Honeywell

Honeywell Thermal Solutions Europe

INDUSTRIAL TECHNICAL CATALOGUE

(Honeywell Brand)

2019-2020

Honeywell Industrial Controls

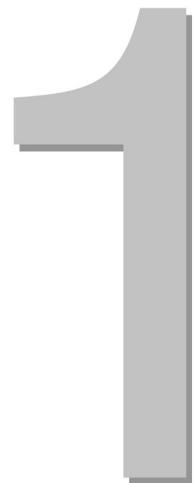# Unit conversion table

Honeywell Industrial Controls

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Honeywell

SLATE system

SLATE(TM) Combustion Management System

R8001A1001

With the revolutionary integration of configurable safety and programmable logic, SLATE[TM] is easily customized for virtually any application in any industry, in less time, and with far less complexity.
Universal I/O scheme lets you choose how to use each module, and the customizable touchscreen display or PC web browser (optimized for Chrome[TM]) allows you to easily change the end user experience.

- Burner management
- Steam generation
- Kilns and ovens
- Commercial and industrial boilers
- Make-up air
- Process heating

Approvals	• **CE** approved: EN298 for burner controllers in continuous operation, EN12067-2 for electronic fuel/air ratio controllers and EN1854 for automatic valve proofing systems • **SIL 3** "capable" certification • **CSA/UL/FM** approved (US/CA)
Protection class	IP00 / NEMA 1 (cabinet mounting)
Ambient temperature	-10 ... 60 °C
Maximum humidity	90 %rh
Operation	Automatic
Valve proofing system	Integrated
Supply voltage	24 Vdc / 24..264 Vac
Features	Easy installation, efficient operation and fast service because of: • DIN-rail mounting (modular platform) • On-board communications capabilities (Ethernet, Modbus, BACnet) • Intuitive diagnostics (touch display, PC, smart phone) • Optimized energy efficiency (O2 trim, VFD control) • On-board system guides • Status indicators (no blinking lights or fault codes) • Plug-and-play replacement (configurable modular concept) • Easy data backup (USB flash drive, SD cards) • Compatible with flame rod and all existing Honeywell C70xx-series optical flame detectors by selection of correct Flame Amplifier Module.
Note	Each SLATE[TM] system uses: • A multi voltage (24 Vdc / 24..264 Vac) Base Module - R8001A1001, which mounts directly on the DIN rail. • Up to 12 SLATE[TM] Modules can be connected to a single Base Module. • Each of the plug-in modules uses its own a DIN rail mounting Sub Base - R8001S9001.
Additional description	SLATE[TM] Online configurator (global site): **https://combustion.honeywell.com/slate/** • the online configurator simplifies selection of modules and system design • One stop shop for downloading SLATE AX programming software, firmware upgrades and more • Pre-configuration files are available for download to emulate most commonly used burner controllers

SLATE system

SLATE Configurable Safety Modules

Product description	Comment	Type
Base Module		R8001A1001/U
Burner Control Module	Needs sub base	R8001B2001/U
Fuel Air Ratio Module	Needs sub base	R8001C6001/U
Limit Control Module	Needs sub base	R8001L8001/U

R8001B2001

R8001C6001

R8001L8001

SLATE Flame Amplifier Modules

Product description	Comment	Type
IR Ampli-Check Flame Amplifier Module	Needs sub base	R8001F1041/U
UV Shutter-Check Flame Amplifier Module	Needs sub base	R8001S1051/U
UV Ampli-Check Flame Amplifier Module	Needs sub base	R8001S1071/U
Rectification Ampli-Check Flame Amplifier Module	Needs sub base	R8001V1031/U

R8001F1041

R8001S1051

R8001S1071

R8001V1031

SLATE Programmable Logic Modules

Product description	Comment	Type
Digital I/O Module	Needs sub base	R8001D4001/U
Annunciator Module	Needs sub base	R8001N7001/U
Analogue I/O Module	Needs sub base	R8001U3001/U

R8001D4001

R8001N7001

R8001U3001

SLATE system

R8001K5001

R8001S9001

SLATE Additional Modules

Product description	Comment	Type
7" Web based Colour Touchscreen Display		**R8001K5001/U**
10" Web based Colour Touchscreen Display		**R8001K1010/U**
DIN rail Mounting Sub-base	One per module needed!	**R8001S9001/U**
SLATE Extension Cable		**50096820-001/U**
SLATE Connector Kit		**32008001-002/U**

SLATE Actuators(90 span)

Product description	Comment	Type
Actuator, 450 steps, 30s runtime, 5.5 Nm, IP40		**R8001M1050/U**
Actuator, 450 steps, 30s runtime, 17 Nm, IP40		**R8001M1150/U**
Actuator 900 steps, 15s runtime, 5.5 Nm, IP66		**R8001M4050/U**
Actuator 900 steps, 15s runtime, 17 Nm, IP66		**R8001M4150/U**
Actuator 33 or 101 Nm		**MAXON-SMARTLINK-DS**

R8001M1050   **R8001M4050**   **SMARTLINK-DS**

SLATE PC Software

Powered by **niagara**^{AX} *FRAMEWORK*

Product description	Comment	Type
SLATE AX PC software, based on Niagara AX		**SLATEAXTOOL**

SLATE

APPL-SLATESYSTEM

Product description	Comment	Type
Impression of SLATE System mounted on a DIN rail		**_SLATE**

SLATE system

C7008A

Applicable flame detectors, refer to "Flame Sensors" chapter

Flame rod. Used with **R8001V1031/U** Flame Amplifier Module.	_C7008
MiniPeeper UV detector, standard version. Intermittent operation. Used with **R8001S1071/U** Flame Amplifier Module.	_C7027
MiniPeeper UV detector, with field replaceable UV tube and high temperature specification. Intermittent operation. Used with **R8001S1071/U** Flame Amplifier Module.	_C7035
MiniPeeper UV detector, with side view option. Intermittent operation. Used with **R8001S1071/U** Flame Amplifier Module.	_C7044
PurplePeeper UV detector, standard version. Intermittent operation. Used with **R8001V1031/U** Flame Amplifier Module.	_C7012A/G
MiniPeeper self-checking UV detector. Continuous operation. Used with **R8001S1051/U** Flame Amplifier Module.	_C7061A1
MiniPeeper self-checking UV detector. Continuous operation and ATEX-Z1 approved. Used with **R8001S1051/U** Flame Amplifier Module.	_C7061F1
MiniPeeper self-checking UV detector. Continuous operation and for use in hazardous locations (US/CA only). Used with **R8001S1051/U** Flame Amplifier Module.	_C7061F2
Infrared detector. Continuous operation. Used with **R8001F1041/U** Flame Amplifier Module.	_C7915

C7027

C7035

C7044

C7061A

C7061F

C7061F2

C7915

Single Gas Valves

1

	Solenoid gas valve, normally closed VE400AA

Class "A" AC powered, Safety Shutoff Solenoid Gas Valve.
For pilot and small burner applications in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.

Gas valve type	AC powered, non regulated ON/OFF normally closed, fast opening.
Media	natural gas, propane, air.
Materials	brass body for 1/4" version, aluminium body for others.
Approvals	CE (EN161), AGA
Pipe connection	Internal thread as per ISO 7/1 (Rp)
Threads type	BSP
Maximum opening time	1 s
Maximum closing time	1 s
Ambient temperature	-15 ... 60 $^{\circ}$C
Protection class	IP65
Electrical connection	DIN plug

VE400AA

C E

220...240 Vac versions

Valve dimension	Max. operating pressure mbar	Type
Rp 1/4	500	**VE408AA1007**

220...240 VRac versions (needs DIN plud with integrated rectifier)

Valve dimension	Max. operating pressure mbar	Type
Rp 1/4	500	**VE408AA1049**

110 Vac versions

Valve dimension	Max. operating pressure mbar	Type
Rp 1/4	500	**VE408AA1015**

Electrical connection

DIN Plug	**CO020012**
DIN Plug, with integrated rectifier	**COMPM221**

CO020012

Single Gas Valves

Solenoid gas valve, normally closed VE4000A1

VE4000A

CE

Class "A" Safety Shutoff Solenoid Gas Valve.
For control and regulation of gaseous fuels in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.

Gas valve type	non regulated ON/OFF normally closed, fast opening.
Media	natural gas, propane, air.
Materials	aluminium die cast body.
Approvals	CE (EN161), AGA
Pipe connection	Internal thread as per ISO 7/1 (Rp)
Threads type	BSP
Maximum opening time	1 s
Maximum closing time	1 s
Ambient temperature	-15 ... 60 °C
Additional description	Some models have 4x pressure taps 1/4" (2x on each side), marked as "Bypass" in the selection table.

220...240 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	Comments	Type
Rp 3/8	360	IP54	PG11		BB052301	–	**VE4010A1006**
Rp 1/2	360	IP54	PG11		BB052301	–	**VE4015A1005**
Rp 1/2	360	IP65	DIN plug		BB052302	–	**VE4015A1070**
Rp 3/4	360	IP54	PG11	MS052501	BB052325	–	**VE4020A1005**
Rp 1	360	IP54	PG11	MS052501	BB052325	–	**VE4025A1004**
Rp 1	360	IP65	DIN plug	MS052501	BB052326DIN	–	**VE4025A1145**
Rp 1 1/4	200	IP54	PG11	MS054001	BB052340	–	**VE4032A1000**
Rp 1 1/4	200	IP54	PG11	MS054001	BB052340	–	**VE4032A1109**
Rp 1 1/2	200	IP54	PG11	MS054001	BB052340	–	**VE4040A1003**
Rp 1 1/2	200	IP54	PG11	MS054001	BB052340	Bypass	**VE4040A1144**
Rp 1 1/2	360	IP65	DIN plug	MS054001	BB052306DIN	–	**VE4040A1219**
Rp 2	200	IP54	PG11	MS055001	BB052303	–	**VE4050A1002**
Rp 2	360	IP65	DIN plug	MS055001	BB052303	–	**VE4050A1127**
Rp 2 1/2	200	IP54	PG11	MS056501	BB052365	–	**VE4065A1000**

110 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	Comments	Type
Rp 1/2	360	IP54	PG11		BB051102DIN	–	**VE4015A1013**
Rp 1/2	360	IP65	DIN plug		BB051102DIN	–	**VE4015A1138**
Rp 3/4	200	IP54	PG11	MS052501	BB051125	–	**VE4020A1054**
Rp 1	200	IP54	PG11	MS052501	BB051125	–	**VE4025A1053**
Rp 1	360	IP65	DIN plug	MS052501	BB051126DIN	–	**VE4025A1194**
Rp 1 1/2	200	IP54	PG11	MS054001		–	**VE4040A1052**
Rp 1 1/2	360	IP65	DIN plug	MS054001		–	**VE4040A1227**
Rp 2	200	IP54	PG11	MS055001	BB051152DIN	–	**VE4050A1051**
Rp 2	360	IP65	DIN plug	MS055001	BB051154DIN	–	**VE4050A1184**

Single Gas Valves

CO020012

MS05

Electrical connection

DIN plug	**CO020012**

CPI Switch for VE-series valves with bottom plug (1/4")

CPI Switch for VExxxxA/B/C/S DN20-25	**MS052501**
CPI Switch for VExxxxA/B/C and VG4xxx DN32-40	**MS054001**
CPI Switch for VExxxxA/B/C and VG4xxx DN50	**MS055001**
CPI Switch for VExxxxA1 and VG4xxx DN65-80	**MS056501**

Replacement coils

Replacement coil	**BB052301**
Replacement coil	**BB052302**
Replacement coil	**BB052325**
Replacement coil	**BB052326DIN**
Replacement coil	**BB052340**
Replacement coil	**BB052306DIN**
Replacement coil	**BB052303**
Replacement coil	**BB052365**
Replacement coil	**BB051102DIN**
Replacement coil	**BB051125**
Replacement coil	**BB051126DIN**
Replacement coil	**BB051152DIN**
Replacement coil	**BB051154DIN**

Single Gas Valves

Solenoid gas valve, normally closed VE4000A3

VE4000A3

CE

Class "A" Safety Shutoff Solenoid Gas Valve.
For control and regulation of gaseous fuels in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.

Gas valve type	non regulated ON/OFF normally closed, fast opening.
Media	natural gas, propane, air.
Materials	aluminium die cast body.
Approvals	CE (EN161), AGA
Pipe connection	PN16 Flanges as per EN 1092-1
Maximum opening time	1 s
Maximum closing time	1 s
Ambient temperature	-15 ... 60 ^{o}C

220...240 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	**Type**
DN65	360	IP65	DIN plug	MS058001	BB052381DIN	**VE4065A3022**
DN80	360	IP65	DIN plug	MS058001	BB052382DIN	**VE4080A3021**
DN100	200	IP54	PG11	MS051001	BB152300	**VE4100A3001**
DN100	360	IP65	DIN plug	MS051001		**VE4100A3068**

110 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	**Type**
DN65	360	IP65	DIN plug	MS058001	BB051181DIN	**VE4065A3030**
DN80	360	IP65	DIN plug	MS058001	BB051105DIN	**VE4080A3039**
DN100	360	IP65	DIN plug	MS051001		**VE4100A3076**

CO020012

Electrical connection

DIN plug	**CO020012**
CPI Switch for VE4100A	**MS051001**

CPI Switch for VE-series valves with bottom plug (1/4")

CPI Switch for VE4065/80	**MS058001**
CPI Switch for VE4100A	**MS051001**

MS05

Replacement coils

Replacement coil	**BB052381DIN**
Replacement coil	**BB052382DIN**
Replacement coil	**BB152300**
Replacement coil	**BB051181DIN**
Replacement coil	**BB051105DIN**

Single Gas Valves

Solenoid gas valve, normally closed, with flow rate adjustment VE4000B1

Class "A" Safety Shutoff Solenoid Gas Valve, with maximum flow rate adjustment.
For control and regulation of gaseous fuels in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.

VE4000B1

CE

Gas valve type	non regulated ON/OFF normally closed, fast opening, with maximum flow rate adjustment.
Media	natural gas, propane, air. Special versions for biogas available upon request.
Materials	aluminium die cast body.
Approvals	CE (EN161), AGA
Pipe connection	Internal thread as per ISO 7/1 (Rp)
Threads type	BSP
Maximum opening time	1 s
Maximum closing time	1 s
Ambient temperature	-15 ... 60 ^{o}C
Additional description	• The maximum flow rate can be adjusted on top of the valve • Optional Closed Position Indication Switch (CPI switch) can be ordered separately.

220...240 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	Comments	Type
Rp 3/8	360	IP65	DIN plug			–	**VE4010B1062**
Rp 1/2	360	IP54	PG11		BB152301	–	**VE4015B1004**
Rp 1/2	360	IP65	DIN plug		BB152305	–	**VE4015B1087**
Rp 3/4	360	IP54	PG11	MS052501	BB152325	–	**VE4020B1004**
Rp 3/4	360	IP54	PG11	MS052501	BB152325	–	**VE4020B1046**
Rp 3/4	360	IP65	DIN plug	MS052501	BB152324	–	**VE4020B1137**
Rp 1	200	IP54	PG11	MS052501	BB152325	–	**VE4025B1003**
Rp 1	360	IP54	PG11	MS052501	BB152325	–	**VE4025B1045**
Rp 1	360	IP65	DIN plug	MS052501	BB152325	–	**VE4025B1102**
Rp 1 1/4	360	IP65	DIN plug	MS054001		–	**VE4032B1116**
Rp 1 1/2	200	IP54	PG11	MS054001	BB152326	–	**VE4040B1002**
Rp 1 1/2	360	IP54	PG11	MS054001	BB152340	–	**VE4040B1044**
Rp 1 1/2	360	IP65	DIN plug	MS054001		Viton	**VE4040B1119**
Rp 1 1/2	360	IP65	DIN plug	MS054001		–	**VE4040B1135**
Rp 2	200	IP54	PG11	MS055001	BB152340	–	**VE4050B1001**
Rp 2	360	IP54	PG11	MS055001	BB152303	–	**VE4050B1043**
Rp 2	360	IP65	DIN plug	MS055001	BB152307	–	**VE4050B1118**
Rp 2 1/2	200	IP54	PG11	MS058001	BB152365	–	**VE4065B1017**
Rp 3	200	IP54	PG11	MS058001	BB152380	–	**VE4080B1016**

110 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	Comments	Type
Rp 3/8	360	IP65	DIN plug			–	**VE4010B1054**
Rp 1/2	200	IP54	PG11		BB151101	–	**VE4015B1012**
Rp 1/2	360	IP65	DIN plug		BB151107	–	**VE4015B1095**
Rp 3/4	360	IP65	PG11	MS052501	BB151125	–	**VE4020B1129**
Rp 1	360	IP54	PG11	MS052501	BB151125	–	**VE4025B1078**
Rp 1	360	IP65	DIN plug	MS052501	BB151125	Viton	**VE4025B1110**
Rp 1	360	IP65	DIN plug	MS052501	BB151125	–	**VE4025B1128**

Single Gas Valves

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	Comments	Type
Rp 1 1/4	360	IP65	DIN plug	MS054001	BB151104	–	**VE4032B1108**
Rp 1 1/2	360	IP65	DIN plug	MS054001	BB151104	–	**VE4040B1127**
Rp 2	360	IP65	DIN plug	MS055001	BB151153	–	**VE4050B1126**

CO020012

MS05

Electrical connection

DIN plug	**CO020012**

CPI Switch for VE-series valves with bottom plug (1/4")

CPI Switch for VExxxxA/B/C/S DN20-25	**MS052501**
CPI Switch for VExxxxA/B/C and VG4xxx DN32-40	**MS054001**
CPI Switch for VExxxxA/B/C and VG4xxx DN50	**MS055001**
CPI Switch for VExxxxA1 and VG4xxx DN65-80	**MS056501**
CPI Switch for VExxxxB DN65-80	**MS058001**

Replacement coils

Replacement coil	**BB152301**
Replacement coil	**BB152305**
Replacement coil	**BB152325**
Replacement coil	**BB152324**
Replacement coil	**BB152326**
Replacement coil	**BB152340**
Replacement coil	**BB152303**
Replacement coil	**BB152307**
Replacement coil	**BB152365**
Replacement coil	**BB152380**
Replacement coil	**BB151101**
Replacement coil	**BB151107**
Replacement coil	**BB151125**
Replacement coil	**BB151104**
Replacement coil	**BB151153**

Single Gas Valves

Solenoid gas valve, normally closed, flanged connections VE4000B3

Class "A" Safety Shutoff Solenoid Gas Valve with flanged connections.
For control and regulation of gaseous fuels in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.

VE4000B3

CE

Gas valve type	non regulated ON/OFF normally closed, fast opening
Media	natural gas, propane, air. Special versions for biogas available upon request
Materials	aluminium die cast body
Approvals	CE (EN161), AGA
Pipe connection	PN16 Flanges as per EN 1092-1
Maximum opening time	1 s
Maximum closing time	1 s
Ambient temperature	-15 ... 60 $^\circ$C
Additional description	• Adjustable maximum flow rate on top of the coil.
	• 4 auxiliary pressure taps with Rp 1/4" threaded connections, 2 on the inlet side, 2 on the outlet side.
	• Other voltages are also available.
	• Optional Closed Position Indication Switch (CPI switch) is ordered separately.

220...240 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	Type
DN65	200	IP54	PG11	MS058001	BB152365	**VE4065B3005**
DN65	360	IP54	PG11	MS058001	BB152380	**VE4065B3039**
DN65	360	IP65	DIN plug	MS058001		**VE4065B3153**
DN80	200	IP54	PG11	MS058001	BB152380	**VE4080B3004**
DN80	360	IP54	PG11	MS058001	BB152382	**VE4080B3038**
DN80	360	IP65	DIN plug	MS058001		**VE4080B3178**
DN100	200	IP54	PG11	MS051001	BB152300	**VE4100B3000**
DN100	360	IP54	PG11	MS051001		**VE4100B3034**

110 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	Type
DN65	360	IP54	PG11	MS058001	BB151180	**VE4065B3047**
DN65	360	IP65	DIN plug	MS058001		**VE4065B3161**
DN80	360	IP54	PG11	MS058001		**VE4080B3046**

CO020012

Electrical connection

DIN Plug	**CO020012**

CPI Switch for VE-series valves with bottom plug (1/4")

CPI Switch for VExxxxB DN65-80	**MS058001**
CPI Switch for VE4100A DN100	**MS051001**

Replacement coils

Replacement coil	**BB152365**
Replacement coil	**BB152380**
Replacement coil	**BB152382**
Replacement coil	**BB152300**
Replacement coil	**BB151180**
Replacement coil	**BB151108**

MS05

Single Gas Valves

Solenoid gas valve, normally closed, with characterized opening VE4000C1

Class "A" Safety Shutoff Solenoid Gas Valve, with maximum flow rate adjustment and characterized opening.
For control and regulation of gaseous fuels in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.

VE4000C1

$C \epsilon$

Gas valve type	non regulated ON/OFF normally closed, slow opening, with maximum flow rate adjustment
Media	natural gas, propane, air. Special versions for biogas available upon request
Materials	aluminium die cast body
Approvals	CE (EN161), AGA
Pipe connection	Internal thread as per ISO 7/1 (Rp)
Threads type	BSP
Maximum opening time	30 s
Maximum closing time	1 s
Ambient temperature	-15 ... 60 $^{\circ}$C
Additional description	• The maximum flow rate and the opening characteristics can be adjusted on top of the valve. • Optional Closed Position Indication Switch (CPI switch) is ordered separately.

220...240 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	Type
Rp 1/2	360	IP54	PG11		BB152301	**VE4015C1003**
Rp 1/2	360	IP65	DIN plug		BB152305	**VE4015C1110**
Rp 3/4	360	IP54	PG11	MS052501	BB152325	**VE4020C1003**
Rp 3/4	360	IP54	DIN plug	MS052501		**VE4020C1060**
Rp 3/4	360	IP65	DIN plug	MS052501	BB152324	**VE4020C1086**
Rp 1	360	IP54	PG11	MS052501	BB152325	**VE4025C1002**
Rp 1	360	IP54	DIN plug	MS052501		**VE4025C1085**
Rp 1	360	IP65	DIN plug	MS052501	BB152324	**VE4025C1119**
Rp 1 1/4	360	IP54	PG11	MS054001	BB152340	**VE4032C1032**
Rp 1 1/2	200	IP54	PG11	MS054001	BB152326	**VE4040C1001**
Rp 1 1/2	360	IP65	DIN plug	MS054001	BB152342DIN	**VE4040C1175**
Rp 2	200	IP54	PG11	MS055001	BB152340	**VE4050C1000**
Rp 2	360	IP65	DIN plug	MS055001	BB152307DIN	**VE4050C1117**

110 Vac versions

Valve dimension	Max. operating pressure mbar	Protection class	Electrical connection	Optional CPI-switch	Replacement coil	Type
Rp 1/2	360	IP65	DIN plug		BB151107DIN	**VE4015C1128**
Rp 1	360	IP65	DIN plug	MS052501		**VE4025C1127**
Rp 1 1/4	360	IP65	DIN plug	MS054001		**VE4032C1065**
Rp 1 1/2	360	IP65	DIN plug	MS054001		**VE4040C1167**

Single Gas Valves

CO020012

MS05

Electrical connection

DIN plug	**CO020012**

CPI Switch for VE-series valves with bottom plug (1/4")

CPI Switch for VExxxxA/B/C/S DN20-25	**MS052501**
CPI Switch for VExxxxA/B/C and VG4xxx DN32-40	**MS054001**
CPI Switch for VExxxxA/B/C and VG4xxx DN50	**MS055001**

Replacement parts

Replacement retarder for VE4xxxC-series DN10..25 and VQ4xxMC-series DN20-DN25	**KTGRFR01**
Replacement retarder for VE4xxxC-series DN32..50 and VQ4xxMC-series DN40-DN50	**KTGRFR02**

Replacement coils

Replacement coil	**BB152301**
Replacement coil	**BB152305**
Replacement coil	**BB152325**
Replacement coil	**BB152324**
Replacement coil	**BB152340**
Replacement coil	**BB152326**
Replacement coil	**BB152342DIN**
Replacement coil	**BB152307DIN**
Replacement coil	**BB151107DIN**

Single Gas Valves

Solenoid gas valve, normally open VE4000S

Solenoid Gas Valve normally open.
The VE4000S1 and VE4000S2 series gas valves are safety relief solenoid valves used as vent valves in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.

VE4000S1

CE

Gas valve type	non regulated ON/OFF normally open
Media	natural gas, propane, air
Materials	aluminium die cast body
Approvals	CE (EN161), AGA
Pipe connection	Internal thread as per ISO 7/1 (Rp)
Threads type	BSP
Max. operating pressure	360 mbar
Maximum opening time	1 s
Maximum closing time	1 s
Ambient temperature	-15 ... 60 ^{o}C
Protection class	IP54
Electrical connection	PG11
Additional description	• The VE4000S1 series are without Closed Position Indication (CPI) Switch, which can be ordered and installed separately. • The VE4000S2 series have the CPI switch factory installed.

VE4000S1 Series (220...240Vac)

Valve dimension	Optional CPI-switch	Replacement coil	Type
Rp 3/4	MS052501	BB152302	**VE4020S1038**
Rp 1	MS052501	BB152302	**VE4025S1037**

VE4000S1 Series (110Vac)

Valve dimension	Optional CPI-switch	Replacement coil	Type
Rp 3/4	MS052501	BB151101	**VE4020S1046**
Rp 1	MS052501	BB151101	**VE4025S1045**

VE4000S2

VE4000S2 Series with factory installed CPI switch (220...240Vac)

Valve dimension	Optional CPI-switch	Replacement coil	Type
Rp 3/4	included	BB152302	**VE4020S2044**
Rp 1	included	BB152302	**VE4025S2035**

MS05

CPI Switch for VE-series valves with bottom plug (1/4")

CPI Switch for VExxxxA/B/C/S DN20-25	**MS052501**

Replacement coils

Replacement coil	**BB152302**
Replacement coil	**BB151101**

Single Gas Valves

1

Safety shut-off gas valve, normally closed for North American market V4295A1

Class "B" Safety Shutoff Gas Valve,
For control and regulation of gaseous fuels in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.

Gas valve type	non regulated ON/OFF normally closed, fast opening.
Media	natural gas, propane, air. Special versions for biogas available upon request.
Materials	aluminium die cast body.
Approvals	CSA, AGA
Pipe connection	Internal threads
Threads type	NPT
Maximum opening time	1 s
Maximum closing time	1 s
Ambient temperature	-40 ... 63 °C
Additional description	Upstream and downstream taps 1/4" NPT

V4295A1

120 Vac versions

Valve dimension	Max. operating pressure mbar	Type
Rp 1/2	140	**V4295A1015**
Rp 3/4	140	**V4295A1023**
Rp 1	140	**V4295A1031**
Rp 1 1/4	140	**V4295A1049**
Rp 1 1/2	140	**V4295A1056**
Rp 2	140	**V4295A1064**
Rp 2 1/2	140	**V4295A1072**
Rp 3	140	**V4295A1080**
Rp 3/8	350	**V4295A1098**
Rp 1/2	350	**V4295A1106**
Rp 3/4	350	**V4295A1114**
Rp 1	350	**V4295A1122**
Rp 1 1/4	350	**V4295A1130**
Rp 1 1/2	350	**V4295A1148/U**
Rp 2	350	**V4295A1155**

24 Vac versions

Valve dimension	Max. operating pressure mbar	Type
Rp 1/2	140	**V8295A1016**
Rp 3/4	140	**V8295A1024**
Rp 1	140	**V8295A1032**
Rp 1 1/4	140	**V8295A1040**
Rp 1 1/2	140	**V8295A1057**
Rp 2	140	**V8295A1065**

Single Gas Valves

Safety shut-off gas valve, normally open for North American market V4295S1

Class "B" Safety Shutoff Gas Valve,
For control and regulation of gaseous fuels in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.

V4295A1122

Gas valve type	non regulated ON/OFF normally OPEN (vent), fast closing.
Media	natural gas, propane, air.
Materials	aluminium die cast body.
Approvals	CSA, AGA
Pipe connection	Internal threads
Threads type	NPT
Max. operating pressure	140 mbar
Maximum opening time	1 s
Maximum closing time	1 s
Ambient temperature	-40 ... 63 $^{\circ}$C
Additional description	Upstream and downstream taps 1/4" NPT

120 Vac versions

Valve dimension	Type
Rp 3/4	**V4295S1005**
Rp 1	**V4295S1013**
Rp 1 1/4	**V4295S1021**

24 Vac versions

Valve dimension	Type
Rp 3/4	**V8295S1006**

Single Gas Valves

Pneumatic shut off gas valve, normally closed type 8000

Automatic shut off valve for use with variety of gaseous media.
For use with industrial burners on ovens, furnaces and other gas consuming appliances.
Connections:
- ISO 7-1 threaded or DIN PN16 Flanged
- **Available on request:** Special versions with NPT pipe thread, ANSI Flanged or with Socket welded nipple.

Other options, available on request:
- special firesafe- and NACE versions
- partial stroke testing

MAXON8000

Gas valve type	Pneumatic actuated shut off valve
Media	Natural gas, propane, butane, hydrogen
	• **Available on request:** Special versions for oxygen, coke oven gas, refinery gas, biogas.
Ambient temperature	-40 ... 100 ^{o}C
Materials	Carbon or stainless steel body
	• **Available on request:** Special versions for low temperatures (till -50C).
Approvals	• GAD, EN161, PED, FM, AGA, TR (Russia)
	• SIL-3 Capable (meets IEC61508)
	• **Available on request:** UL, CSA, KTL and/or INMETRO approved models
Maximum closing time	1 s
Note	• Maximum operating pressures to be reduced with **25%** when used with hydrogen (H_2)
Additional description	**Operating Environment:**
	• Actuators are rated for NEMA 4, IP65 or optional NEMA 4X, IP65.
	• Ambient temperature range of -40C to 60C for the 8111 models; option of -50C to 60C also available.
	• Ambient temperature range of -40C to 50C for the 8113 models; option of -50C to 50C also available.
	• All valves for oxygen service or using Ethylene Propylene body seals are limited to a minimum ambient and fluid temperature of -17C.

230 Vac, 50/60 Hz versions

Valve dimension	Pipe connection	Threads type	Max. operating pressure bar	Product description	Type
Rp 1	Internal threads	BSP	17.6	SSOV 100S8111-CA22-D1B03	**324721A**
Rp 1 1/2	Internal threads	BSP	17.6	SSOV 150S8111-CA22-D1B03	**324722A**
Rp 2	Internal threads	BSP	17.6	SSOV 200S8111-CA22-D1B03	**324723A**
DN65	Flanges	–	12.1	SSOV 250C8111-DA22-D1B03	**324724A**
DN80	Flanges	–	9.3	SSOV 300C8111-DA22-D1B03	**324726A**
DN100	Flanges	–	9.3	SSOV 400C8111-DA22-D1B03	**324727A**

Single Gas Valves

120 Vac, 50/60 Hz versions

Valve dimension	Pipe connection	Threads type	Max. operating pressure bar	Product description	Type
Rp 1	Internal threads	BSP	17.6	SSOV 100S8111-CA22-A1B03	**324721B**
Rp 1 1/2	Internal threads	BSP	17.6	SSOV 150S8111-CA22-A1B03	**324722B**
Rp 2	Internal threads	BSP	17.6	SSOV 200S8111-CA22-A1B03	**324723B**
DN65	Flanges	–	12.1	SSOV 250C8111-DA22-A1B03	**324724B**
DN80	Flanges	–	9.3	SSOV 300C8111-DA22-A1B03	**324726B**
DN100	Flanges	–	9.3	SSOV 400C8111-DA22-A1B03	**324727B**

24 Vdc versions

Valve dimension	Pipe connection	Threads type	Max. operating pressure bar	Product description	Type
Rp 1	Internal threads	BSP	17.6	SSOV 100S8111-CA22-G1B03	**324721C**
Rp 1 1/2	Internal threads	BSP	17.6	SSOV 150S8111-CA22-G1B03	**324722C**
Rp 2	Internal threads	BSP	17.6	SSOV 200S8111-CA22-G1B03	**324723C**
DN65	Flanges	–	12.1	SSOV 250C8111-DA22-G1B03	**324724C**
DN80	Flanges	–	9.3	SSOV 300C8111-DA22-G1B03	**324726C**
DN100	Flanges	–	9.3	SSOV 400C8111-DA22-G1B03	**324727C**

24 Vdc versions, ATEX Cat.2GD

Valve dimension	Pipe connection	Threads type	Max. operating pressure bar	Product description	Type
Rp 1	Internal threads	BSP	17.6	SSOV 100S8113-CA22-J1B03	**324721J**
Rp 1 1/2	Internal threads	BSP	17.6	SSOV 150S8113-CA22-J1B03	**324722J**
Rp 2	Internal threads	BSP	17.6	SSOV 200S8113-CA22-J1B03	**324723J**
DN65	Flanges	–	12.1	SSOV 250C8113-DA22-J1B03	**324724J**
DN80	Flanges	–	9.3	SSOV 300C8113-DA22-J1B03	**324726J**
DN100	Flanges	–	9.3	SSOV 400C8113-DA22-J1B03	**324727J**

Single Gas Valves

Electro Mechanical gas valve, normally closed type MA

Automatic shut off valve for use with variety of gaseous media.
For use with industrial burners on ovens, furnaces and other gas consuming appliances.
Connections:
- ISO 7-1 threaded or DIN PN16 Flanged
- **Available on request:** Special versions with NPT pipe thread, ANSI Flanged or with Socket welded nipple.

MAXON-MA

Gas valve type	Electro mechanically actuated shut off valve
Media	Natural gas, propane, butane, hydrogen
	• **Available on request:** Special versions for oxygen, coke oven gas, refinery gas, biogas.
Ambient temperature	-40 ... 60 °C
Materials	Carbon steel body
	• **Available on request:** Special versions with stainless steel or low temperature carbon steel (as low as -50C).
Approvals	• GAD, EN161, PED, FM, AGA, TR (Russia)
	• SIL-3 Capable (meets IEC61508)
	• **Available on request:** UL and CSA approved models
Maximum closing time	1 s
Electrical connection	screw terminals
Protection class	NEMA 4 (IP65)
Note	• Maximum operating pressures to be reduced with **25%** when used with hydrogen (H_2)

230 Vac, 50/60 Hz versions

Valve dimension	Pipe connection	Threads type	Max. operating pressure bar	Product description	Type
Rp 1	Internal threads	BSP	8.62	5000 100SMA11 CA22-CC13B0	**325521A**
Rp 1 1/2	Internal threads	BSP	4.83	5000 150SMA11 CA22-CC13B0	**325522A**
Rp 2	Internal threads	BSP	4.83	5000 200SMA11 CA22-CC13B0	**325523A**
DN65	Flanges	–	3.45	5000 250CMA11 DA22-CC23B0	**325531A**
DN80	Flanges	–	2.76	5000 300CMA11 DA22-CC23B0	**325532A**
DN100	Flanges	–	2.76	5000 400CMA11 DA22-CC23B0	**325533A**

120 Vac, 50/60 Hz versions

Valve dimension	Pipe connection	Threads type	Max. operating pressure bar	Product description	Type
Rp 1	Internal threads	BSP	8.62	5000 100SMA11 CA22-AA13B0	**325521B**
Rp 1 1/2	Internal threads	BSP	4.83	5000 150SMA11 CA22-AA13B0	**325522B**
Rp 2	Internal threads	BSP	4.83	5000 200SMA11 CA22-AA13B0	**325523B**
DN65	Flanges	–	3.45	5000 250CMA11 DA22-AA23B0	**325531B**
DN80	Flanges	–	2.76	5000 300CMA11 DA22-AA23B0	**325532B**
DN100	Flanges	–	2.76	5000 400CMA11 DA22-AA23B0	**325533B**

24 Vdc versions

Valve dimension	Pipe connection	Threads type	Max. operating pressure bar	Product description	Type
Rp 1	Internal threads	BSP	8.62	5000 100SMA11 CA22-FE24B0	**325521C**
Rp 1 1/2	Internal threads	BSP	4.83	5000 150SMA11 CA22-FE24B0	**325522C**
Rp 2	Internal threads	BSP	4.83	5000 200SMA11 CA22-FE24B0	**325523C**
DN65	Flanges	–	3.45	5000 250CMA11 DA22-FE24B0	**325531C**
DN80	Flanges	–	2.76	5000 300CMA11 DA22-FE24B0	**325532C**
DN100	Flanges	–	2.76	5000 400CMA11 DA22-FE24B0	**325533C**

Dual Gas Valves

Combination valve VQ-Modular

VQ-MODULAR

$C\,\epsilon$

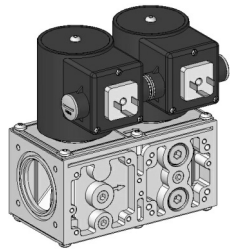**VQ425MA**

VQ425MB-1

VQ425MC

Class "A" Combination Gas Valve, up to 2" connection size. Special flanges are available for pipe sizes from 1/2" up to 2". Modular design:
- other valves can be fitted to each side of the valve body, such as a vent valve, pilot valve or or external bypass valve;
- special gas pressure switch models are available for direct mounting on either side of the valve body.
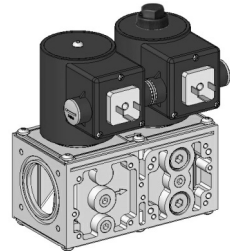
For control and regulation of gaseous fuels in gas power burners, gas boilers, ovens, furnaces and other gas consuming appliances.
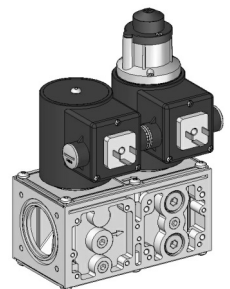
Gas valve type	2 safety shutoff valves in series, without pressure regulator.
First safety valve V1	Always fast opening.
Second safety valve V2	Available models: • MA - fast open • MB - fast open with flow rate adjuster (factory set at fully open) • MC - adjustable slow open (1..30 sec) with flow rate adjuster and step-open feature (factory settings: no step, ca. 6 sec slow-open and maximum flow)
Port connection	Honeywell flanges
Media	Designed for use with natural gas, butane or propane.
Materials	• Valve body: aluminium die cast body. • Closing spring: AISI 302 steel. • Valve plunger: Chrome plated Fe 360B steel sliding on anti-friction bearing. • Seals and gaskets: Hydrocarbon resistant NBR rubber type.
Approvals	• CE (EN161), AGA
Note	• The VQ-Modular is designed for a maximum operating frequency of one cycle per minute. • The small body size models are designed for ca. 500k cycles of operation. • The large body size models are designed for ca. 300k cycles of operation. • **IMPORTANT:** the VQ-Modular does not have an integrated screen at the inlet. For the inlet side always use flange models **KTCOMSxx** and for the outlet side flange models **KTCOMBxx**. KTCOMSxx can also be ordered for use at the outlet side, but then the included screen must be removed.
Max. operating pressure	360 mbar
Ambient temperature	-15 ... 60 °C
Maximum closing time	1 s
Additional description	• The valve solenoids are suitable for permanent energizing, such as applications in continuous operation. • Various pressure tap points are available on both sides of the valve body as well as on the flanges. • An optional Closed Position Indication Switch (CPI) can be mounted on the bottom of the first safety valve V1

Dual Gas Valves

VQ-Modular series dual valve

Supply voltage	Valve size inch	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Maximum flow m³/h	Optional CPI-switch	Spare coil V1	Spare coil V2	Type
115/230 Vac	3/4 .. 2	–	PG11 or DIN plug	IP54 or IP65	15	8	MS06-series	See table	See table. Not for MC.	_VQ4xxMx

First and second valve fast opening (* General features: Viton)

Supply voltage	Valve size inch	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Maximum flow m³/h	Optional CPI-switch	Spare coil V1	Spare coil V2	Type
230 Vac	3/4	1	PG11	IP54	15	8	MS062001	BB052302PG	BB052302PG	VQ420MA1004
230 Vac	3/4	1	DIN plug	IP65	15	8	MS062001	BB052302DIN	BB052305DIN	VQ420MA1012
230 Vac	1	1	PG11	IP54	21.1	11	MS062501	BB052326PG	BB052326PG	VQ425MA1005
230 Vac	1	1	DIN plug	IP65	21.1	11	MS062501	BB052326DIN	BB052326DIN	VQ425MA1013
115 Vac	1	1	DIN plug	IP65	23.9	11	MS062501	BB051126DIN	BB051126DIN	VQ425MA1038
230 Vac	1.1/2	1	PG11	IP54	46.5	31	MS064001	BB052306PG	BB052306PG	VQ440MA1006
230 Vac	1.1/2	1	DIN plug	IP65	46.5	31	MS064001	BB052306DIN	BB052306DIN	VQ440MA1014
115 Vac	1.1/2	1	DIN plug	IP65	46.5	31	MS064001	BB051152DIN	BB051152DIN	VQ440MA1030
230 Vac	1.1/2	1	DIN plug	IP65	46.5	31	MS064001	BB052306DIN	BB052306DIN	VQ440MA1048*
230 Vac	2	1	PG11	IP54	61	40	MS065001	BB052309PG	BB052309PG	VQ450MA1007
230 Vac	2	1	DIN plug	IP65	61	40	MS065001	BB052309DIN	BB052309DIN	VQ450MA1015

First valve fast opening. Second valve fast opening and with flow rate adjuster

Supply voltage	Valve size inch	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Maximum flow m³/h	Optional CPI-switch	Spare coil V1	Spare coil V2	Type
230 Vac	3/4	1	PG11	IP54	15	8	MS062001	BB052302PG	BB152305PG	VQ420MB1003
230 Vac	1	1	PG11	IP54	21.1	11	MS062501	BB052326PG	BB152324PG	VQ425MB1004
230 Vac	1	1	DIN plug	IP65	21.1	11	MS062501	BB052326DIN	BB152324DIN	VQ425MB1012
230 Vac	1.1/2	1	PG11	IP54	46.5	31	MS064001	BB052306PG	BB152342PG	VQ440MB1005
230 Vac	1.1/2	1	DIN plug	IP65	46.5	31	MS064001	BB052306DIN	BB152342DIN	VQ440MB1013
230 Vac	2	1	PG11	IP54	61	40	MS065001	BB052309PG	BB152307PG	VQ450MB1006
230 Vac	2	1	DIN plug	IP65	61	40	MS065001	BB052309DIN	BB152307DIN	VQ450MB1014

First valve fast opening. Second valve adjustable slow opening, step-open and flow rate adjuster
### (* General features: Factory mounted 1" by-pass valve)

Supply voltage	Valve size inch	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Maximum flow m³/h	Optional CPI-switch	Spare coil V1	Spare coil V2	Type
230 Vac	3/4	30	PG11	IP54	15	8	MS062001	BB052302PG	–	VQ420MC1002
230 Vac	1	30	PG11	IP54	21.1	11	MS062501	BB052326PG	–	VQ425MC1003
230 Vac	1	30	DIN plug	IP65	21.1	11	MS062501	BB052326DIN	–	VQ425MC1011
230 Vac	1.1/2	30	PG11	IP54	46.5	31	MS064001	BB052306PG	–	VQ440MC1004
230 Vac	1.1/2	30	DIN plug	IP65	46.5	31	MS064001	BB052306DIN	–	VQ440MC1012
230 Vac	2	30	PG11	IP54	61	40	MS065001	BB052309PG	–	VQ450MC1005
230 Vac	2	30	DIN plug	IP65	61	40	MS065001	BB052309DIN	–	VQ450BB1005M*

Dual Gas Valves
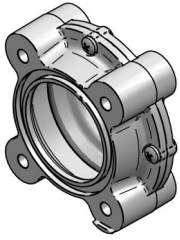
HFVR

Fine particle filter, for mounting on inlet side (to be ordered separately)

Filter size 50 micron. Pack size 10pcs.	**HFVR050**
Filter size 150 micron. Pack size 10pcs.	**HFVR150**

Flange kits without screen, for mounting on outlet side (to be ordered separately)

Flange kit for VQ420/25M. Contains 2x Rp 1/2"	**KTCOMB15**
Flange kit for VQ420/25M. Contains 2x Rp 3/4"	**KTCOMB20**
Flange kit for VQ420/25M. Contains 2x Rp 1"	**KTCOMB25**
Flange kit for VQ440/50M. Contains 2x Rp 1 1/4"	**KTCOMB32**
Flange kit for VQ440/50M. Contains 2x Rp 1 1/2"	**KTCOMB40**
Flange kit for VQ440/50M. Contains 2x Rp 2"	**KTCOMB50**

KTCOMB

Flange kits with screen, for mounting on inlet side (to be ordered separately)

Flange kit for VQ420/25M. Contains 2x Rp 1/2"	**KTCOMS15**
Flange kit for VQ420/25M. Contains 2x Rp 3/4"	**KTCOMS20**
Flange kit for VQ420/25M. Contains 2x Rp 1"	**KTCOMS25**
Flange kit for VQ440/50M. Contains 2x Rp 1 1/4"	**KTCOMS32**
Flange kit for VQ440/50M. Contains 2x Rp 1 1/2"	**KTCOMS40**
Flange kit for VQ440/50M. Contains 2x Rp 2"	**KTCOMS50**

Side valves: By-Pass Valves (to be ordered separately)

By-pass valves	**_VB420**

Side valves: Pilot Valves (to be ordered separately)

Pilot valves	**_VP420**

C6097A2200

Side valves: Vent Valves, normally open (to be ordered separately)

Vent valves	**_VV420**

Gas Pressure Switches (to be ordered separately)

Standard gas pressure switches for direct mount	**_C6097A2x00**
Slim size gas pressure switches for direct mount	**_C60VR40**

C60VR40

DIN connector (to be ordered separately)

Standard DIN connector, colour black. For DIN/IP65 models only	**CO020012**

Replacement parts

Replacement retarder for VE4xxxC-series DN10..25 and VQ4xxMC-series DN20-DN25	**KTGRFR01**
Replacement retarder for VE4xxxC-series DN32..50 and VQ4xxMC-series DN40-DN40	**KTGRFR02**

CO020012

Dual Gas Valves

Side valves for VQ-Modular

Class "A" add-on side valves, for use with VQ-Modular dual valves, 3/4" size.
- VB420-series: internal by-pass of the second main valve, to provide two-stage control.
- VP420-series: integrated pilot valve with external Rp 3/4" outlet.
- VV420-series: integrated norrmaly open vent valve to depressurize space between the two main valves during stand-by. Models for left or right side mount.

VB420

CE

Gas valve type	Add-on safety shutoff valve, uses 4 srews for fixation and a gasket for sealing.
Media	Natural gas, butane or propane.
Materials	• Valve body: aluminium die cast body. • Closing spring: AISI 302 steel. • Valve plunger: Chrome plated Fe 360B steel sliding on anti-friction bearing. • Seals and gaskets: Hydrocarbon resistant NBR rubber type.
Approvals	**Only** approved in combination with the VQ-Modular series dual valves. • CE (EN161), AGA
Note	The VB-VP-VV models side valves are designed for: • a maximum operating frequency of one cycle per minute. • ca. 500k cycles of operation.
Valve size	3/4 inch
Max. operating pressure	360 mbar
Ambient temperature	-15 ... 60 °C
Maximum closing time	1 s
Maximum flow	14.8 m^3/h
Additional description	• The valve solenoids are suitable for permanent energizing, such as applications in continuous operation.

Internal by-pass valve, fast opening and with flow rate adjuster.
For mounting on either side of the valve body.

Supply voltage	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Spare coil V1	Type
115 Vac	1	screw terminals	IP54	26	BB151107PG	**VB420B1005**
230 Vac	1	screw terminals	IP54	20	BB152305PG	**VB420B1013**
115 Vac	1	DIN plug	IP65	26	BB151107DIN	**VB420B1021**
230 Vac	1	DIN plug	IP65	20	BB152305DIN	**VB420B1039**

Internal by-pass valve, with adjustable slow opening, step-open and flow rate adjuster.
For mounting on either side of the valve body.

Supply voltage	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Spare coil V1	Type
115 Vac	30	screw terminals	IP54	26	BB151107PG	**VB420C1006**
230 Vac	30	screw terminals	IP54	20	BB152305PG	**VB420C1014**
115 Vac	30	DIN plug	IP65	26	BB151107DIN	**VB420C1022**
230 Vac	30	DIN plug	IP65	20	BB152305DIN	**VB420C1030**

Dual Gas Valves

VP420

Pilot valve, fast opening and with flow rate adjuster. With Rp 3/4" internal pipe thread.
For mounting on either side of the valve body.

Supply voltage	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Spare coil V1	Type
115 Vac	1	screw terminals	IP54	26	BB151107PG	**VP420B1003**
230 Vac	1	screw terminals	IP54	20	BB152305PG	**VP420B1011**
115 Vac	1	DIN plug	IP65	26	BB151107DIN	**VP420B1029**
230 Vac	1	DIN plug	IP65	20	BB152305DIN	**VP420B1037**

VV420-RIGHT

Pilot valve, with adjustable slow opening, step-open and flow rate adjuster.
With Rp 3/4" internal pipe thread. For mounting on either side of the valve body.

Supply voltage	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Spare coil V1	Type
115 Vac	30	screw terminals	IP54	26	BB151107PG	**VP420C1004**
230 Vac	30	screw terminals	IP54	20	BB152305PG	**VP420C1012**
115 Vac	30	DIN plug	IP65	26	BB151107DIN	**VP420C1020**
230 Vac	30	DIN plug	IP65	20	BB152305DIN	**VP420C1038**

VV420-LEFT

Normally open vent valve series. With Rp 3/4" internal pipe thread,
for mounting on the right side of the valve body.

Supply voltage	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Spare coil V1	Type
115 Vac	1	screw terminals	IP54	26	BB151107DIN	**VV420A1002**
230 Vac	1	screw terminals	IP54	20	BB152310DIN	**VV420A1010**
115 Vac	1	DIN plug	IP65	26	BB151107DIN	**VV420A1028**
230 Vac	1	DIN plug	IP65	20	BB152310DIN	**VV420A1036**

Normally open vent valve series. With Rp 3/4" internal pipe thread,
for mounting on the left side of the valve body.

Supply voltage	Maximum opening time s	Electrical connection	Protection class	Power consumption W	Spare coil V1	Type
115 Vac	1	screw terminals	IP54	26	BB151107DIN	**VV420A1044**
230 Vac	1	screw terminals	IP54	20	BB152310DIN	**VV420A1051**
115 Vac	1	DIN plug	IP65	26	BB151107DIN	**VV420A1069**
230 Vac	1	DIN plug	IP65	20	BB152310DIN	**VV420A1077**

CO020012

DIN connector (to be ordered separately)

Standard DIN connector, colour black.	**CO020012**

Burner Controls

Burner Controls EC/RM7800-series

The EC/RM7800 series are microprocessor-based industrial burner controls for automatically fired gas, oil or combination fuel single burner applications.
For all type of burners with unlimited capacity.

7800-SERIES

Approvals	• CE approved according EN298 for **continuous** operation (when used with correct flame amplifier and flame sensor).
	• SIL-3 Capable certified
	• APAVE accepted (CE approved models)
	• CSA/UL approved (120Vac models only)
Protection class	• Europe: IP00 (cabinet mount only)
	• Americas: NEMA 1 (cabinet or wall mount)
Ambient temperature	-40 ... 60 °C
Maximum humidity	85 %rh
Note	About Flame Failure Response Times (FFRT):
	• European 7800-series burner controllers (EU): 1.0 or 2.0s (depends on flame amplifier).
	• American 7800-series burner controllers (US): 0.8 or 3.0s (depends on flame amplifier).
Flame detector	Depends on plug-in amplifier
Additional description	• Modular design with plug-in modules. Selectable pre-purge time by ST7800A1xxx/U module selection.
	• Accepts all existing Honeywell optical flame detectors and flame rods.
	• All information regarding the burner control (6 last lockout conditions, flame signal, hours of operation ...) are available on the keyboard display module or through communication.

European models 120Vac (RM78xx) (Operation: Cont.; Flame failure response time: 1,0/2,0s)

Control model	Outputs	Pilot	Prepurge timer	Pilot ignition time	Main ignition time	Post purge time	Number of ignition attempts	Valve proofing system	Type
Full	HF/LF/Modulate	Selectable	•	3/5s	3/5s	2s	1	–	**RM7850A1001/U**
Full	HF/LF/Modulate	Selectable	•	3/5s	3/5s	15s	1	–	**RM7850A1019/U**
Primary	on/off	Intermittent	–	5/10s	–	–	selectable	–	**RM7890B1055/U**

European models 230Vac (EC78xx) (Operation: Cont.; Flame failure response time: 1,0/2,0s)

Control model	Outputs	Pilot	Prepurge timer	Pilot ignition time	Main ignition time	Post purge time	Number of ignition attempts	Valve proofing system	Type
Atmosferic	LF/Modulate	Selectable	•	5/10s	5/10s	–	1	–	**EC7820A1026/U**
Full	HF/LF/Modulate	Selectable	•	3/5s	3/5s	2s	1	–	**EC7850A1072/U**
Full	HF/LF/Modulate	Selectable	•	3/5s	3/5s	30s	1	–	**EC7850A1080/U**
Full	HF/LF/Modulate	Selectable	•	3/5s	3/5s	15s	1	–	**EC7850A1122/U**
Primary	on/off	Intermittent	–	5/10s	–	–	selectable	–	**EC7890B1028/U**

Burner Controls

American models 120Vac (RM78xx)
(Main ignition time: –; Number of ignition attempts: –; Flame failure response time: 0,8/3,0s)

Control model	Outputs	Operation	Pilot	Prepurge timer	Pilot ignition time	Post purge time	Valve proofing system	Comment	Type
Flame switch	2xSPDT	Cont.	–	–	–	–	–		**RM7823A1016/U**
Full	HF/LF/Modulate	Cont.	Interrupted	•	4/10s	15s	–		**RM7840E1016/U**
Atmosferic	LF/Modulate	Cont.	Interrupted	•	4/10s	15s	–		**RM7840G1014/U**
Full	HF/LF/Modulate	Cont.	Interrupted	•	4/10s	15s	–		**RM7840L1018/U**
Full	HF/LF/Modulate	Cont.	Selectable	•	4/10s	15s	–		**RM7840L1026/U**
Full	HF/LF/Modulate	Cont.	Interrupted	•	4/10s	15s	Integrated	Uses S7800A1142/U display for programming	**RM7840L1075/U**
Atmosferic	on/off	Cont.	Interrupted	–	4/10s	15s	–		**RM7840M1017/U**
Primary	–	Intermit.	Intermittent	–	4/10s	–	–	No shutter check	**RM7890A1015/U**
Primary	–	Cont.	Intermittent	–	4/10s	–	–		**RM7890B1014/U**
Primary	–	Cont.	Intermittent	–	–	–	–	Fixed 4s safety time.	**RM7890B1030/U**

American models 230Vac (EC78xx)
(Main ignition time: –; Number of ignition attempts: –; Flame failure response time: 0,8/3,0s)

Control model	Outputs	Operation	Pilot	Prepurge timer	Pilot ignition time	Post purge time	Valve proofing system	Comment	Type
Flame switch	2xSPDT	Cont.	–	–	–	–	–		**EC7823A1004/U**
Primary	–	Intermit.	Intermittent	–	4/10s	–	–	No shutter check	**EC7890A1011/U**

American models 24Vdc (RM7824)
(Main ignition time: –; Number of ignition attempts: –; Flame failure response time: 0,8/3,0s)

Control model	Outputs	Operation	Pilot	Prepurge timer	Pilot ignition time	Post purge time	Valve proofing system	Comment	Type
Primary	–	Cont.	–	–	4/10s	–	–	C7024E/F UV detector only	**RM7824A1006/U**

R78XX

Flame amplifiers

Used with RM7824A 24Vdc model only. For UV sensor C7024E/F. Self-Check. Not CE approved. FFRT: 3.0s	**R7824C1002/U**
For flame rod (cable<5m). FFRT: EU=1.0s / US=0.8s	**R7847A1025/U**
For flame rod (cable<5m). FFRT: EU=2.0s / US=3.0s	**R7847A1033/U**
For flame rod (cable>5m) and UV sensor C7012A/C/G. FFRT: EU=1.0s / US=0.8s	**R7847A1074/U**
For flame rod (cable>5m) and UV sensor C7012A/C/G. FFRT: EU=2.0s / US=3.0s	**R7847A1082/U**
For flame rod (cable<5m). Ampli-Check. FFRT: EU=1.0s / US=0.8s	**R7847B1023/U**
For flame rod (cable<5m). Ampli-Check. FFRT: EU=2.0s / US=3.0s	**R7847B1031/U**
For flame rod (cable>5m) and UV sensor C7012A/C/G. Ampli-Check. FFRT: EU=1.0s / US=0.8s	**R7847B1064/U**
For flame rod (cable>5m) and UV sensor C7012A/C/G. Ampli-Check. FFRT: EU=2.0s / US=3.0s	**R7847B1072/U**
For C7012E/F UV sensor. Shutter-Check. Not CE approved. FFRT: EU=2.0s / US=3.0s	**R7847C1005/U**
For UV sensors C7027/35/44. FFRT: EU=1.0s / US=0.8s	**R7849A1015/U**
For UV sensors C7027/35/44. FFRT: EU=2.0s / US=3.0s	**R7849A1023/U**
For UV sensors C7027/35/44. Ampli-Check. FFRT: EU=1.0s / US=0.8s	**R7849B1013/U**
For UV sensors C7027/35/44. Ampli-Check. FFRT: EU=2.0s / US=3.0s	**R7849B1021/U**

Burner Controls

For UV sensors C7927 and visible light C7962. Ampli-Check. Not CE approved. FFRT: EU=2.0s / US=3.0s	**R7851B1000/U**
For UV sensors C7961E/F. Shutter-Check. Not CE approved. FFRT: EU=2.0s / US=3.0s	**R7851C1008/U**
For IR sensors C7915. Ampli-Check. Not CE approved. FFRT: EU=2.0s / US=3.0s	**R7852B1009/U**
For UV sensors C7061A/F. Shutter-Check. FFRT: EU=2.0s / US=3.0s	**R7861A1026/U**
For UV sensors C7061A/F. Shutter-Check. FFRT: EU=1.0s / US=0.8s	**R7861A1034/U**
For UV sensors C7076A/D/F. Shutter-Check. FFRT: EU=2.0s / US=3.0s	**R7886A1001/U**

Purge timers

ST7800

Prepurge time = 2s.	**ST7800A1005/U**
Prepurge time = 7s.	**ST7800A1013/U**
Prepurge time = 10s.	**ST7800A1021/U**
Prepurge time = 30s.	**ST7800A1039/U**
Prepurge time = 40s.	**ST7800A1047/U**
Prepurge time = 60s.	**ST7800A1054/U**
Prepurge time = 90s.	**ST7800A1062/U**
Prepurge time = 2.5min.	**ST7800A1070/U**
Prepurge time = 4.0min.	**ST7800A1088/U**
Prepurge time = 6.0min.	**ST7800A1096/U**
Prepurge time = 9.0min.	**ST7800A1104/U**
Prepurge time = 12.0min.	**ST7800A1112/U**
Prepurge time = 15.0min.	**ST7800A1120/U**
Prepurge time = 22.0min.	**ST7800A1138/U**
Prepurge time = 30.0min.	**ST7800A1146/U**

Wiring bases

Q7800

Mounting subbase for 7800-series. Panel mount.	**Q7800A1005/U**
Mounting subbase for 7800-series. Wall mount.	**Q7800B1003/U**

Keyboard display modules

S7800

Language: English. With integrated Modbus communication option.	**S7800A1001/U**
Language: French	**S7800A1035/U**
Language: German	**S7800A1043/U**
Language: Italian	**S7800A1050/U**
Language: Spanish	**S7800A1068/U**
Language: Portuguese	**S7800A1126/U**
Language: English. Enhanced model, needed to program Enhanced 7800-series models (with VPS).	**S7800A1142/U**

Remote Communication Modules

S7810

Data Controlbus Module for communication or for remote S7800 mounting.	**S7810A1009/U**
MODBUS communication card. For US models only, not CE approved (includes remote reset over Modbus).	**S7810M1003/U**
MODBUS communication card. CE approved (no remote reset over Modbus).	**S7810M1029/U**
Remote Reset Module.	**S7820A1007/U**

Burner Controls

Parts

5-wire connector for S7800/10/20	**203541/U**
Remote mounting bracket for S7800	**203765/U**
Display extension cable assembly. Cable length 1.5 m	**221818A/U**
Display extension cable assembly. Cable length ca. 3 m. Note: assure no electrical noise is present to avoid connection problems, due to extra long cable.	**221818C/U**
Nema 4 cover assembly for remote mounting of S7800 display.	**50023821-001/U**
Nema 4 cover assembly for remote mounting of S7800 display. Incl. remote reset button and wiring.	**50023821-002/U**

Burner Controls DBC2000-series

DBC2000

The Honeywell DBC2000 is a microprocessor-based integrated burner controller for automatically fired gas, oil or combination fuel industrial single burner power burner applications. The DBC2000 system consists of the relay module and wiring subbase. The Standard Model provides the minimum requirements to control an industrial burner system; the Enhanced Model includes an integrated Valve Proofing System; the Ultimate model includes bus communication on top of this. For all type of burners with unlimited capacity in intermittent operation. An integrated timer assures an automated recycle sequence after ca 24h uninterrupted heat demand.

Approvals	• CE approved according EN298 for **intermittent** operation (when used with correct flame sensor). • AGA certified
Protection class	IP40
Ambient temperature	-10 ... 60 ºC
Maximum humidity	90 %rh
Note	Extra features: • Integrated 24h auto recycle timer • Selectable Pilot or Direct Main Burner Ignition operation. • Selectable post-purge (15s) or no-post-purge (0s) operation.
Control model	Full
Outputs	HF/LF/Modulate
Operation	24h auto-recycle
Pilot	Selectable intermittent / interrupted
Pilot ignition time	3s (Pilot only: 5s)
Main ignition time	3s
Post purge time	15/0s
Number of ignition attempts	1
Flame failure response time	<1s
Flame detector	UV/FR
Additional description	DBC2000 models have two integrated flame amplifiers: UV Power Tube (UV) and Rectification (FR), that are selectable by a jumper at the back of the unit. Default is FR (jumper present). Applicable flame sensors: • Flame rod (FR) • UV sensor family C7027/35/44 (UV) • UV sensor family C7012A/G (FR) • IR sensor family IRD1020 (FR)

Burner Controls

230Vac versions

Prepurge time	Valve proofing system	Comment	Type
35s	–	Standard Model	**DBC2000E1018**
0s	–	Standard Model	**DBC2000E1026**
60s	–	Standard Model	**DBC2000E1034**
35s	Integrated	Enhanced Model	**DBC2000E2019**

115Vac versions

Prepurge time	Valve proofing system	Comment	Type
35s	–	Standard Model	**DBC2000E1000**
35s	Integrated	Enhanced Model	**DBC2000E2001**

Accessories for use with DBC2000 (see dedicated chapter for details)

Cable (ca. 250mm) with jack plug for remote 0..15 micro-ampere flame signal reading. For use with jack plug socket on the front of DBC2000 and R4343 or on plug-in amplifier of R4348.	**117053/U**
Industrial flame rod.	**_C7008**
PurplePeeper standard UV detector and IP67 protection.	**_C7012A/G**
MiniPeeper standard UV detector and IP54 protection.	**_C7027**
MiniPeeper with field replaceable tube and IP65 protection.	**_C7035**

C7008

C7012

C7027

C7035

Flame Sensors

1

UV flame sensors C7027/35/44 ("MiniPeeper")

Compact analogue UV flame sensor to detect ultraviolet radiations emitted by combustion flames. Used with Honeywell burner controls to provide flame supervision for commercial and industrial burner applications.

C7027A

Approvals	• CE approved according to EN298, only in combination with matching Honeywell flame amplifiers and burner controls. • UL/CSA approved for USA, only in combination with matching Honeywell flame amplifiers and burner controls. • AGA approved for Australia, only in combination with matching Honeywell flame amplifiers and burner controls. • Only for intermittent operation. The burner has to recycle at least once per 24 hours.
Features	• Rugged, compact, with encapsulated sensing tube for maximum protection. • Quick and easy installation on standard sight pipe. • Detects UV radiation in the 310nm range of the spectrum.
Additional description	• Models marked "DIN Approved Model" have no CSA/UL marking on the product label and have an insulated cable instead of wires. • Maximum **recommended** cable length: ca. 50m

C7027 with clamp type connector

Mechanical connection	Cable length m	Ambient temperature °C	Protection class	Comment	**Type**
1/2"	2.4	-18 ... 102	IP54		**C7027A1023/U**
1/2"	2.4	-40 ... 102	IP54		**C7027A1031/U**
1/2"	2.4	-18 ... 102	IP54	"DIN/BG" model	**C7027A1056/U**

C7027 with 1/2" NPT threaded spud connector

C7027A1064

Mechanical connection	Cable length m	Ambient temperature °C	Protection class	Comment	**Type**
1/2"	2.4	-18 ... 102	IP54		**C7027A1049/U**
1/2"	7.3	-40 ... 102	IP54		**C7027A1064/U**

C7035 with field replaceable UV tube

C7035A1049

Mechanical connection	Cable length m	Ambient temperature °C	Protection class	Comment	**Type**
1"	1.8	-18 ... 121	IP67		**C7035A1023/U**
1"	1.8	-40 ... 121	IP67		**C7035A1031/U**
1" BSP	1.8	-18 ... 121	IP67	"DIN/BG" model	**C7035A1049/U**
1"	1.8	-40 ... 121	IP67		**C7035A1056/U**
1" BSP	1.8	-40 ... 121	IP67	"DIN/BG" model	**C7035A1064/U**
1"	1.8	-18 ... 121	IP67	High temp. wires (315C)	**C7035A1080/U**

Flame Sensors

C7927A

C7927 solid state UV sensor (for EC/RM78xx only)

Mechanical connection	Cable length m	Ambient temperature °C	Protection class	Comment	Type
1/2"	1.8	-18 ... 102	IP54	Not CE (EN298) approved.	C7927A1016/U

Used with controllers

Industrial 115Vac flame switch (SPST)with integrated UV flame amplifier.	BC1000A0110U
Industrial 230Vac flame switch (SPST)with integrated UV flame amplifier.	BC1000A0220U
Industrial 115Vac flame switch (SPDT)with integrated UV flame amplifier.	BC1000B2001
Industrial 230Vac flame switch (SPDT)with integrated UV flame amplifier.	BC1000B2019
Industrial 115Vac burner controller with integrated FR/UV flame amplifier.	DBC2000E1000
Industrial 230Vac burner controller with integrated FR/UV flame amplifier.	DBC2000E1018
Industrial 115Vac burner controller with integrated FR/UV flame amplifier and VPS.	DBC2000E2001
Industrial 230Vac burner controller with integrated FR/UV flame amplifier and VPS.	DBC2000E2019
Industrial 115Vac burner controller with plug-in R7849-series UV flame amplifier.	_RM78xx
Industrial 230Vac burner controller with plug-in R7849-series UV flame amplifier.	_EC78xx
Industrial 115Vac flame switch with integrated UV flame amplifier.	R4343E1006
Industrial 230Vac flame switch with integrated UV flame amplifier.	R4343E1014
Industrial 115/230Vac flame switch with integrated UV flame amplifier.	R4343E1048-ST005
SLATE(TM) burner management system.	R8001B2001/U

Used with flame Amplifiers (EC/RM78xx and R4348 only)

Amplifier for the Honeywell R4348 series for use with C7027/35/44 sensors	R7323A1020
Amplifier for the Honeywell 7800 series burner control for use with C7027/35/44 sensors	_R7849Axx
Ampli-check amplifier of the Honeywell 7800 series burner control for use with C7027/35/44 UV sensors	_R7849Bxx
Ampli-check amplifier of the Honeywell 7800 series burner control for use with C7927 solid state UV sensor	_R7851Bxx
Ampli-check amplifier of the Honeywell SLATE(TM) burner management system for use with C7027/35/44 UV sensor	R8001F1091/U
Ampli-check amplifier of the Honeywell SLATE(TM) burner management system for use with C7927 solid state UV sensor	R8001S1071/U

Replacement tube for C7035

Ultraviolet sensing tube (-40° to 121°C) for C7035/C7061 flame scanners	129464N/U
Ultraviolet sensing tube (-18° to 121°C) for C7035/C7061 flame scanners	129464M/U

Flame Sensors

1

UV flame sensors C7012A/C/E/F/G

Solid-state electronic UV flame sensor to detect ultraviolet radiation emitted by the combustion of most carbon-containing fuels such as natural gas, LP gases, and oil.
Used with Honeywell burner controls to provide flame supervision in continuous operation for industrial burner applications.

Approvals	• CE approved according to EN298 only in combination with matching Honeywell flame amplifiers and burner controls.
	• C7012E/F models are approved for use in continuous operation, by using dynamic self-check.
	• C7012C/F models are UL listed for use in explosion hazardous locations; Class 1, groups C and D; and Class 2, groups E, F, and G.
Cable length	2.4 m
Additional description	• Two flame detectors can be wired in parallel to reduce nuisance shutdowns in difficult flame sighting applications.
	• Quick and easy installation on standard 3/4" NPT sight pipe (Ex-proof models 1" NPT).
	• The "DIN" models have an additional grounding wire (green/yellow)

C7012A

CE

FM APPROVED

UL

Standard models for intermittent operation

Mechanical connection	Ambient temperature °C	Protection class	Supply voltage	Comment	Note	Type
3/4" NPT	-4 ... 79	IP66	110..120 Vac			**C7012A1145/U**
3/4" NPT	-4 ... 79	IP66	240 Vac			**C7012A1194/U**
3/4" NPT	-4 ... 79	IP66	220 Vac	"DIN" version		**C7012G1019/U**

Standard models for continuous operation (with mechanical shutter)

Mechanical connection	Ambient temperature °C	Protection class	Supply voltage	Comment	Note	Type
3/4" NPT	-29 ... 79	IP66	110..120 Vac		Shutter coil voltage: 120V only	**C7012E1104/U**
1" NPT	-40 ... 79	IP66	110..120 Vac		Shutter coil voltage: 120V only	**C7012E1120/U**
3/4" NPT	-29 ... 79	IP66	240 Vac		Shutter coil voltage: 120V only	**C7012E1153/U**
3/4" NPT	-29 ... 79	IP66	220 Vac	"DIN" version	Shutter coil voltage: 120V only	**C7012E1187/U**
3/4" NPT	-29 ... 79	IP66	110 Vac	"DIN" version	Shutter coil voltage: 120V only	**C7012E1195/U**

UL listed explosion proof models for intermittent operation

Mechanical connection	Ambient temperature °C	Protection class	Supply voltage	Comment	Note	Type
1" NPT	-29 ... 79	NEMA 7	110..120 Vac	Ex approved in USA only		**C7012C1042/U**

C7012F

UL listed explosion proof models for continuous operation (with mechanical shutter)

Mechanical connection	Ambient temperature °C	Protection class	Supply voltage	Comment	Note	Type
1" NPT	-29 ... 79	NEMA 7	110..120 Vac	Ex approved in USA only	Shutter coil voltage: 120V only	**C7012F1052/U**

Flame Sensors

Used with controllers

Industrial burner controller used with plug-in flame amplifier R78xx-series.	**_EC/RM78**

Industrial flame switch (115Vac) with integrated rectification flame amplifier.	**R4343D1009**
Industrial flame switch (230Vac) with integrated rectification flame amplifier.	**R4343D1017**

Standard amplifier for the Honeywell EC/RM78xx series for use with C7012A/C/G sensors.

FFRT = 1.0 or 0.8 sec	**R7847A1074/U**
FFRT = 2.0 or 3.0 sec	**R7847A1082/U**

Ampli-check amplifier for the Honeywell EC/RM78xx series for use with C7012A/C/G sensors.

FFRT = 1.0 or 0.8 sec	**R7847B1064/U**
FFRT = 2.0 or 3.0 sec	**R7847B1072/U**

Self-check amplifier for the Honeywell EC/RM78xx series for use with C7012E/F sensors.

FFRT = 2.0 or 3.0 sec. Note: not CE approved (GAD) for use in Europe. When used with EC78xx controls (230Vac), take precautions to reduce line voltage shutter voltage to prevent damage to the connected C7012E/F !!	**R7847C1005/U**

Accessories

Swivel mount for adjustable positioning of the UV sensor	**118367A/U**
Mounting flange with 1" NPT internal thread for mounting on 1" sight pipe (to replace standard 3/4" NPT flange), for C7012A/E/G only	**124198/U**
Quartz focussing lens	**124204/U**

Replacement parts

Ultraviolet sensing tube for C7012 sensor	**113228/U**
Coil and shutter assembly for C7012E/F models only	**190971B/U**

Flame Sensors

UV flame sensors C7061A/F

C7061A

CE

FM
APPROVED

UL

CSA
C   US

Solid-state electronic UV flame sensor to detect ultraviolet radiation emitted by the combustion of most carbon-containing fuels such as natural gas, LP gases, and oil.
Used with Honeywell burner controls to provide flame supervision in continuous operation for industrial burner applications.

Approvals	• CE approved according to EN298 only in combination with matching Honeywell flame amplifiers and burner controls.
	• C7061-series models are approved for use in continuous operation, by using dynamic self-check.
	• C7061F1 models are ATEX approved for use in explosion hazardous locations; II G Ex d IIC T6, zone 1&2.
	• C7061F2 models are UL listed for use in explosion hazardous locations; Class 1, groups C and D; and Class 2, groups E, F, and G.
Ambient temperature	-40 ... 80 °C
Additional description	• Two flame detectors can be wired in parallel to reduce nuisance shutdowns in difficult flame sighting applications.
	• Quick and easy installation on standard 3/4" NPT sight pipe (Ex-proof models: 1" NPT).
	• Uses the same UV sensing ("Power") tube as used with C7027/35/44 series "MiniPeeper": no external power supply.
	• The "DIN" models have an additional grounding wire (green/yellow)

European models for continuous operation, with mechanical shutter

Mechanical connection	Cable length m	Protection class	Comment	Note	**Type**
3/4" NPT	0	IP66		Dual shutter coil voltage: 120/230V	**C7061A1020/U**
3/4" NPT	0	IP66	With focussing lens	Dual shutter coil voltage: 120/230V	**C7061A1079/U**

C7061F1003

ATEX certified Ex-proof European models for continuous operation, with mechanical shutter (Ex: CENELEC II G Ex d IIC T6; zone 1&2)

Mechanical connection	Cable length m	Protection class	Comment	Note	**Type**
1" NPT	0	IP67	Incl. cable gland	Dual shutter coil voltage: 120/230V	**C7061F1003**

C7061A

American models for continuous operation, with mechanical shutter

Mechanical connection	Cable length m	Protection class	Comment	Note	**Type**
3/4" NPT	2.4	IP66		Single shutter coil voltage: 120V only	**C7061A1012/U**
3/4" NPT	2.4	IP66	With focussing lens	Single shutter coil voltage: 120V only	**C7061A1061/U**

C7061F2001

UL listed Ex-proof American models for continuous operation, with mechanical shutter (Ex: Class I, gr.C/D and Class II, gr.E/F/G)

Mechanical connection	Cable length m	Protection class	Comment	Note	**Type**
1" NPT	2.4	NEMA 7	Ex-proof in Americas only	Single shutter coil voltage: 120V only	**C7061F2001/U**

Flame Sensors

KOSHA approved Ex-proof Korean models for continuous operation, with mechanical shutter (Ex: Ex d IIC T6 IP65)

Mechanical connection	Cable length m	Protection class	Comment	Note	Type
1" NPT	0	IP65	Ex-proof in Korea only	Dual shutter coil voltage: 120/230V	**C7061F1011**

Used with controllers

Industrial burner controller used with plug-in flame amplifier.	**_EC/RM78**

SLATE$^{(TM)}$ burner management system.	**R8001B2001/U**

Self-check amplifier for the Honeywell EC/RM78xx series.

FFRT = 2.0 or 3.0 sec. Note: When used with C7061 models with 120V shutter voltage only and with EC78xx controls (230Vac), take precautions to reduce line voltage shutter voltage to prevent damage to the connected C7061 !!	**R7861A1026/U**
FFRT = 1.0 or 0.8 sec. Note: When used with C7061 models with 120V shutter voltage only and with EC78xx controls (230Vac), take precautions to reduce line voltage shutter voltage to prevent damage to the connected C7061 !!	**R7861A1034/U**

Self-check amplifier for the Honeywell SLATE(TM) burner management system

Self-check amplifier of the Honeywell SLATE$^{(TM)}$ burner management system for use with C7061-series UV sensor	**R8001S1051/U**

Accessories

Gasket, silicone rubber. For installing viewing window or lens(3pcs required)	**114465/U**
Swivel mount for adjustable positioning of the UV sensor	**118367A/U**
Mounting flange for C7061A with 1" NPT internal thread for mounting on 1" sight pipe (to replace standard 3/4" NPT flange)	**124198/U**
Quartz focussing lens	**124204/U**

Replacement parts

Ultraviolet sensing tube for C7061 sensors, -40..102C	**129464N/U**
Coil and shutter assembly	**190971B/U**

Flame Sensors

1

UV flame sensors C7076

UV flame sensor to detect ultraviolet radiation emitted by combustion flames.
Used with Honeywell burner controls to provide flame supervision in continuous operation
for industrial burner applications, that use solid fuel or heavy oil, dirty gas, hydrogen, sulphur,
etc. as fuel.

C7076A1007

CE

Approvals	• CE approved according to EN298 only in combination with matching Honeywell flame amplifiers and burner controls.
	• Approved for use in continuous operation, by using dynamic self-check.

Mechanical connection	1" NPT
Ambient temperature	-40 ... 70 °C
Protection class	IP65
Note	Shutter coil voltage: 120V only
Additional description	• Integrated air purge connection.
	• Quick and easy installation on standard 1" NPT sight pipe.

Standard enclosure (IP65)

Supply voltage	Comment	Type
110..120 Vac		**C7076A1007/U**
220..240 Vac		**C7076A1031/U**

Flame Sensors

U2S-PF

Functional replacements of C7076F models for use in hazardous areas (see also section "Industrial Flame Monitoring").

Triple flame sensor: UV-tube, UV-ss and IR. 15FT cable (5m). Approvals: CE, ATEX, SIL 3	**U2-1010S-PF**
Triple flame sensor: UV-tube, UV-ss and IR. 50FT cable (15m). Approvals: CE, ATEX, SIL 3	**U2-1010S-PF-050**
Triple flame sensor: UV-tube, UV-ss and IR. 100FT cable (30m). Approvals: CE, ATEX, SIL 3	**U2-1010S-PF-100**
Single flame sensor: IR only. 15FT cable (5m). Approvals: CE, ATEX, SIL 3	**U2-1012S-PF**
Single flame sensor: UV-tube only. 15FT cable (5m). Approvals: CE, ATEX, SIL 3	**U2-1016S-PF**
Dual flame sensor: UV-tube and IR. 15FT cable (5m). Approvals: CE, ATEX, SIL 3	**U2-1018S-PF**

Used with controllers

Industrial 120Vac burner controller. Use R7886 UV plug-in flame amplifier.	**_RM78xx**
Industrial 230Vac burner controller. Use R7886 UV plug-in flame amplifier.	**_EC78xx**

Amplifier of the Honeywell 7800 series burner control for use with C7076-series sensors	**R7886A1001/U**

Replacement tube for C7076

Ultraviolet sensing tube for C7076 sensor	**191053/U**

Replacement shutter assembly for C7076

Replacement shutter and coil assembly for C7076, with black painted shutter	**190971E/U**

Replacement internal chassis for C7076

Replacement electronic chassis module, **excluding** sensing tube for C7076A/D models (120Vac)	**191002B/U**
Replacement electronic chassis module, **excluding** sensing tube for C7076A/D models (230Vac)	**191002D/U**
Replacement electronic chassis module, **excluding** sensing tube for C7076F models (120Vac)	**191002BF**
Replacement electronic chassis module, **excluding** sensing tube for C7076F models (230Vac)	**191002DF**

Flame Switches

1

Flame relays BC1000

The BC1000A/B series is a flame switch for intermittent operation to indicate presence or absence of a flame and to be applied in commercial or industrial burner installations.
- The BC1000A is specially designed to be used as manual start/stop burnercontroller.
  For all type of burners with unlimited capacity.

BC1000

Approvals	• CE approved according EN298 (for **intermittent** operation), AGA
Protection class	IP00
Ambient temperature	-20 ... 60 °C
Maximum humidity	90 %rh
Note	• The BC1000A1/B1 models will operate also with the "Satronic" IRD1020 range of infrared sensors. Note that this combination is NOT CE approved for use on installations that fall under the GAD (Gas Appliances Directive).
Additional description	• BC1000A/B provides a Safe Start function which checks if a flame signal is present when applying power to the device.
	• BC1000A1/B1 models are for use with rectification type flame sensors, such as flame rods and C7012A/G UV sensors.
	• BC1000A2/B2 models are for use with Honeywell UV sensor models C7027, C7035 and C7044.

230Vac versions

Outputs	Operation	Flame failure response time	Flame detector	Supply voltage	Comment	**Type**
1xSPST	Manual stop/start	2s	Rectification	220..240 Vac	Flame rod (or C7012A/G)	**BC1000A0220F**
1xSPST	Manual stop/start	2s	UV	220..240 Vac	C7027, C7035, C7044	**BC1000A0220U**
1xSPDT	Flame switch	<1s	Rectification	220..240 Vac	Flame rod (or C7012A/G)	**BC1000B1018**
1xSPDT	Flame switch	<1s	UV	220..240 Vac	C7027, C7035, C7044	**BC1000B2019**

115Vac versions

Outputs	Operation	Flame failure response time	Flame detector	Supply voltage	Comment	**Type**
1xSPST	Manual stop/start	2s	Rectification	110..120 Vac	Flame rod (or C7012A/G)	**BC1000A0110F**
1xSPST	Manual stop/start	2s	UV	110..120 Vac	C7027, C7035, C7044	**BC1000A0110U**
1xSPDT	Flame switch	<1s	Rectification	110..120 Vac	Flame rod (or C7012A/G)	**BC1000B1000**
1xSPDT	Flame switch	<1s	UV	110..120 Vac	C7027, C7035, C7044	**BC1000B2001**

Accessories for use with BC1000A1/B1 (see dedicated chapter for details)

Industrial flame rod.	_C7008
PurplePeeper standard UV detector and IP67 protection.	_C7012A/G

C7008

Accessories for BC1000A2/B2 (see dedicated chapter for details)

MiniPeeper standard UV detector and IP54 protection.	_C7027
MiniPeeper with field replaceable tube and IP65 protection.	_C7035

C7012A

IRD1020

C7027

C7035

Flame Switches

Flame relay R4343

The R4343D/E series is a flame switch for intermittent operation to indicate presence or absence of a flame and to be applied in commercial or industrial burner installations. light.
- Flame current meter jack socket on the front permits monitoring of flame signal strength, by using any appropriate microampere meter (0-10uA minimum scale).
- Plug-in mounts onto a sub base (included) for surface mounting.

Providing an indication of absense or presence of a flame in intermittent industrial oil/gas burner applications by an open or closed relay contact.

R4343E1030

CE

Approvals	• CE approved according EN298 (for intermittent operation)
Protection class	IP40
Ambient temperature	-10 ... 60 $^{\circ}$C
Maximum humidity	90 %rh
Note	The R4343D models will operate also with the "Satronic" IRD1020 range of infrared sensors. Note that this combination is NOT CE approved for use on installations that fall under the GAD (Gas Appliances Directive).
Outputs	1xDPDT
Operation	Intermit.
Additional description	• R4343D models are for use with rectification type flame sensors, such as flame rods and C7012A/G UV sensors. • R4343E models are for use with Honeywell UV sensor models C7027, C7035 and C7044.

Ionisation flame detectors

Flame failure response time	Flame detector	Supply voltage	**Type**
<1s	Rectification	110..120 Vac	**R4343D1009**
<1s	Rectification	220..240 Vac	**R4343D1017**
<2s	Rectification	115/230 Vac	**R4343D1041-ST005**

UV flame detectors

Flame failure response time	Flame detector	Supply voltage	**Type**
<1s	UV	110..120 Vac	**R4343E1006**
<1s	UV	220..240 Vac	**R4343E1014**
<2s	UV	115/230 Vac	**R4343E1048-ST005**

Accessories (see dedicated chapter for details)

Cable (ca. 250mm) with jack plug for remote 0..15 micro-ampere flame signal reading. For use with jack plug socket on the front of DBC2000 and R4343 or on plug-in amplifier of R4348.	**117053/U**
Industrial flame rod.	**_C7008**
Standard Purplepeeper UV detector and IP65 protection.	**_C7012A/G**
MiniPeeper standard UV detector and IP54 protection.	**_C7027**
MiniPeeper with field replaceable tube and IP65 protection.	**_C7035**

C7008

C7012A

C7027

C7035

Industrial Flame Monitoring

Industrial flame monitoring - U2-101xS All-In-One Viewing head

The Honeywell U2-101xS series model all-in-one viewing head with integrated signal processor delivers flame discrimination in the toughest environments. With automatic setup and the ability to monitor UV and IR flame components simultaneously or separately, the U2-101xS all-in-one flame scanner offers improved burner up time and reliability.
Industrial process burners, multiple burner system.

U2S

Touch screen user interface	A tempered and fully sealed glass touch wheel sensor: no mechanical moving buttons. • Local display: LED display for flame signal monitoring onsite • Configuration menu is locked to avoid accidental access automatically after a few minutes of inactivity. To unlock, make 1 full 360 turn with the finger around the touch screen window.
Power supply	24 Vdc; 2.6 VA
Protection class	• NEMA 4x, IP66 • Zone 2 Class 1 Div 2 Group A, B, C and D • U2-101xS: II 3G Ex nA nC T5 Gc • U2-101xS-PF: II 2G Ex d IIC T6 Gb / 2D Ex d tb IIIC T85 Db
Ambient temperature	-40 ... 70 $^{\circ}$C
Maximum humidity	85 %rh
Approvals	• CE (EN298) for **continuous** operation (Europe). • CSA and FM (US) • IECEx and ATEX (explosion proof) • NCC/Inmetro (Brazil) • EAC (Russia) • KTL (Korea) • SIL 3 Capable
Housing (HxWxD)	117 mm; 117 mm; 155 mm
Weight	2.8 kg
Output signal	• 4-20 mA (or 0-20 mA) with scale multiplier for remote meter or DCS and local display.
Relay outputs	Wire flame and self-check relay contacts in serial to obtain fail-safe operation. • Flame relay: SPST - Normally Open • Self-check relay: SPST - Normally Open
End switch function/capacity	30 Vdc, 1 A (resistive)
Note	• For "PF" models it is highly recommended to use a pipe coupler (see R-518-xx accessories), for easy mounting on to a viewing pipe. • Because Honeywell cable accessories are of USA origin, all cable lengths are measured in Ft (Feet, 1 Ft = 304.8mm)
Control model	Flame switch
Outputs	2xSPST
Flame failure response time	1/2/3s selectable

Industrial Flame Monitoring

Additional description	• Sensor: UV Tube (UVTron), UV photo diode (UVss), IR sensor or a combination of these three sensors
	• Response (peak): 210 nm (UVTron), 310 nm (UVss), 1400 nm (IR)
	• Technology: Flicker (UVss and IR), Pulse Count (UVTron)
	• 100% immunity for X-Ray and Gamma radiation
	• Self-check (Electronic shutter): internal processor monitors tube health
	• All-in-one flame scanner: no additional wiring cabinet needed
	• Remote communication: Modbus RTU (2 wire RS485 compatible)
	• 7 files for different configuration, that can be selected by applying or removing a voltage on the dedicated terminal (where FILE 0 is selected < 16Vdc and FILE X > 21Vdc) which this allows smooth file transition possible on mixed fuel burners. File 1..7 are selectable via the Modbus connection.

U2-S cable connector models. For general use and Zone 2. Excluding cable, connector, PT adapter and air purge coupler.

Product description	Comment	Flame detector	Type
Triple flame sensor.	3G Ex nA nC T5	UVTron+UVSS+IR	**U2-1010S**
Single flame sensor.	3G Ex nA nC T5	IR	**U2-1012S**
Single flame sensor.	3G Ex nA nC T5	UVTron	**U2-1016S**
Dual flame sensor.	3G Ex nA nC T5	UVTron+IR	**U2-1018S**

U2S-PF

U2-S models with factory mounted cable and 3/4" cable gland. For use in Zone 1. Excluding PT adapter and air purge coupler.

Product description	Comment	Flame detector	Type
Triple sensor . Cable length 10 Ft (3 m).	Ex d IIC T6	UVTron+UVSS+IR	**U2-1010S-PF**
Triple sensor. Cable length 50 Ft (15 m).	Ex d IIC T6	UVTron+UVSS+IR	**U2-1010S-PF-050**
Triple sensor . Cable length 100 Ft (30 m).	Ex d IIC T6	UVTron+UVSS+IR	**U2-1010S-PF-100**
Single sensor. Cable length 10 Ft (3 m).	Ex d IIC T6	IR	**U2-1012S-PF**
Single sensor . Cable length 10 Ft (3 m).	Ex d IIC T6	UVTron	**U2-1016S-PF**
Dual sensor. Cable length 10 Ft (3 m).	Ex d IIC T6	UVTron+IR	**U2-1018S-PF**

Parts and accessories - 12 conductor C22S ITC/CIC approved cable for U2-S, with factory mounted R-518-10 connector

U2S-ASYU2S

Cable length 50 Ft (15m)	**ASYU2S**
Cable length 100 Ft (30 m)	**ASYU2S-100**
Cable length 200 Ft (60 m)	**ASYU2S-200**
Cable length 50 Ft (90 m)	**ASYU2S-300**
12 Conductor cable with braided shield. Orderable in 1 Ft (30.48 cm) incrementals, minimum length is 15 Ft.	**C22S**

Parts and accessories - cable connector for U2-S

Quick disconnect 12-pins Turck connector for U2-S "non-PF" models.	**R-518-10**

ASYU2S

Industrial Flame Monitoring

ISO-UNIT

ISO-UNITSS

Parts and accessories - pipe fitting accessories

1" NPTF sealing union with quartz window and 1/2" NPTF purge port	**ISO-UNIT**
1" NPTF stainless steel sealing union with quartz window and 1/2" NPTF purge port	**ISO-UNITSS**
1" NPTF sealing union with quartz window and 1/2" NPTF purge port. High pressure version with 1/2" thick high pressure quartz window	**ISO-UNITHPGT**
Swivel mount, 2" pipe slip to 1" NPT female connection. Anodized aluminium.	**M-701-1**
Swivel mount, 2" NPT female to 1" NPT female connection. Anodized aluminium.	**M-701-2**
Flanged swivel mount, 2" flanged to 1" NPTF	**M-701-2-FLG**
Swivel mount, 2" NPT female to 1" NPT female. Stainless steel construction	**M-701-2-SS**
Flanged swivel mount, 3-bolt, 4.5" flanged to 1" NPTF	**M-701-3**
Swivel mount, 3" NPTF to 1" NPTF connection	**M-701-3P**
Swivel mount, 2-bolt to 1" NPTF connection	**M-701-4**
Swivel mount bushing 1" x 1/2" NPT, 1/2" connection	**M-701-5**
1" NPT locking coupler with high temperature gasket	**R-518-CL12-HTG**
1" NPT aluminum locking quick disconnect/cam and groove coupler adapter with 1/2" NPT purge port. Used with U2 processor/viewing heads	**R-518-CL12-PG**
1/2" NPT locking coupler with high temperature gasket	**R-518-CL13-HTG**
1" NPT Ultem insulating locking coupler adapter. Used with U2 processor/viewing head	**R-518-PT12**
1" NPT Ultem locking coupler adapter with quartz lens	**R-518-PT12L**
1/2" NPT Ultem locking coupler adapter only	**R-518-PT13**
1/2" NPT Ultem locking coupler adapter with quartz lens	**R-518-PT13L**

M-701-2

M-701-2-FLG

M-701-2-SS

M-701-3

M-701-3P

M-701-4

Industrial Flame Monitoring

R-518-CL12-HTG

R-518-CL12-PG

R-518-CL13-HTG

R-518-PT12

R-518-PT12L

R-518-PT13

FLAMETOOLS-HMI

Parts and accessories - programming and monitoring tools

Configuration colour touch screen display, with preinstalled Windows CE based configuration software and Modbus connection to connect 700xCSP, P222, P5xx and U2-S signal processors	**FLAMETOOLS-HMI/U**

Parts and accessories - various parts

Replacement O-ring for ISO-UNIT, ISO-UNITSS and ISO-UNITHPGT	**ISO-OR**
Replacement quartz window for ISO-Unit and ISO-UnitSS	**ISO-QW**
Replacement retainer ring for ISO-UNIT, ISO-UNITSS and ISO-UNITHPGT	**ISO-RR**
ISO-Union wrench set.	**ISO-WRENCH**
Orifice and retaining ring set. Used for all viewing heads	**M-702-6**
High temperature gasket for 1" locking coupler	**PT-GA1**
Quartz lens for 1" locking coupler	**PT-QL1**
Ultra violet light source for UV sensor testing.	**UVSOURCE**

M-702-6

UV-SOURCE

Industrial Flame Monitoring

Industrial flame monitoring - S700/S800 Viewing Heads

S700

The S700 and S800 viewing head is capable to detect the flame of almost every available fuel type or fuel mixture and have a high flame discrimination capabilty because of adjustable background radiation sensitivity.
Industrial process burners, multiple burner systems, incinerators, ovens, kilns, etc.

Approvals	• FM, CSA approved
	• SIL3 capable
Protection class	• NEMA 4x, IP64
Ambient temperature	0 ... 50 °C
Maximum humidity	85 %rh
Note	• All S70x/80x/700/800 series Flame Safety Products are approved by FM Global for use in SIL 3 environment.
	• All S706/S706 UV viewing heads are immune to X-Rays and Gamma radiation, making them ideal for a broad variety of industrial applications.
	• Other than any other flame scanner, the S706/S806 UV viewing heads perform background pulse counting for tube health and therefore don't need a mechanical shutter system for self-checking.
	• Because Honeywell cable accessories are of USA origin, all cable lengths are measured in Ft (Feet, 1 Ft = 304.8mm)
Operation	Cont.
Additional description	• S702 and S802 models: Germanium photo diode with spectral response 1110 to 1660 nm
	• S706 and S806 models: UVton Tube with response 185 to 260 nm
	• Fali-safe: no mechanical shutter needed because of the use of electronic monitoring and digital signal processing.
	• Technology: Flicker (S702/S802 - IR) and Pulse Count (S706/S806 - UV)
	• Works in combination with 700DCSP, 700ACSP and 800SP and on the 3rd channel of the P531 and P532 signal processors.

S800

S700PF

700XXSP

Flame scanner heads , with cable connector. Incl. 4.5 m cable and connector.

Product description	Flame detector	Type
Single IR viewing head.	IR	**S702**
Single UV viewing head.	UV	**S706**
Single IR viewing head, in stainless steel enclosure.	IR	**S802**
Single UV viewing head, in stainless steel enclosure	UV	**S806**

Flame scanner heads with 15 Ft (3.5 m) factory mounted over-moulded cable

Product description	Flame detector	Type
Single IR viewing head.	IR	**S702PF**
Single UV viewing head.	UV	**S706PF**

P531

Signal Processors for use with S5xx and S55x Viewing Heads. Refer to specific chapter for details.

Single channel signal procesing unit for S700/S800 series viewing heads, 85...264 Vac	**700ACSP**
Single channel signal procesing unit for S700/S800 series viewing heads, 24 Vdc	**700DCSP**
3 channel signal procesing unit without display. S700/S800 viewing head connects on 3rd channel only. Voltage: 85...264 Vac	**P531AC**
3 channel signal procesing unit without display. S700/S800 viewing head connects on 3rd channel only. Voltage: 24 Vdc	**P531DC**
3 channel signal procesing unit including display. S700/S800 viewing head connects on 3rd channel only. Voltage: 85...264 Vac	**P532AC**
3 channel signal procesing unit including display. S700/S800 viewing head connects on 3rd channel only. Voltage: 24 Vdc	**P532DC**

P532

Industrial Flame Monitoring

700-1

Parts and accessories: Mounting

Swivel mount for S700/S800. 1" x 1/2" NPT	**700-1**
Swivel mount for S700/S800. Flanged x 1/2" NPT	**700-2**
Swivel mount for S700/S800. 1/2" x 1/2" NPT	**700-3**
S700 cooling jacket for Vortex cooler	**700ACC**
Liquid tight cable restaint for S700/S800	**700CRLT**
Delrin adapter replacement for S700. 1/2" NPT model	**700DA**
Liquid tight cable adapter for S700/S800. 3/8" NPT model	**700LTA**
Right angle adapter for S700/S800. 1/2" x 1/2" M/F	**700RAA**
Ultem heat insulating nipple for S700. 1/2" (view) - 1/4" air purge.	**700UA**
Delrin adapter replacement for S800. 1/2" model.	**800DA**
Ultem heat insulating nipple for S800. 1/2" (view) - 1/4" air purge.	**800UA**
1/2 in. NPT Ultem heat insulating nipple for S700/S800 series viewing heads	**R-518-13**
1/2" NPT locking coupler with high temperature gasket	**R-518-CL13-HTG**
1/2" NPT Ultem locking coupler adapter only	**R-518-PT13**
1/2" NPT Ultem locking coupler adapter with quartz lens	**R-518-PT13L**

700-2

700-3

700CRLT

700DA

700LTA

700RAA

700UA

800DA

800UA

ASY782

ASY784

R-518-13

R-518-CL13-HTG

R-518-PT13

C330S

Parts and accessories: Electrical

Connector cable with LED and 15-ft (4.5 m) cable with braided shield for S700/S800.	**ASY782**
Viewing head connector kit for S700/S800 without cable.	**ASY784**
Connector cable with LED and 50-ft (15 m)C330S cable with braided shield for S700/S800.	**ASY785**
Connector cable with LED and 200-ft (60 m)cable with braided shield for S700/S800.	**ASY785-200**
4 Conductor cable with braided shield, excl. connector. Orderable in 1 Ft (30.48 cm) incrementals, minimum length is 15 Ft.	**C330S**

UV-SOURCE

Parts and accessories: Tools

Ultra violet light source	**UVSOURCE**

Industrial Flame Monitoring

1

Signal processors, single channel

Single channel input for S700/S800 viewing heads. And one model for flame detection with a flame rod.

Temperature range	0 ... 50 °C
Hardware outputs	• Flame relay: 2 x SPDT • Self-check relay: 1 x SPDT • 0..20 mA or 4..20 mA (selectable)

600U

Model for flame detection by flame rod.

Product description	Supply voltage	Type
Flame monitoring system for use with a flame rod.	85..264 Vac	**600U**

Standard models, 700xxSP series

Product description	Supply voltage	Type
Adjustable sensitivity signal processor for S700/S800	85..264 Vac	**700ACSP**
Adjustable sensitivity signal processor for S700/S800	24 Vdc	**700DCSP**

Viewing heads S700/S800 with cable & connector

Single IR viewing head.	**S702**
Single UV viewing head.	**S706**
Single IR viewing head, stainless steel.	**S802**
Single UV viewing head, stainless steel.	**S806**

Viewing heads S700/S800 with moulded cable

Single IR viewing head ("pig-tail").	**S702PF**
Single UV viewing head ("pig-tail").	**S706PF**

700XXSP

S700　　**S800**　　**S700PF**

Rectifying flame rod for 600U

Flame rod assembly. Electrode length: 305 mm (12")	**C7008A1018/U**
Flame rod assembly. Electrode length: 610 mm (24")	**C7008A1034/U**

C7008

Industrial Flame Monitoring

Industrial flame monitoring - Viewing Heads

The S55xBE viewing head delivers flame discrimination in the toughest environments and is capable to detect the flame of almost every available fuel type or fuel mixture. With automatic setup, three channels and the ability to monitor UV and IR flame components simultaneously or separately, the P532 signal processor offers improved burner up time and reliability.
Industrial process burners, multiple burner systems, incinerators, ovens, kilns, etc.

S550BE

Approvals	• GOST, FM, UL, CSA & NRTL/C Approved
	• IECEx certification for specific models (global)
	• ATEX certification for S550BE-EX (3rd party product)
Protection class	• NEMA 4x, IP64
	• S55xBE: Zone 2 Class 1 Div 2 Group A, B, C and D
	• S55xBE: IECEX Cat 3 (Zone 2) II 3G IIC T5
	• S550BE-EX: ATEX {EX} II 2 G Ex d IIC T6 for use in Zone 1 and 2 (3rd party product)
Ambient temperature	-40 ... 70 °C
Maximum humidity	85 %rh
Note	• All S55xBE / P5xx series Flame Safety Products are approved by FM Global for use in SIL 3 environment.
	• All S55xBE viewing heads are immune to X-Rays and Gamma radiation, making them ideal for a broad variety of industrial applications.
	• Other than any other flame scanner, the S55xBE viewing heads perform background pulse counting for tube health and therefore don't need a mechanical shutter system for self-checking.
	• Because Honeywell cable accessories are of USA origin, all cable lengths are measured in Ft (Feet, 1 Ft = 304.8mm)
Operation	Cont.
Additional description	• Sensor: UV Tube, Solid State IR sensor or both UV+IR
	• Response UV: 210 nm Peak / IR: 1400 nm Peak
	• Technology: Pulse Count (UV) and Flicker (IR)
	• Self-check: Electronic (no mechanical moving parts)
	• Works in combination with P531, P532 and P522 signal processors (P522 with red button labels only).

SIL3 Capable

Flame scanner heads S55xBE

Product description	Flame detector	Comment	**Type**
Dual UV/IR viewing head, with Turck connector (included)	UVTron+IR	Dual LED display for flame signal	**S550BE**
Single IR viewing head, with Turck connector (included)	IR	Single LED display for flame signal	**S552BE**
Single UV viewing head, with Turck connector (included)	UVTron	Single LED display for flame signal	**S556BE**

Flame scanner heads S55xBE-EX (Explosion proof). 3rd party product.

Product description	Flame detector	Comment	**Type**
Dual UV/IR viewing head with exlosion proof enclosure. Available via distributor only	UVTron+IR	ATEX (Ex d IIC T6) - Zone 1 & 2	**S550BE-EX**

S550BE-EX

Industrial Flame Monitoring

Signal Processors for use with S5xx and S55x Viewing Heads.
Refer to specific chapter for details.

2 channel signal proceing unit, 85...264Vac	**P522AC**
2 channel signal proceing unit, 24Vdc	**P522DC**
3 channel signal proceing unit without display, 85...264Vac	**P531AC**
3 channel signal proceing unit without display, 24Vdc	**P531DC**
3 channel signal proceing unit including display, 85...264Vac	**P532AC**
3 channel signal proceing unit including display, 24Vdc	**P532DC**

P522   **P531**   **P532**

ACC5XX

ISO-UNIT

ISO-UNITSS

Parts and accessories: Mounting

Air cooling canister for S550xBE viewing heads. 1/4 inch air inlet port. Use with vortex coolers. Not for older S5xx and S550BE-EX models.	**ACC55XBE**
Replacement O-ring for ISO-UNIT, ISO-UNITSS and ISO-UNITHPGT	**ISO-OR**
Replacement quartz window for ISO-Unit and ISO-UnitSS	**ISO-QW**
Replacement retainer ring for ISO-UNIT, ISO-UNITSS and ISO-UNITHPGT	**ISO-RR**
1" NPTF sealing union with quartz window and 1/2" NPTF purge port	**ISO-UNIT**
1" NPTF stainless steel sealing union with quartz window and 1/2" NPTF purge port	**ISO-UNITSS**
1" NPTF sealing union with quartz window and 1/2" NPTF purge port. High pressure version with 1/2" thick high pressure quartz window	**ISO-UNITHPGT**
Swivel mount, 2" pipe slip-on to 1" NPT connection	**M-701-1**
Swivel mount for S55xBE series viewing heads. 2" NPT female to 1" NPT female	**M-701-2**
Flanged swivel mount, 2" flanged to 1" NPTF	**M-701-2-FLG**
Swivel mount, 2" NPT female to 1" NPT female. Stainless steel construction	**M-701-2-SS**
Flanged swivel mount, 3-bolt, 4.5" flanged to 1" NPTF	**M-701-3**
Swivel mount, 3" NPTF to 1" NPTF connection	**M-701-3P**
Swivel mount, 2-bolt to 1" NPTF connection	**M-701-4**
Swivel mount bushing 1" x 1/2" NPT, 1/2" connection	**M-701-5**
Orifice and retaining ring set. Used for all viewing heads	**M-702-6**
High temperature gasket for 1" locking coupler	**PT-GA1**
Quartz lens for 1" locking coupler	**PT-QL1**
1" NPT Ultem heat and electrical insulating nipple for S55xB/BE series viewing heads swivel mount.	**R-518-12**
1" NPT locking coupler with high temperature gasket	**R-518-CL12-HTG**
1" NPT aluminum locking quick disconnect/cam and groove coupler adapter with 1/2" NPT purge port. Used with U2 processor/viewing heads	**R-518-CL12-PG**
1" NPT Ultem insulating locking coupler adapter. Used with U2 processor/viewing head	**R-518-PT12**
1" NPT Ultem locking coupler adapter with quartz lens	**R-518-PT12L**

Industrial Flame Monitoring

M-701-2

M-701-2-FLG

M-701-2-SS

M-701-3

M-701-3P

M-701-4

M-702-6

R-518-12

R-518-CL13-HTG

R-518-CL12-PG

R-518-PT12

R-518-PT12L

Parts and accessories: Electrical

ASYS55XBE

C330S

LTA

C330S cable with connector for S55xBE series viewing heads, length 50 Ft / 15 m	**ASYS55XBE**
C330S cable with connector for S55xBE series viewing heads, length 200 Ft / 60 m	**ASYS55XBE-200**
4 Conductor cable with braided shield, excl. connector. Orderable in 1 Ft (30.48 cm) incrementals, minimum length is 15 Ft.	**C330S**
Liquid tight viewing head cable adapter for old type S5XX series viewing heads only. 1/2" NPTF conduit connection	**LTA5XX**
Liquid tight viewing head cable adapter for S55xBE series viewing heads. 1/2" NPTF conduit connection	**LTA55XBE**
Quick disconnect connector only for all S55xBE viewing head models	**R-518-09**

Parts and accessories: Tools

Configuration colour touch screen display, with preinstalled Windows CE based configuration software and Modbus connection to connect 700xCSP, P222, P5xx and U2-S signal processors	**FLAMETOOLS-HMI/U**
C ISO-Union wrench set	**ISO-WRENCH**
Ultra violet light source	**UVSOURCE**

FLAMETOOLS-HMI

UVSOURCE

Industrial Flame Monitoring

1

Signal processors, independent dual channel, P531, P532

Independent dual channel input for viewing heads: S55xBx (channel 1 and 2) or S700/S800 (channel 3). Battery backup 24V DC

Temperature range	-40 ... 60 °C
R.H. range	50 ... 80 %rh
Bus system description	• Modbus • RS422 (differential)
Hardware outputs	• Flame relay: 3 x DPDT • Self-check relay: 1 x SPDT • Alarm relay: 1 x SPST • 0..20 mA or 4..20 mA (selectable)

P531

With LED-indication

Power supply	Type
24 V DC	**P531DC**
85..264 24 V AC	**P531AC**

With user interface integrated

Power supply	Type
24 V DC	**P532DC**
85..264 24 V AC	**P532AC**

Programming and configuration tools

Configuration colour touch screen display, with preinstalled Windows CE based configuration software and Modbus connection to connect 700xCSP, P222, P5xx and U2-S signal processors	**FLAMETOOLS-HMI/U**
C	

FLAMETOOLS-HMI

P532

Viewing heads S55xBx (Channels 1 & 2)

Dual UV/IR viewing head, with Turck connector (included)	**S550BE**
Single IR viewing head, with Turck connector (included)	**S552BE**
Single UV viewing head, with Turck connector (included)	**S556BE**

Viewing head S550BE-EX (Channels 1 & 2)

Dual UV/IR viewing head, in explosion proof enclosure (ATEX). Note: 3rd party product.	**S550BE-EX**

S550BE

Viewing heads S700 and S800 (Channel 3 only)

IR viewing head (aluminium enclosure)	**S702**
UV viewing head (aluminium enclosure)	**S706**
IR viewing head (stainless steel enclosure)	**S802**
UV viewing head (stainless steel enclosure)	**S806**

S550BE-EX

S700

S800

Industrial Flame Monitoring

Signal processors, selectable dual channel, P522

Selectable dual channel input for viewing heads: S5xx or S55xBx.
Battery backup 24V DC

Temperature range	0 ... 50 °C
R.H. range	50 ... 80 %rh
Bus system description	RS422 (differential)
Hardware outputs	• Flame relay: 2 x SPDT • Self-check relay: 1 x SPST • Alarm relay: 1 x SPST • 0..20 mA or 4..20 mA (selectable)

P522

With LED-indication

Power supply	Type
24 V DC	**P522DC**
85..264 24 V AC	**P522AC**

Viewing heads S55xBx

Dual UV/IR viewing head, with Turck connector (included)	**S550BE**
Single IR viewing head, with Turck connector (included)	**S552BE**
Single UV viewing head, with Turck connector (included)	**S556BE**
Dual UV/IR viewing head in ATEX Ex d IIC T6 housing	**S550BE-EX**

Configuration / programming tools

Configuration colour touch screen display, with preinstalled Windows CE based configuration software and Modbus connection to connect 700xCSP, P222, P5xx and U2-S signal processors	**FLAMETOOLS-HMI/U**
C	

S550BE

S550BE-EX

FLAMETOOLS-HMI

Industrial Flame Monitoring

Fibre optics extensions for viewing heads

FASA

The Honeywell FASA-GLASS and FASA-QUARTZ fibre optic extensions are complete engineered assembled and tested accessories for viewing heads and make it possible to monitor flame in a hostile environment, in the presence of:

- excessive vibration
- intense heat
- corrosive chemicals
- explosive gases or dust
- complex burner configuration
- A fibre optic bundle is used to transmit flame radiation to the remotely located flame detector/viewing head. Flexible stainless steel tubes enclose the fibre optic bundle with forced air injection for cooling.
- A lens is used to focus the flame to one end of the fibre optic bundle, with the other end coupled directly to the viewing head.
- Various lengths are available in 1 Ft (30.4 cm) incrementals to a maximum of a little less than 8 m (25 Ft)

For IR only detection systems the **glass** fibre extensions are used
For UV only and dual UV/IR detection systems the **quartz** fibre extensions are used

Temperature range	-40 ... 400 °C
Note	FASA fibre optics assemblies are configured products. That means that the full length and used viewing head needs to be specified when ordering. The configuration cannot be changed once the FASA fibre optics assembly has been produced in the factory. **Contact Honeywell before ordering**.

Infrared: complete glass fibre optics assembly.

Model	Product description	Type
IR	Glass fibre optics complete assembly for IR with guide pipes and flexible connection.	**FASA-GLASS**

Infrared: inner assembly glass fibre optics. Excluding outer tubing.

Model	Product description	Type
IR	Glass fibre optics inner assembly for IR with flexible connection.	**FASA-INT-GLASS**

Ultraviolet: complete quartz fibre optics assembly.

Model	Product description	Type
UV/IR	Quartz fibre optics complete assembly for UV and/or IR with guide pipes and flexible connection.	**FASA-QUARTZ**

Ultraviolet: inner assembly quartz fibre optics. Excluding outer tubing.

Model	Product description	Type
UV/IR	Quartz fibre optics complete assembly for UV and/or IR with flexible connection.	**FASA-INT-QUARTZ**

Industrial Flame Monitoring

Heavy duty gas pilot ignitors

GHE

The GHE igniters are non-fouling, inextinguishable, high-energy electric igniters suitable for most liquid and gaseous fuels. They are available for both 47 mm (1-7/8") and 73 mm (2-7/8") diameter support tubes, in lengths to suit the application.

The unique high energy circuit makes use of a controlled capacitor discharge to produce a high energy spark at a pulse rate of approximately 3 to 5 times per second that ignites liquid or gaseous fuels more reliably and consistently.

The GHE igniter assembly is comprised of two major parts; a high energy source of ignition and an internal mix air-gas delivery system.

The GHE Igniters are supplied with:

- 0.9 m (36") stainless steel flexible gas hose
- 0.9 m (36") stainless steel flexible air hose
- burner mounting tube
- high energy probe
- igniter tip 305 mm (12") long x 12.7 mm (1/2") outer diameter
- Various lengths are available in 1 Ft (30.4 cm) incremental to a maximum of 25 Ft (ca. 8 m)

Note   GHE pilot burner assemblies are configured products. That means that the full length needs to be specified when ordering. The configuration cannot be changed once the GHE pilot burner assembly has been produced in the factory. **Contact Honeywell before ordering**.

Product description	Type
Gas pilot ignitor assembly (300 - 900 kW)	**GHE1-3**
Gas pilot ignitor assembly (600 - 1500 kW)	**GHE2-5**

Accessories

12 Joule Power Pack, 120/230Vac, 50/60Hz	**POWERPACK-12-CS**
NEMA 4X enclosure for igniter powerpack.	**NEMA-4X-ADD**

Replacement parts

Replacement igniter probe junction box with canon plug receptacle for GHE igniters.	**IGN-CPC-LB**
Replacement internal GHE igniter cable with contact, specify length before ordering.	**HV-HT**

Industrial Flame Monitoring

Flare monitoring system

WATCHDOGIIIBE

P222

S256BE

FLAMETOOLS-HMI

Watchdog III is a flare stack monitoring system, guarding against the venting of hazardous gases in the atmosphere.
Can be used for continuous onsite flare monitoring
 • The fail-safe and well proven UVtron technology is used for flame detection.
Totally immune to sunlight:
 • Can be installed anywhere in a 360 degree radius around the flare stack. Operates in the 210 nm range of the spectrum (UV)
The viewing head can be mounted outside a explosion hazardous location:
 • The WATCHDOG viewing head can detect a flare more than 300 m away.
The signal processing unit can be mounted inside a nearby wiring cabinet.

Temperature range	-40 ... 80 °C
Bus system description	Serial communication: RS422/485 (differential • 4800, 9600, 19200 or 38400 baud (selectable)
Hardware outputs	• Early indication: 2 x SPDT • Delayed indication: 1 x SPDT • 0..20 mA or 4..20 mA (selectable)
Note	• Because Honeywell cable accessories are of USA origin, all cable lengths are measured in Ft (Feet, 1 Ft = 304.8mm)

Complete set

Product description	Supply voltage	Type
Complete set, consists of P222, S256BE and ASYS5XXBE	85..264 Vac	**WATCHDOGIIIBE**

Individual components (excl. connector and cable)

Product description	Supply voltage	Type
Watchdog Signal Processor only with mounting base and terminal. Excl. connector.	85..264 Vac	**P222**
Watchdog III UV Digital flare stack pilot monitor viewing head. Powered by P222.	24 Vdc	**S256BE**

Configuration tools

Configuration colour touch screen display, with preinstalled Windows CE based configuration software and Modbus connection to connect 700xCSP, P222, P5xx and U2-S signal processors	**FLAMETOOLS-HMI/U**
Configuration software on USB key drive, incl. RS422/85 to USB converter module	**FLAMETOOLS-PC**

Cables

4 Conductor cable with braided shield, excl. connector. Orderable in 1 Ft (30.48 cm) incrementals, minimum length is 15 Ft.	**C330S**
C330S cable with connector for S55xBE series and S256BE viewing heads, length 50 Ft / 15 m.	**ASYS55XBE**

Accessories

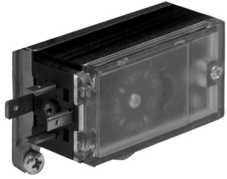|	
Turck plug for S256BE viewing head, used with C330S cable.	**R-518-10**

C330S

ASYS55XBE

Gas and Air Pressure Switches

Pressure switch for gas application C60VR

Pressure switch for gas application to be mounted on VQ400 dual valves and VRB00/VR400/V4730 combination gas valves.
- The C60VR40xxx has an adjustable setpoint and performs minimum gas pressure supervision in a safe start interlock circuit.
- The C60VR40xxx is designed to be fitted directly on the valve body of the applicable gas valve body, using two mounting screws and an O-ring.

C60VR40

Kind of pressure	overpressure, relative
Pressure connection	Flanged, directly on valve body.
Electrical connection	DIN plug
Protection class	IP00 (IP54 with DIN plug mounted)
Housing material	• Body: aluminium • Cover: reinforced PBT glassfibre
Ambient temperature	-10 ... 70 °C
End switch function/capacity	• Switch action: 1x SPDT • Resistive: 5A • Inductive (COS PHI = 0.6): 0.5A
Approvals	• C60VR40 models: CE (EN 1854) • C60VRT40 models: UL
Mounting position	horizontal
Comment	Max. pressure: 2 bar < 15 min
Additional description	DIN plug not included.

Models for Europe

Pressure adjustment range mbar	Differential pressure mbar	Max. pressure mbar	**Type**
5 ... 40	1.5 ... 2.5	100	**C60VR40040**
30 ... 110	4 ... 12	600	**C60VR40110**

Models for USA

Pressure adjustment range mbar	Differential pressure mbar	Max. pressure mbar	**Type**
5 ... 40	1.5 ... 2.5	600	**C60VRT40040**

Parts

DIN Plug	**CO020012**

CO020012

Gas and Air Pressure Switches

Pressuretrol Controllers

L404F

Provide operating control with automatic limit protection for pressure systems up to 20 Bar (300 psi).

Kind of pressure	overpressure, relative
Electrical connection	conduit
Housing material	Painted carbon steel and transparent plastic front cover
Media temp.	-37 ... 66 °C
Ambient temperature	-37 ... 66 °C
Switch function/capacity	SPDT Microswitch 250Vac; capacity: 1 A (inductive); 5 A resistive
Mounting position	vertical
Additional description	• Use with steam, air, noncombustible gases, or fluids non-corrosive to pressure sensing element
	• Models have snap-acting switching to open or close a circuit on pressure rise
	• Adjustable differentials
	• Mount using 1/4" NPT internal pipe thread or surface mount through base of case
	• Stainless steel diaphragm

European model, incl. grounding screw

Pressure adjustment range kPa	Differential pressure adjustment range kPa	Max. pressure kPa	Pressure connection	Protection class	Type
14 ... 103	14 ... 41	345	1/4" BSP	IP40	**L404F1219/U**
69 ... 1034	60 ... 152	1551	1/4" BSP	IP40	**L404F1227/U**
138 ... 2068	138 ... 345	2413	1/4" BSP	IP40	**L404F1235/U**
35 ... 345	41 ... 97	586	1/4" BSP	IP40	**L404F1243/U**

American model

Pressure adjustment range kPa	Differential pressure adjustment range kPa	Max. pressure kPa	Pressure connection	Protection class	Type
14 ... 103	14 ... 41	345	1/4" NPT	NEMA1	**L404F1060/U**
35 ... 345	41 ... 97	586	1/4" NPT	NEMA1	**L404F1078/U**
138 ... 2068	138 ... 345	2413	1/4" NPT	NEMA1	**L404F1094/U**
69 ... 1034	60 ... 152	1551	1/4" NPT	NEMA1	**L404F1102/U**

American model, Limit Controller. With manual reset.
Has 2X SPST switches which open simultaneously on pressure rise.

Pressure adjustment range kPa	Differential pressure adjustment range kPa	Max. pressure kPa	Pressure connection	Protection class	Type
69 ... 1034	–	1551	1/4" NPT	NEMA1	**L4079A1050/U**

Steam Trap Black Iron Siphon Loop for L404 or L91	**14026/U**

Gas and Air Pressure Switches

Proportional Pressuretrol Controllers

Modulating pressure operating control for regulation of liquid or air and other non-corrosive gases.

L91B1043

Kind of pressure	overpressure, relative
Pressure connection	1/4" NPT external thread
Electrical connection	conduit
Protection class	IP44
Housing material	Painted carbon steel and transparent plastic front cover
Media temp.	0 ... 66 ^{o}C
Ambient temperature	0 ... 66 ^{o}C
Switch function/capacity	Modulating: 140 Ohm potentimeter
Mounting position	vertical
Additional description	Brass bellows

- Use with steam, air, noncombustible gases, or other fluids noncorrosive to the brass or phos-bronze (20 Bar / 300 psi models) bellows
- Do NOT use with combustible mediums or any medium chemically harmful to phos-bronze bellows (0.6-20 Bar / 10-300 psi models) or brass bellows (all other pressure range models)
- Do NOT use with combustible mediums or any medium chemically harmful to phos-bronze bellows (0.6-20 Bar / 10-300 psi models) or brass bellows (all other pressure range models)

Single potentiometer 140 Ohms. With optional surface mount through back of case.

Pressure adjustment range	Differential pressure adjustment range	Max. pressure	**Type**
kPa	kPa	kPa	
0 ... 103	10 ... 83	172	**L91B1035/U**
34 ... 1034	35 ... 160	1551	**L91B1050/U**
69 ... 2068	193 ... 758	2241	**L91B1068/U**
0 ... 2068	85 ... 330	2241	**L91B1241/U**

Single potentiometer 140 Ohms. With G1/4" mounting.

Pressure adjustment range	Differential pressure adjustment range	Max. pressure	**Type**
kPa	kPa	kPa	
0 ... 1034	35 ... 160	1551	**L91B1100/U**
0 ... 2068	193 ... 758	2241	**L91B1118/U**

Steam Trap Black Iron Siphon Loop for L404 or L91	**14026/U**

Servo Motors

Modutrol IV servo motors
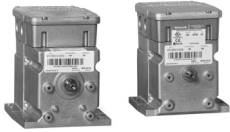
MODUTROL-4

Modutrol IV Motors are spring return and non-spring return motors used to control dampers and valves.

- M62xx models are three-wire floating control motors for use with controllers that provide a switched spdt or floating output and have an internal electrically isolated feedback potentiometer that provides indication of the motor shaft position.
- M72xx models accept a current or voltage signal from an electronic controller to position the motor shaft to any point between open and closed.
- M91xx and M94xx models use a 135Ohm modulating proportional signal to position the motor shaft to any point between open and closed.

Modutrol IV motors are used for damper and valve control in industrial burner applications and air handling installations.

Approvals	• CE, UL, FM, CSA, EAC
Protection class	IP44
	• Weather protection kit is available as accessory to upgrade to IP54
Ambient temperature	-40 ... 66 °C
Maximum humidity	85 %rh
Features	• Screw terminals are standard.
	• Adapter bracket for matching shaft height of older motors (ModIII) is available.
	• Most models have field adjustable stroke (90 to 160).
	• Die-cast aluminium housing.
	• Two adjustable internal SPDT auxiliary switches are factory mounted.
	• Dual shaft ends for normally open or normally closed valve or damper application. Both shaft ends offer the same torque rating.
Input voltage	• Default: 24 Vac
	• Via optional built-in transformer: 24/120/230 Vac
	• Line frequency: 50/60 Hz
Shaft mounting	9.5mm (3/8") square for all models on both ends
End switches	2
Function	Normally Closed
Additional description	• Modutrol motor timings are independant of line frequency.
	• Torque ratings for dual-ended shaft motors are the sum of the shaft torques (power-end torque plus auxiliary-end torque).
	• Breakaway torque is the maximum torque available to overcome occasional large loads such as a seized damper or valve. The breakaway torque is 1.5x the normal rated torque.
	• Other models than listed in this catalogue are available outside Europe. Most models can be replaced by the available European models.

MXXX4

MXXX5

Servo Motors

Modutrol IV family

Supply voltage	Power consumption	Input signal	Angle of rotation	Runtime	Torque	Position feedback	Model	Type
	W		°	s	Nm			
24/120/230 Vac	See table	See table	See table	See table	See table	–	Series 2/3	**_M62xx-M72xx-M9xx**

3-point control non-spring return (M62x4) (Angle of rotation: Adj. 90° .. 160°; Note: Linear feedback)

Supply voltage	Power consumption	Input signal	Comment	Runtime	Torque	Position feedback	Model	Type
	W			s	Nm			
24 Vac	14	SPDT	Factory set at 90	Var. 15 .. 27	8.5	10kohm	Series 2	**M6274F1009-F/U**
24 Vac	13	SPDT	Factory set at 90	Var. 30 .. 53	17	10kohm	Series 2	**M6284F1078-F/U**
24 Vac	11	SPDT	Factory set at 160	Var. 120..214	34	10kohm	Series 2	**M6294F1009-F/U**
24 Vac	14	SPDT	Factory set at 90	Var. 60 .. 107	34	10kohm	Series 2	**M6294F1017-F/U**

3-point control spring return (M62x5) (Angle of rotation: Adj. 90° .. 160°; Note: Linear feedback)

Supply voltage	Power consumption	Input signal	Comment	Runtime	Torque	Position feedback	Model	Type
	W			s	Nm			
24 Vac	23	SPDT	Factory set at 160	Var. 30 .. 53	6.8	10kohm	Series 2	**M6285F1001-F/U**

Analogue input control non-spring return (M72x4) (Angle of rotation: Adj. 90° .. 160°)

Supply voltage	Power consumption	Input signal	Comment	Runtime	Torque	Position feedback	Model	Type
	W			s	Nm			
24 Vac	14	4-20 mA	Factory set at 90	Var. 15 .. 27	8.5	–	Series 2	**M7274Q1009/U**
24/120/230 Vac	13	4-20 mA		Fixed 30	17	–	Series 2	**M7284Q1082/U**
24 Vac	13	2-10 Vdc	Factory set at 160	Var. 30 .. 53	17	–	Series 2	**M7284Q1098/U**
24 Vac	13	4-20 mA	Factory set at 90	Var. 30 .. 53	17	–	Series 2	**M7284Q1106/U**
24 Vac	14	4-20 mA	Factory set at 90	Var. 60 .. 107	34	–	Series 2	**M7294Q1015/U**

Analogue input control spring return (M72x5) (Angle of rotation: Adj. 90° .. 160°)

Supply voltage	Power consumption	Input signal	Comment	Runtime	Torque	Position feedback	Model	Type
	W			s	Nm			
24 Vac	23	4-20 mA	Factory set at 90	Var. 30 .. 53	6.8	–	Series 2	**M7285Q1024/U**
24 Vac	23	2-10 Vdc	Factory set at 160	Var. 30 .. 53	6.8	–	Series 2	**M7285Q1032/U**

Potentiometer control non-spring return (M9xx4) (Angle of rotation: Adj. 90° .. 160°)

Supply voltage	Power consumption	Input signal	Comment	Runtime	Torque	Position feedback	Model	Type
	W			s	Nm			
24 Vac	12	0-150 Ohm	Factory set at 160	Var. 30 .. 53	8.5	–	Series 3	**M9174F1001/U**
24 Vac	14	0-150 Ohm	Factory set at 90	Var. 30 .. 53	17	–	Series 3	**M9184F1034/U**
24 Vac	14	0-150Ohm	Factory set at 90	Var. 15 .. 27	8.5	–	Series 3	**M9484F1023/U**
24 Vac	14	0-150 Ohm	Factory set at 160	Var. 30 .. 53	17	–	Series 3	**M9484F1057/U**
24 Vac	15	0-150 Ohm	Factory set at 90	Var. 60 .. 107	34	–	Series 3	**M9494F1003/U**

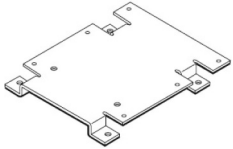**Potentiometer control spring return (M9xx5) (Angle of rotation: Adj. 90° .. 160°)**

Supply voltage	Power consumption	Input signal	Comment	Runtime	Torque	Position feedback	Model	Type
	W			s	Nm			
24 Vac	24	0-150 Ohm	Factory set at 160	Var. 30 .. 53	6.8	–	Series 3	**M9185F1002/U**

Servo Motors

Accessories

|	
Replacement dual internal auxiliary switch kit	**220736B/U**
Adapter bracket to adjust shaft height when replacing old ModII or ModIII motors.	**220738A/U**
Adjustable cranc arm kit	**221455A/U**
Weatherproofing kit. Protects motor from driving rain when mounted in any position	**4074ERU/U**
Internal multi tap transformer for use on 120 or 230Vac voltage or to provide galvanic insulation. 24/120/230V to 24V.	**50017460-001/U**
Cranc arm assembly short	**7617ADW/U**
Cranc arm assembly long	**7616BR/U**
Single auxiliary 135Ohm potentiometer. Can be used as feedback potentiometer or to control slave M9xxx motors.	**Q181A1007/U**
Damper linkage. Includes pushrod, 2 damper arms and 2 ball joints	**Q298B1065/U**
Damper linkage. Includes mounting bracket, damper arm, motor crankarm, and 2 ball joints	**Q605A1070/U**
Adapter to convert M9xxx motors to analogue input version. Note: control accuracy <5%. For improved control accuracy, use M7xxx motor.	**Q7230A1005/U**

A220736B

A220738A

50017460-001
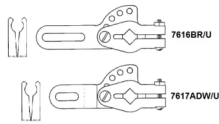
7616BR-7617ADW
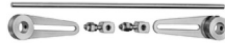
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Q605A1070

Unit conversion table (metric)

Length

		inch (m)	foot (ft)	mile	meter (m)
1 inch	=	1	0,0833	-	0,0254
1 foot	=	12	1	-	0,3048
1 mile	=	-	-	1	1609,3
1 meter	=	39,37	3,2808	$621,4 \times 10^{-6}$	1

Volume

		cubic foot (cu.ft.)	Eng. gallon (UK gal)	Am. gallon (US gal)	dm³
1 cubic foot	=	1	-	-	28,32
1 Eng. gal	=	-	1	-	4,546
1 Am. gal	=	-	-	1	3,785
1 dm³	=	0,03531	0,21998	0,26420	1

Weight

		ounce (oz)	pound (lb)	gram (g)	kilogram (kg)
1 ounce	=	1	0,0625	28,35	0,02835
1 pound	=	16	1	453,6	0,4536
1 gram	=	0,0353	$2,2046 \times 10^{-3}$	1	0,001
1 kilogram	=	35,3	2,2046	1000	1

Pressure

		bar [1]	standard atmosphere atm [2]	kgf/cm² [3]	lbf/in² [4] / PSi [10]	kPa
1 bar [1]	=	1	0,987	1,020	14,50	100
1 atm [2]	=	1,013	1	1,033	14,70	101,3
1 kgf/cm² [3]	=	0,981	0,968	1	14,22	98,1
1 lbf/in² [4] / PSi [10]	=	0,0689	0,680	0,0703	1	6,89
1 kilopascal (kPa)	=	0,01	0,00987	0,0102	0,145	1

Pressure (continued)

		millibar	mm water column (mm H₂O)	mm mercury (mm Hg)	inch water column (in H₂O)	kPa	Pa
1 mbar	=	1	10,20	0,750	0,4015	0,1	100
1 mm H₂O	=	0,0981	1	0,0736	0,03937	0,00981	9,81
1 mm Hg	=	1,333	13,60	1	0,535	0,1333	133,3
1 in H₂O	=	2,491	25,40	1,868	1	0,2491	249,1
1 kilopascal (kPa)	=	10	102	7,5	4,015	1	1000
1 Pa	=	0,01	0,1	0,0075	0,004	0,001	1

Flow

		ft³/h	dm³/s	m³/min	m³/h	cfm
1 ft³/h	=	1	0,00787	0,000472	0,02832	0,0167
1 dm³/s	=	127,1	1	0,06	3,6	2,12
1 m³/min	=	2119	16,67	1	60	35,71
1 m³/h	=	35,31	0,2778	0,01667	1	0,589
1 cfm	=	60	0,47	0,028	1,699	1

Force

		lbf	kgf	N
1 pound-force (lbf)	=	1	0,454	4,448
1 kilogram force (kgf)	=	2,205	1	9,81
1 newton (N)	=	0,225	0,102	1

Torque

		Nm	mkgf	lbf.in
1 Nm	=	1	0,102	8,858
1 mkgf	=	9,81	1	86,72
1 lbf.in	=	0,113	0,012	1

Power

		Mega calorie per hour (Mcal/h)	horse-power (hp)	British thermal unit p/h (Btu/h)	kilowatt (kW = kJ/s)
1 Mcal/h	=	1	1,583	3968	1,163
1 hp	=	0,632	1	2510	0,735
1 Btu/h	=	252×10^{-6}	$398,5 \times 10^{-6}$	1	293×10^{-6}
1 kW	=	0,860	1,360	3412	1

Energy

		Mega-calorie (Mcal) [5]	therm [6]	kilowatt-uur (kWh)	Mega-joule (MJ)
1 Mcal [5]	=	1	0,03968	1,163	4,186
1 therm [6]	=	25,2	1	29,31	105,5
1 kWh	=	0,860	0,03412	1	3,6
1 MJ	=	0,2389	0,00948	0,2778	1

Calorific value (and Wobbe index)

		Mega calorie per standard m³ (Mcal/m³s) [7]	kilo calorie per standard m³ (kcal/Nm³) [8]	British thermal unit per cu.ft. (Btu/ft³) [9]	Mega joule per standard m³ (MJ/m³s) [7]
1 Mcal/m³ [7]	=	1	1055	110,5	4,186
1 kcal/Nm³ [8]	=	948×10^{-6}	1	0,1047	3968×10^{-6}
1 Btu/ft³ [9]	=	0,00905	9,55	1	0,03788
1 MJ/m³s [7]	=	0,2389	252,0	26,4	1

[1] 1 bar = 10^5 N/m², 1 millibar = 10^2 N/m²

[2] same as 760 mm Hg (mercury) at sea level

[3] formerly: kg/cm², same as 1 at, or 1 ato over pressure

[4] formerly: 1 lb/sq.in or as psi

[5] 1 themic to be considered the same as 1 Mcal

[6] 1 therm = 100.000 Btu (British thermal unit)

[7] m³s = 1 m³ (15 °C, 1013 mbar, dry)

[8] 1 Nm = 1 m³ (0 °C, 760 mm Hg, dry)

[9] 1 ft³ = 1 ft³ (60 °F, 30 in Hg, wet)

[10] PSi = pound/inch²

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