A1005	360	1/2"	230 Vac
VE4020 A1005	200	3/4"	230 Vac
VE4025 A1004	200	1"	230 Vac
VE4032 A1000	200	1-1/4"	230 Vac
VE4040 A1003	200	1-1/2"	230 Vac
VE4050 A1002	200	2"	230 Vac
VE4065 A1000	200	2-1/2"	230 Vac

## VE4000B1 SOLENOID GASVALVES WITH FLOW REGULATION

Class 'A' Safety valve, normally closed, fast opening, threaded connection



Type	Pmax, mbar	Connection size	Supply voltage
VE4010 B1005	360	3/8"	230 Vac
VE4015 B1004	360	1/2"	230 Vac
VE4020 B1004	200	3/4"	230 Vac
VE4025 B1003	200	1"	230 Vac
VE4032 B1009	200	1-1/4"	230 Vac
VE4040 B1002	200	1-1/2"	230 Vac
VE4050 B1001	200	2"	230 Vac
VE4065 B1017	200	2-1/2"	230 Vac
VE4080 B1016	200	3"	230 Vac

# Soleonid Valves

## VE4000B3 SOLENOID GASVALVES WITH FLOW REGULATION



Class 'A' Safety valve, normally closed, fast opening, flanged connection

Type	Pmax, mbar	Connection size	Supply voltage
VE4065 B3005	200	DN65	230 Vac
VE4080 B3004	200	DN80	230 Vac
VE4100 B3000	200	DN100	230 Vac

## VE4000C SLOW OPENING SOLENOID GASVALVES WITH FLOW REGULATION



Class 'A' Safety valve, normally closed, slow opening, threaded connection

Type	Pmax, mbar	Connection size	Supply voltage
VE4010 C1004	200	3/8"	230 Vac
VE4015 C1003	200	1/2"	230 Vac
VE4020 C1003	200	3/4"	230 Vac
VE4025 C1002	200	1"	230 Vac
VE4032 C1008	200	1-1/4"	230 Vac
VE4040 C1001	200	1-1/2"	230 Vac
VE4050 C1000	200	2"	230 Vac

## VE4000S SAFETY RELIEF SOLENOID VALVES



Vent valve, normally open, fast opening, threaded connection

Type	Pmax, mbar	Connection size	Supply voltage
VE4020 S1038	200	3/4"	230 Vac
VE4025 S1037	200	1"	230 Vac
VE4020 S2044 *	200	3/4"	230 Vac
VE4025 S2035 *	200	1"	230 Vac

\* with Closed Position Indication Switch

# Electro-hydraulic valves

## VE5000A GASVALVES WITH FLUID POWER ACTUATOR

For ON/OFF operation, flanged connection

Type	Connection size	Actuator type V4055A	Actuator type V4055B
VE5065 B3005	DN65	360 mbar	-
VE5080 B3004	DN80	360 mbar	-
VE5100 B3000	DN100	-	360 mbar

## VE5000C SLOW OPENING GASVALVES WITH FLUID POWER ACTUATOR

For high/low or modulation operation, flanged connection



Type	Connection size	Actuator type V4062A	Actuator type V9055A
VE5065 C3003	DN65	360 mbar	360 mbar
VE5080 C3002	DN80	360 mbar	360 mbar
VE5100 C3008	DN100	200 mbar	200 mbar

## FLUID POWER VALVE ACTUATORS FOR VE5000 VALVES



Type	operation	closing time	Opening time	Pmax, mbar	Supply voltage
V4055 A1130	ON/OFF	< 1sec.	16 sec.	360	230 Vac
V4062 A1030	high/low	< 1sec.	16 sec.	360	230 Vac
V9055 A1005	modulation	< 1sec.	32 sec.	360	230Vac

## BT-BC668 SLOW OPENING SAFETY VALVES

Class 'A' Safety valve, normally closed, slow opening, flanged connection



Type	Pmax, mbar	Connection size	Supply voltage
BT-BC6689 FL4	500	DN150	230 Vac
BT-BC66810 FL4	250	DN200	230 Vac
BT-BC 66811 FL4	250	DN250	230 Vac

# Semi-automatic safety valves

## VG400AA MANUAL RESET SOLENOID VALVES



Class 'A' Safety valve, normally closed, fast opening, threaded connection

Type	Pmax, mbar	Connection size	Supply voltage
VG415 AA1004	500	1/2"	230 Vac
VG420 AA1007	500	3/4"	230 Vac
VG425 AA1002	500	1"	230 Vac

## VG400SA MANUAL RESET SOLENOID VALVES



Safety valve, normally open, fast opening, threaded connection

Type	Pmax, mbar	Connection size	Supply voltage
VG415 SA1002	500	1/2"	230 Vac
VG420 SA1005	500	3/4"	230 Vac
VG425 SA1000	500	1"	230 Vac

## VG4000A1 MANUAL RESET SOLENOID VALVES



Class 'A' Safety valve, manually opened, normally closed, fast opening, threaded connection

Type	Pmax, mbar	Connection size	Supply voltage
VG4032 A1006	500	1-1/4"	230 Vac
VG4040 A1009	500	1-1/2"	230 Vac
VG4050 A1008	500	2"	230 Vac
VG4065 A1006	360	2-1/2"	230 Vac
VG4080 A1005	360	3"	230 Vac

## VG4000A3 FLANGED MANUAL RESET SOLENOID VALVES



Class 'A' Safety valve, manually opened, normally closed, fast opening, flanged connection

Type	Pmax, mbar	Connection size	Supply voltage
VG4065 A30	360	DN65	230 Vac
VG4080 A30	360	DN80	230 Vac
VG4100 A30	360	DN100	230 Vac





# Combination gas controls

## VQ420 & VQ425 COMBINATION GAS CONTROLS



Combination gasvalves with 2 class „A“ valves with options for minimum and maximum pressure switches, bypass/pilot/hi-low valves, as well as a Valve Proving System.

VQ420 connection size: 3/4", maximum inlet pressure: 360 mbar

VQ420..	Main valve 1	Main valve 2	Hi/low bypass	Vent valve	External pilot
AA	fast	fast	-	-	-
AB	fast	slow	-	-	-
BA	fast	fast	fast	-	-
BB	fast	slow	fast	-	-
BC	fast	fast	slow	-	-
BD	fast	slow	slow	-	-
CB	fast	slow	-	yes with CPI switch	-
DB	fast	slow	fast	yes	-
EA	fast	fast	-	-	yes
EB	fast	slow	-	-	yes
FD	fast	slow	slow	-	yes
JB	fast	slow	-	yes	yes

VQ425 connection size: 1", maximum inlet pressure: 360 mbar

VQ425..	Main valve 1	Main valve 2	Hi/low bypass	Vent valve	External pilot
AA	fast	fast	-	-	-
AB	fast	slow	-	-	-
BA	fast	fast	fast	-	-
BB	fast	slow	fast	-	-
BC	fast	fast	slow	-	-
BD	fast	slow	slow	-	-
CA	fast	fast	-	yes	-
CB	fast	slow	-	yes	-
EA	fast	fast	-	-	yes
EB	fast	slow	-	-	yes
FA	fast	fast	fast	-	yes
FB	fast	slow	fast	-	yes
GB	fast	slow	fast	-	internal
JB	fast	slow	-	yes	yes

# Combination gas controls

## VQ440 & VQ450 COMBINATION GAS CONTROLS



Combination gasvalves with 2 class „A“ valves with options for minimum and maximum pressure switches, bypass/pilot/hi-low valves, as well as a Valve Proving System.

VQ440 connection size: 1-1/2", maximum inlet pressure: 200 mbar

VQ440..	Main valve 1	Main valve 2	Hi/low bypass	Vent valve	External pilot
AA	fast	fast	-	-	-
AB	fast	slow	-	-	-
BA	fast	fast	fast	-	-
	fast	slow	fast	-	-
BC	fast	fast	slow	-	-
BD	fast	slow	slow	-	-
CB	fast	slow	-	yes	-
DD	fast	slow	slow	yes	-
EA	fast	fast	-	-	yes
EB	fast	slow	-	-	yes
FA	fast	fast	fast	-	yes
FB	fast	slow	fast	-	yes
GA	fast	fast	fast	-	internal
GC	fast	fast	slow	-	internal
JB	fast	slow	-	yes with CPI switch	yes

VQ450 connection size: 2", maximum inlet pressure: 200 mbar

VQ450..	Main valve 1	Main valve 2	Hi/low bypass	Vent valve	External pilot
AA	fast	fast	-	-	-
AB	fast	slow	-	-	-
BA	fast	fast	fast	-	-
BB	fast	slow	fast	-	-
BC	fast	fast	slow	-	-
BD	fast	slow	slow	-	-
CA	fast	fast	-	-	-
CB	fast	slow	-	yes	-
EA	fast	fast	-	-	yes
EB	fast	slow	-	-	yes
FB	fast	slow	fast	-	yes

# Combination gas controls

## VQ465 & VQ480 COMBINATION GAS CONTROLS



Combination gasvalves with 2 class „A“ valves with options for minimum and maximum pressure switches, bypass/pilot/hi-low valves, as well as a Valve Proving System.

VQ465 connection size:2-1/2“, maximum inlet pressure: 200 mbar

VQ465..	Main valve 1	Main valve 2	Hi/low bypass	Vent valve	External pilot
AA	fast	fast	-	-	-
AB	fast	slow*	-	-	-
BA	fast	fast	fast	-	-
BB	fast	slow*	fast	-	-
BC	fast	fast	slow	-	-
BD	fast	slow*	slow	-	-
Cx	fast	fast/slow	-	yes	-
Ex	fast	fast/slow	-	-	yes
Fx	fast	fast/slow	yes	-	yes
Gx	fast	fast/slow	yes	-	internal
Hx	-	fast/slow	yes	-	-
Jx	fast	fast/slow	-	yes	yes

VQ480 connection size: 3“, maximum inlet pressure: 200 mbar

VQ480..	Main valve 1	Main valve 2	Hi/low bypass	Vent valve	External pilot
AA	fast	fast	-	-	-
AB	fast	slow*	-	-	-
BA	fast	fast	fast	-	-
BB	fast	slow*	fast	-	-
BC	fast	fast	slow	-	-
BD	fast	slow*	slow	-	-
Cx	fast	fast/slow	-	yes	-
Ex	fast	fast/slow	-	-	yes
Fx	fast	fast/slow	yes	-	yes
Gx	fast	fast/slow	yes	-	internal
Hx	-	fast/slow	yes	-	-
Jx	fast	fast/slow	-	yes	yes

\* In case of slow opening, the fluid power actuator has to be purchased separately.

# Combination gas controls

## VR400 COMBINATION GAS CONTROLS WITH PRESSURE REGULATOR



Combination Gas Valves with 2 class „A“ closing force safety valves and one servo pressure regulated control valve, including fine mess strainer at inletside. Versions for Direct Burner Ignition (DBI) and Intermittent Pilot (IP). Options for minimum and maximum pressure switches.

Type	Pmax, mbar	Connection size	Supply voltage
VR415..	200	½"	230 Vac
VR420..	200	¾"	230 Vac
VR425..	200	1"	230 Vac
VR432..	200	Big Bore 1"	230 Vac
VR434..	200	1-¼"	230 Vac



### With On/Off standard pressure regulator (3 to 37 mbar)

VR4xx AA	<i>Fast opening DBI versions</i>
VR4xx AB	<i>Slow opening DBI versions</i>
VR4xx AE	<i>Fast opening IP versions</i>
VR4xx AF	<i>Slow opening IP versions</i>

### With High/Low pressure regulator (4 to 37 mbar)

VR4xx PA	<i>Fast opening DBI versions</i>
VR4xx PB	<i>Slow opening DBI versions</i>
VR4xx PE	<i>Fast opening IP versions</i>
VR4xx PF	<i>Slow opening IP versions</i>

With „modureg“ regulator (3 to 37mbar), allows electrical modulation of the outlet pressure. To be used with QM100A1009 modureg driver

VR4xx MA	<i>Fast opening DBI versions</i>
VR4xx MB	<i>Slow opening DBI versions</i>
VR4xx ME	<i>Fast opening IP versions</i>

### With Gas/air 1:1 regulator and fast opening second valve, for applications of 150...590 kW output

VR4xx VA	<i>DBI versions</i>
VR4xx VE	<i>IP versions</i>

## VRB COMBINATION GAS CONTROLS WITH PRESSURE REGULATOR

Combination Gas Valves with 2 class „B“ closing force safety valves and one servo pressure regulated control valve, including fine mess strainer at inletside. Versions for Direct Burner Ignition (DBI) and Intermittent Pilot (IP).

Type	Pmax, mbar	Connection size	Supply voltage
VRB25 PA1205	200	1"	230 Vac

# Motorized throttle valves

## VT4000A MOTORIZED THROTTLE GAS VALVES



Using MT4000 or MF4000 Series servo motor as rotation actuator with standard on/off floating contacts. Stroke time and supply voltage are depending on motor model.

Type	Pmax, mbar	Connection size	Supply voltage
VT4025 A1009	360	1"	230 Vac
VT4050 A1007	360	2"	230 Vac

## VT5000M1 MOTORIZED THROTTLE GAS VALVES

Throttle Valve with adaptor plate to accomodate Mod IV or MF4000 motors. Stroke time and supply voltage are depending on motor model.

Type	Pmax, mbar	Connection size	Supply voltage
VT5025 M1005 (with Mod IV adaptor)	360	1"	230 Vac
VT5025 M1013 (with MF4000 adaptor)	360	1"	230 Vac
VT5050 M1003 (with Mod IV adaptor)	360	2"	230 Vac
VT5050 M011 (with MF4000 adaptor)	360	2"	230 Vac

## VT5000M2 MOTORIZED THROTTLE GAS VALVES

Throttle Valve with adaptor plate to accomodate LKS160 motors. Stroke time and supply voltage are depending on motor model.

Type	Pmax, mbar	Connection size	Supply voltage
VT5025 M2003	360	1"	230 Vac
VT5050 M2001	360	2"	230 Vac

## V5197 FIRING RATE GAS VALVES



Throttle valve with adaptor plate accomodate Mod IV or MF4000 motors. Stroke time and supply voltage are depending on motor model.

Type	Pmax, mbar	Connection size	Supply voltage
V5197 A1029	1000	DN65	230 Vac
V5197 A1037	1000	DN80	230 Vac

# Butterfly Valves

## VF5000A MANUALLY OPERATED BUTTERFLY VALVES



Manually operated flanged valve, with option to mount MT4000 or MF4000 Series servo motors.

Type	Pmax, mbar	Connection size
VF5025 A3007	500	DN25
VF5032 A3003	500	DN32
VF5040 A3006	500	DN40
VF5050 A3005	500	DN50
VF5065 A3003	500	DN65
VF5080 A3002	500	DN80
VF5100 A3008	500	DN100
VF5125 A3005	500	DN125
VF5150 A3003	500	DN150

## VF5000R MANUALLY OPERATED BUTTERFLY VALVES

Manually operated flanged valve, with reduced capacity and option to mount MT4000 or MF4000 Series servo motors.

Type	Pmax, mbar	Connection size
VF5025 R3009	500	DN20
VF5032 R3005	500	DN25
VF5040 R3008	500	DN32
VF5050 R3007	500	DN40
VF5065 R3005	500	DN50
VF5080 R3004	500	DN65
VF5100 R3000	500	DN80
VF5125 R3007	500	DN100
VF5150 R3005	500	DN125

# Gas pressure regulators

## HUP(F) GAS PRESSURE REGULATORS



Spring loaded gas pressure regulator with inlet pressure compensation and zero shut-off and possibility of incorporated filter.

Type – with filter	Type – without filter	Connection	Connection size	Pmax, mbar
HUPF015 B150	HUP015 B150	threaded	1/2"	1000
HUPF020 B150	HUP020 B150	threaded	3/4"	1000
HUPF025 B150	HUP025 B150	threaded	1"	1000
HUPF032 B150	HUP032 B150	threaded	1-1/4"	1000
HUPF040 B150	HUP040 B150	threaded	1-1/2"	1000
HUPF050 B150	HUP050 B150	threaded	2"	1000
-	HUP040 B350	flanged	DN40	1000
-	HUP050 B350	flanged	DN50	1000
HUPF065 B350	HUP065 B350	flanged	DN65	1000
HUPF080 B350	HUP080 B350	flanged	DN80	1000
HUPF100 B350	HUP100 B350	flanged	DN100	1000

## REPLACEMENT CARTRIDGE FILTERS FOR HUPF GAS PRESSURE REGULATORS

Type	Regulator types
KTFL31150/C1	HUPF015B150, HUPF020B150, HUPF025B150
KTFL31153/C1	HUPF032B150, HUPF040B150
KTFL31155/C1	HUPF050B150
KTFL31156/C1	HUPF065B350, HUPF080B350
KTFL31158/C1	HUPF100B350

## SPRING SELECTION MATRIX – HRSPXXX

Type	Green 5-13 mbar	Red 7-20 mbar	White 10-30 mbar	Yellow 25-55 mbar	Blue 30-70 mbar	Black 60-110 mbar	Violet 110-150 mbar	Orange 140-350 mbar	Pink 350-500 mbar
HUP(F)015/020 HUPF025	150M1	150M2	150M3	150M4	150M5	150M6	150M7	150M8	150M9
HUP025	152M1	152M2	152M3	152M4	152M5	152M6	152M7	152M8	152M9
HUP(F)032/040	153M1	153M2	153M3	153M4	153M5	153M6	153M7	153M8	153M9
HUP(F)050	155M1	155M2	155M3	155M4	155M5	155M6	155M7	155M8	155M9
HUP(F)065/080	156M1	156M2	156M3	156M4	156M5	156M6	156M7	156M8	156M9
HUP(F)100	158M1	158M2	158M3	158M4	158M5	158M6	158M7	158M8	158M9

# Gas filters

## HUF GAS FILTERS



Gas filter with filter element consisting of 2 long life Viledon P15/500S DIN F017/82 filter panels.

Type	Connection	Connection size	Pmax, mbar
HUF015 B110	threaded	1/2"	2000
HUF020 B110	threaded	3/4"	2000
HUF025 B110	threaded	1"	2000
HUF032 B110	threaded	1-1/4"	2000
HUF040 B110	threaded	1-1/2"	2000
HUF025 B340	flanged	DN 25	2000
HUF032 B340	flanged	DN 32	2000
HUF040 B340	flanged	DN40	2000
HUF050 B340	flanged	DN50	2000
HUF065 B340	flanged	DN65	2000
HUF080 B340	flanged	DN80	2000
HUF100 B340	flanged	DN100	2000
HUF150 B340	flanged	DN150	2000



## REPLACEMENT CARTRIDGE FILTERS FOR HUF GAS FILTERS

Type	Filter types
KTFL10201/C1	HUF015B110, HUF020B110, HUF025B340
KTFL10203/C1	HUF025B110, HUF032B110, HUF032B340, HUF040B110, HUF040B340
KTFL10206/C1	HUF050B110, HUF050B340
KTFL10207/C1	HUF065B340, HUF080B340
KTFL10209/C1	HUF100B340
KTFL10210/C1	HUF150B340



# Flexible tubings

## HUG FLEXIBLE TUBINGS

Stainless steel flexible tubings for stress-free gastrain installation



Type	Connection	Connection size	Pmax, mbar
HUG015 B110	threaded	1/2"	2500
HUG020 B110	threaded	3/4"	2500
HUG025 B110	threaded	1"	2500
HUG032 B110	threaded	1-1/4"	2500
HUG040 B110	threaded	1-1/2"	2500
HUG050 B110	threaded	2"	2500
HUG065 B110	flanged	2-1/2"	2500
HUG050 B310	flanged	DN50	2500
HUG065 B310	flanged	DN65	2500
HUG080 B310	flanged	DN80	2500
HUG100 B310	flanged	DN100	2500

# Pressure switches

## C6097A PRESSURE SWITCHES



Gas pressure switch „stand alone“ model with 1/4" Rp connection at the bottom, with PG11 connection for electrical wiring

Type	Operating range, mbar	Nominal operating differential, mbar	Pmax, mbar
C6097 A2110	1...10	0,4	200
C6097 A2210	2,5...50	0,6	300
C6097 A2310	30...150	2,8	500
C6097 A2410	100...500	7,0	600

## C6045D PRESSURE SWITCHES

Gas pressure switch „stand alone“ model with 1/4" Rp connection at the bottom, with PG11 connection for electrical wiring

Type	Operating range, mbar	Nominal operating differential, mbar	Pmax, mbar
C6045 D1019	5...50	1,2-2,5	200
C6045 D1027	15...150	3,5-10	200
C6045 D1043	0,2...3	0,3-0,5	100
C6045 D1050	1...10	0,5-1	100

# Servo motors, valve actuators

## MT4000 SERVO MOTORS FOR AIR DAMPERS AND VF5000 BUTTERFLY VALVES



Servo motors to control and govern air lock of gaseous and liquid fuel burners

Type	Description
MT4000A	For combustion air dampers and VF5000 butterfly valves. External signals for modulation required. Stroke timing on 90°: 6, 24 or 48 sec., left or right rotation
MT4000B	For combustion air dampers and VF5000 butterfly valves. Including relay for one external modulation input. Stroke timing on 90°: 6, 12 or 24 sec., left or right rotation
MT4001A	For air dampers in gas burners. To be used with full featured ignition controllers and 3-wire thermostats. Stroke timing on 90°: 6 sec. (left rotation), 24 sec. (right rotation)
MT4001B	For air dampers in gas burners. With low fire adjustment switch. To be used with full featured ignition controllers and 2-wire thermostats. Stroke timing on 90°: 6, 12, 24 or 30 sec., left or right rotation
MT4001C	For air dampers in gas burners. To be used with Satronic TMG 740 ignition controller. Stroke timing on 90°: 6 sec. (left rotation)
MT4002B	For air dampers in oil burners. Including relay for 2-wire thermostat connection. With low fire adjustment switch. Left or right rotation
MT4003C	Intelligent servo motor for air dampers in gas burners. To be used with on/off ignition controllers. The unit includes high/low function during pre-purge and 'run' position. Including relay for 2-wire thermostat connection and positioning switch. Stroke timing on 90°: 6 sec. (left or right rotation)
MT4004A	For air dampers in gas burners. To be used with full featured ignition controller: Satronic DMG 972. Stroke timing on 90°: 12 or 24 sec. (right rotation)

## MF4000 HEAVY DUTY SERVOMOTORS FOR BUTTERFLY AND THROTTLE VALVES



Servo motors for general purpose applications and for VF5000 butterfly valves.

Type	Description
MF4000A	Floating adjustment with 3 free standard switches.  External signals for modulation required. Stroke timing on 90°: 15, 30 or 60 sec.
MF4000B	Floating adjustment with 3 free standard switches. With internal relay for ON/OFF adjustment. Stroke timing on 90°: 15, 30 or 60 sec.
MF4000P	Floating adjustment with 3 free standard switches and 1 or 2 feedback potentiometer(s). External signals for modulation required.

# Burner control systems

## 7800 SERIES BURNER PROGRAMMERS



- Universal burner programmers with modular construction.
- Self-checking relay module with selectable purgecards.
- With plug-in flame signal amplifier - R78xx series which can be standard or self-checking versions.
- Prepurge time can be selected between 2 sec. and 30 min. by using the proper ST7800A purge cards.
- First safety time: 5 or 3 sec.
- Internal non-volatile memory stores the last 6 failures.
- Easily understandable message visualisation in the optional S7800A keyboard display module.
- Basic function indication through 5 LEDs.
- Modbus communication through the S7810M modul.

## EC7800 RELAY MODULES FOR 230VAC POWER SUPPLY

Type	Description
EC7810A	For single fuel atmospheric burner applications.
EC7820A	For single fuel fan assisted atmospheric burner applications.
EC7830A	For combination or single fuel ON/OFF power burner applications.
EC7850A	For combination or single fuel modulating power burner applications.
EC7890A	For atmospheric burners without prepurge

## Q7800 SUBBASES FOR WALL OR PANEL MOUNTING

Type	Description
Q7800 A1005	For mounting in cabinet - standard
Q7800 B1003	For mounting on burner or wall

## ST7800 PREPURGE CARDS

Type	Description	Type	Description
ST7800 A1013	7 sec.	ST7800 A1088	4 min.
ST7800 A1021	10 sec.	ST7800 A1096	6 min.
ST7800 A1039	30 sec.	ST7800 A1104	9 min.
ST7800 A1047	40 sec.	ST7800 A1112	12 min.
ST7800 A1054	60 sec.	ST7800 A1120	15 min.
ST7800 A1062	90 sec.	ST7800 A1138	22 min.
ST7800 A1070	2,5 min.	ST7800 A1146	30 min.

# Burner control systems

## R7800 AMPLIFIERS FOR FLAME SENSORS

Type	Description	FFRT	Type of flame sensor
<b>UV flame detector amplifiers</b>			
R7847 C1005	self-checking	2 sec.	Ñ7012E/F
R7849 A1023	standard	2 sec.	Ñ7027A, Ñ7035A, Ñ7044
R7849 A1015	standard	1 sec.	
R7849 B1013	self-checking	1 sec.	Ñ7027A, Ñ7035A, Ñ7044
R7849 B1021	self-checking	2 sec.	
R7851 B1000	self-checking	1 sec.	C7927, C7961
R7861 A1026	self-checking	1 sec.	Ñ7061
R7861 A1034	self-checking	2 sec.	Ñ7061
R7886 A1001	self-checking	2 sec.	Ñ7076

### Amplifiers for ionisation electrodes

R7847 A 033	standard	2 sec	electrodes
R7847 A1025	standard	1 sec	Ñ7005, Ñ7008, Ñ7009, Q179; electrodes
R7847 B1023	self-checking	1 sec	
R7847 A1074	self-checking	1 sec	C7012A/C; electrodes
R7847 B1031	self-checking	3 sec	electrodes

## S7800 KEYBOARD DISPLAY MODULES

Type	Display language	Type	Display language
S 7800 A 1001	English	S 7800 A 1068	Spanish
S 7800 A 1035	French	S 7800 A 1118	Japanese
S 7800 A 1043	German	S 7800 A 1176	Portuguese
S 7800 A 1050	Italian	S 7800 A 1009	Chinese

## S7810/20 REMOTE COMMUNICATION MODULES

Type	Description
S 7810 A 1009	Databus module for remote mounting of keyboard display with serial communication.
S 7820 A 1007	Remote reset module.
S 7810 M 1029	Serial communication Modbus modul.

# Flame detector

## MINIPEEPER® UV FLAME SENSORS



Type	Description
<b>Minipeeper® UV flame sensors with straight viewing</b>	
C7027 A1049	Compact flame sensor, -18...+102°C, ½" NPT, 2,4m cable
C7027 A1064	Compact flame sensor, -40...+102°C, ½" NPT, 2,4m cable
C7035 A1023	Flame sensor with replaceable UV tube, -18...+121°C, 1" NPT, 1,8m cable
C7035 A1031	Flame sensor with replaceable UV tube, -40...+121°C, 1" NPT, 1,8m cable
<b>Flame sensors with straight or side viewing</b>	
C7044 A1006	Compact flame sensor, -18...+102°C, ½" NPT, 1,8m cable
C7927 A1008	Compact solid state flame sensor , -20...+60°C, ½" NPT, 1,2m cable

## SELF-CHECKING UV FLAME SENSORS



Type	Description
C7061 A1020	-40...+70°C, ¾" NPT flange, supply voltage: 230V or 110V
C7961 A	Solid state flame sensors
C7076 A1031	Adjustable sensitivity, -40...+70°C
C7061 F1003	Explosion-proof self/checking flame sensor, -20...+70°C
C7076 F1027	Explosion-proof self/checking flame sensor with adjustable sensitivity,-20...+70°C

## IONISATION ELECTRODES

Type	Description
C7008 A1000	Electrode, 152 mm long, diameter 22 mm
C7008 A1018	Electrode, 305 mm long, diameter 22 mm
C7008 A1034	Electrode, 612 mm long, diameter 22 mm
C7009 A1025	Mini-electrode, cuttable 305 mm long, diameter 10 mm

## FLAME SENSOR & AMPLIFIER SELECTION CHART

Type	Standard		Self-checking	
	7800 Series		R4348B	
<b>2 sec FFRT.</b>				
C7027/35/44	R7849A1023	-	R7323B1026	-
C7061	-	R7861A1034	-	R7061A1016
C7076	-	R7886A1001	-	R7476A1007
Ionisation	R7847A1033	R7847B1031	R7321B1028	R7247B1011
<b>1 sec FFRT.</b>				
C7027/35/44	R7849A1049	-		
C7061	-	R7861A1034		
C7076	-	R7886A1001		
Ionisation	R7847A1058	R7849B1049		

## **CONTROLINKS™ fuel-air ratio controls**

### **R7999 FUEL-AIR RATIO CONTROL UNIT**



High precision ratio control without mechanical links, with the following advantages

- 0.1% accuracy, by using independent fuel-air ratio curves
- reduced installation cost
- Simpler and faster operation, without mechanical links
- New safety methods, like feedback potentiometer circuit.

### **ML7999 UNIVERSAL PARALLEL SERVOMOTOR**



For air dampers, throttle valves, flugas recirculation dampers

The servomotor has feedback to the R7999 unit through a precision potentiometer circuit to achieve repositioning, thus providing optimal burner capacity.

### **ZM7999 INSTALLATION SOFTWARE PACKAGE**

With a Windows-compatible online installation guide.

The software has a descriptive help function to follow adjustment step by step, and a monitoring function to show the fault history.

# Valve proving systems

## A4021A ELECTRONIC VALVE PROVING SYSTEM



Microprocessor based universal valve proving system. Stages of operation and test results are visualised through LEDs. Can be used on any pressure, depending on the pressure range, allowed by the system pressure switch. Can be used to any pressure allowed by the selected pressure switch.

Type	Description
A4021 A1002	Electronic valve proving system, supply voltage 230V/50Hz
A4021 A1010	Electronic valve proving system, supply voltage 110V/50Hz

### Accessories

ZL030001	subbase for mounting the VPS
1030002020	Mounting bracket for VQ combination valves
KTVPS01	Kit for mounting on VQ valves.Consists of a A4021 VPS unit, a pressure switch and a mounting bracket.



# Servo motors, valve actuators

## LKS SERVO MOTORS FOR AIR DAMPERS

Servo motors for general use for combustion air dampers.



Type	Description
LKS118	For small burners with simple air damper control (open/close) Stroke timing: 5 sec., 0,6 Nm
LKS131	For 1 or 2-stage oil and gas burners with or without fully closing damper. Stroke timing: 5, 15 or 38 sec., 0,6 Nm
LKS160	For air dampers on multi-stage or modulating oil and gas burners with fully closing dampers. Stroke timing: 3...65 sec., 1,5...3,0 Nm
LKS170	For direct coupled air dampers on multi-stage or modulating oil and gas burners with fully closing dampers. Stroke timing: 5...30 sec., 1,2...2,8 Nm
LKS310	For air dampers with higher torque and industrial applications. Stroke timing: 3, 5...30 sec., 3,5...15,0 Nm

## MODUTROL IV SERVO MOTORS

Industrial actuator motors for valves and air dampers.



Type	Description
M4185/6, M8185	Two position, spring-return motors. Stroke timing: 30...60 sec.
M6184, M6194	Reversing, 3-wire spdt or floating control motors. Stroke timing: 15...240 sec.
M6284, M6294	Reversing, 3-wire floating control motors with feedback potentiometer. Used with controllers that provide a spdt output. Stroke timing: 30...240 sec.
M6285/6	Spring return motors with isolated feedback potentiometer, used with spdt or floating controls. Stroke timing: 30 or 60 sec.
M7164, M7185	Proportional motors used with a modulating dc voltage source. Stroke timing: 30 or 60 sec.
M7284/5/6, M7294	Proportional motors used with a modulating 2-10Vdc or 4-20mA input signal. Stroke timing: 15, 30, 60 or 120 sec.
M9164, M9174, M9184, M9194	Reversing, proportional motors Stroke timing: 15...240 sec.
M9175, M9185/6	Reversing, proportional, spring return motors Stroke timing: 30...60 sec.

บริษัท: บริษัท เอดีดี เฟอร์เนส จำกัด  
Add Furnace Co.,Ltd.

ที่อยู่:(bangkok) 44 ซ.บรมราชชนนี 70 ถ.บรมราชชนนี ศาลาธรรมสพน์ ทวีวัฒนา กทม. 10170.

website: <https://www.add-furnace.com/>

e-mail: sales@add-furnace.com add028883472@gmail.com

โทร.(ออกแบบ): 08-08-170-170, 088-300-1122

โทร: 02-888-3472

Online Support: Line ID: @add11 Wechat ID: add0883001122

แฟกซ์: 02-888-3258

 line ID: @add11