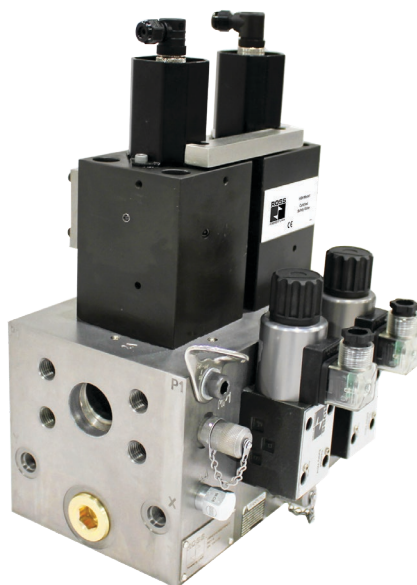




HYDRAULIC BLOCK & STOP VALVE SYSTEMS

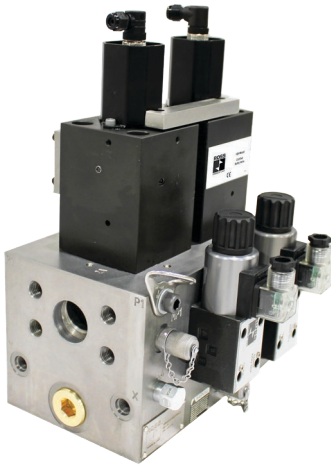
HBH SERIES



PRODUCT CATALOG

HBH Series Hydraulic Block & Stop Redundant Valve Systems for External Monitoring

Block & Stop Safety Function
Blocks the flow of hydraulic fluid in order to stop cylinder motion.



The HBH Series valves are redundant blocking valve systems designed for critical applications where safe block and stop is required for hydraulically controlled cylinders. These valve systems are equipped with inductive position switches for external monitoring by an electrical safety control system.

NOTE: Block and Stop functions are intended to momentarily stop an actuator (linear or rotary), but not to hold the actuator in place for an extended period. The HBH valve is a spool type valve, and normal spool leakage will occur. The valve is intended to be used as a “permissive” safety device. Applications where long-term holding is necessary should also incorporate other components such as PO check, counterbalance, or mechanical locking devices.

NOTE: HBH valves are intended to be used only for tasks that are routine, repetitive, and integral to production. Maintenance tasks require following full lock-out/tag-out procedures to relieve hazardous energy and prevent unexpected startup.

VALVE SYSTEM FEATURES

External Monitoring	Each single valve in the HBH Series system is equipped with inductive position switches. Monitoring of these switches is to be done by an electrical safety control system.
Poppet and Spool Type Design	Poppet-type cartridge valve elements for blocking flow and stopping cylinder motion. Solenoid pilot valves are spool type.
Tamper Resistant	Special tool required for disassembly
Mounting	In-line – with Code 62 Flange ports

These valves are not designed for controlling clutch/brake mechanisms on mechanical power presses.

PRODUCT CREDENTIALS

Performance Level Per ISO 13849-1:2015 Cat. 3 PL d Pending	Safety Integrity Level Per IEC 2061:2001 SIL 2 Functional Safety Pending	Declaration of Conformity CE
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STANDARD SPECIFICATIONS					
GENERAL	Function		Block & Stop		
	Construction Design		Redundant valve system, poppet type with spool type pilot valves		
	Actuation	Electrical	Solenoid- 2 per system		
			One solenoid per valve element Both to be operated synchronously		
	Mounting	Type	In-line		
		Orientation	Any, preferably horizontal		
	Connection (hydraulic)		Code 62 Flange (P1 & P2), SAE (X, Y, MP1, M-M, MP2)		
			Connections (fittings and tubing/piping) must be equal to or larger the stated connection size at Port Y.		
Monitoring		Dynamic, cyclical, external with customer supplied equipment. Monitoring should check state of both valve position switches with any and all changes in state of valve control signals. See Integration Guide.			
Minimum Operation Frequency		Once per month, to ensure proper function			
OPERATING CONDITIONS	Temperature	Ambient	-4° to 160°F (-20° to 71°C)		
		Media	-4° to 140°F (-20° to 60°C)		
	Flow Media	Hydraulic Fluids	Mineral Oil HLP, HL-DIN 51524		
			Vegetable Oil HETG - VDMA 24568		
	Max Fluid Contamination Level		ISO 4406 class 20/18/15 NAS 1638 class 9		
	Flow	Size 25	90 gpm		
		Size 32	145 gpm		
	Operating Pressure		5000 psi (344 bar) maximum		
ELECTRICAL DATA	Solenoids		Current Flow	Operating Voltage	Power Consumption (each solenoid)
			DC	24 volts	30 watts
			Rated for continuous duty		
			Design according to VDE 0580		
	Enclosure Rating		DIN EN 60529 IP 65		
	Electrical Connection		DIN EN 175301-803		Form A
	Power Consumption (each solenoid)		30 watts		
	Inductive Position Switch (2 per system)		PNP (M12, 4-pin, A-coded, male); works with both 4-pin & 5-pin female cord sets		
	Maximum Current (each switch)		400mA maximum		
CONSTRUCTION MATERIAL	Valve Body		Cast Steel		
	Manifold		Ductile Iron		
	Spool		Steel		
	Seals		Buna-N		
IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS, WARNINGS on the inside back cover.					

Ordering Information

MODEL NUMBER CONFIGURATOR

Series

Valve Type

Material Type

Pressure Relief

HBH

D

D

XX

682F

B

A

E

X

A*

Revision Level

Communication

Monitoring

Voltage

Seal Type

Double

Ductile Iron

No Pressure Relief Valve

None

External

24 V DC

Buna-N

Body Size	Flow Rate	Port Size	Port Type	
25	0 to 90 gpm	1-1/2	Code 62 Flange	682F
		2	Code 62 Flange	692F
32	0 to 145 gpm	2	Code 62 Flange	792F

*Subject to change.

Model Number examples: HBHDDXX692FBAEXA, HBHDDXX792FBAEXA.

Custom configurations available, consult ROSS.

Body Size	Weight lb (kg)
25	112.3 (50.9)
32	142.8 (64.8)

Wiring Diagram

Inductive Position Switch Connector

1 = Supply +24 volts DC

2 = Output Signal NC

3 = Ground

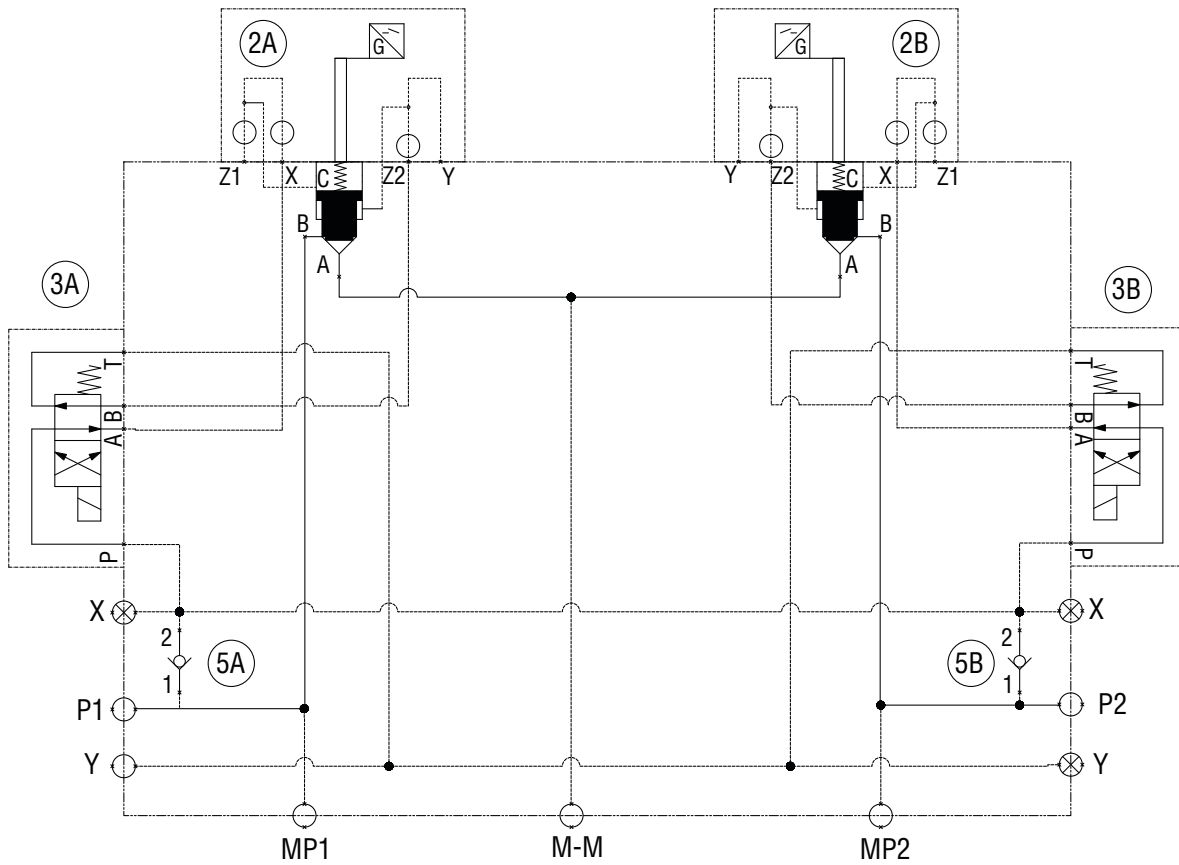
4 = Output Signal NO

NOTE: PNP (M12, 4-pin, A-coded, male); works with both 4-pin & 5-pin female cord sets.

4

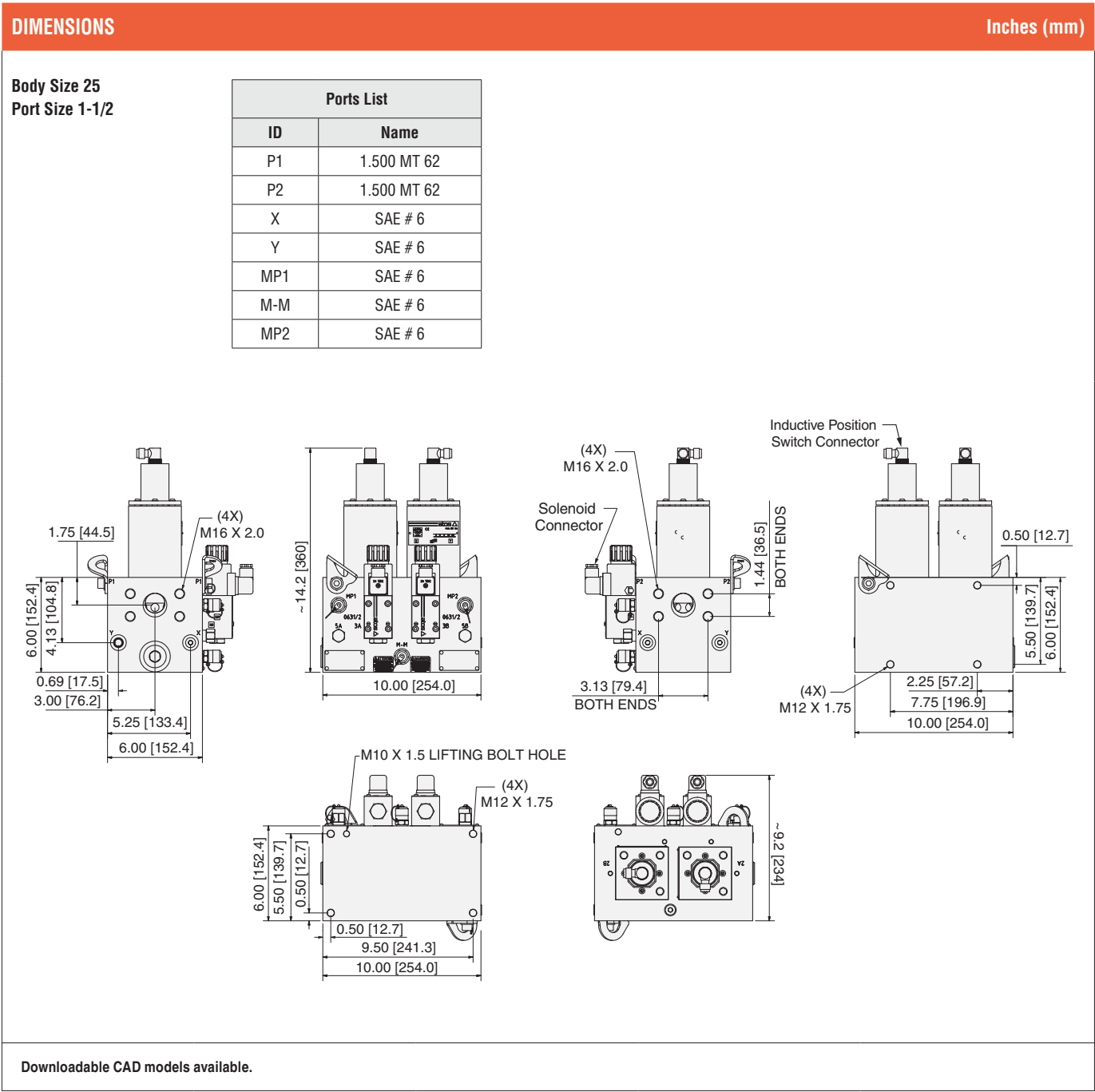
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VALVE SYSTEM SCHEMATIC



An Integration Guide for HBH Series valve systems is available from ROSS to provide information such as operation, monitoring, and integration into users control circuits.

Technical Data

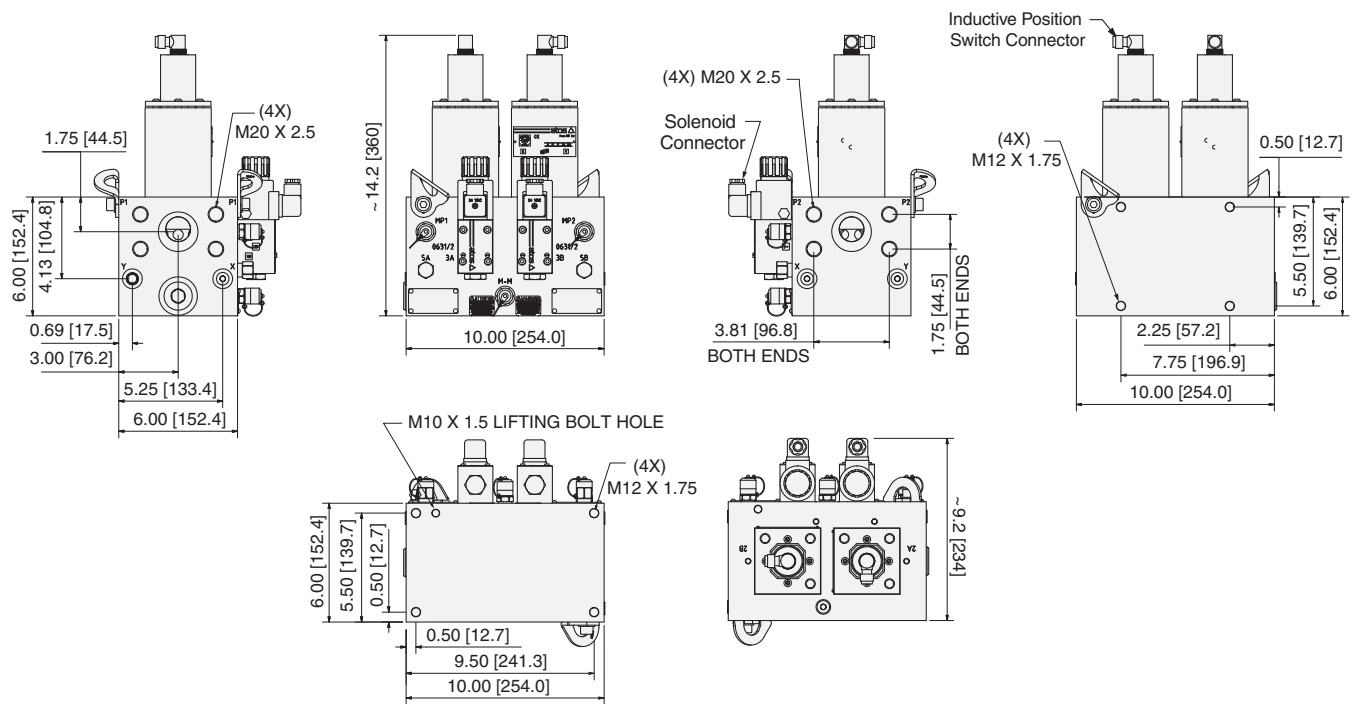


DIMENSIONS

Inches (mm)

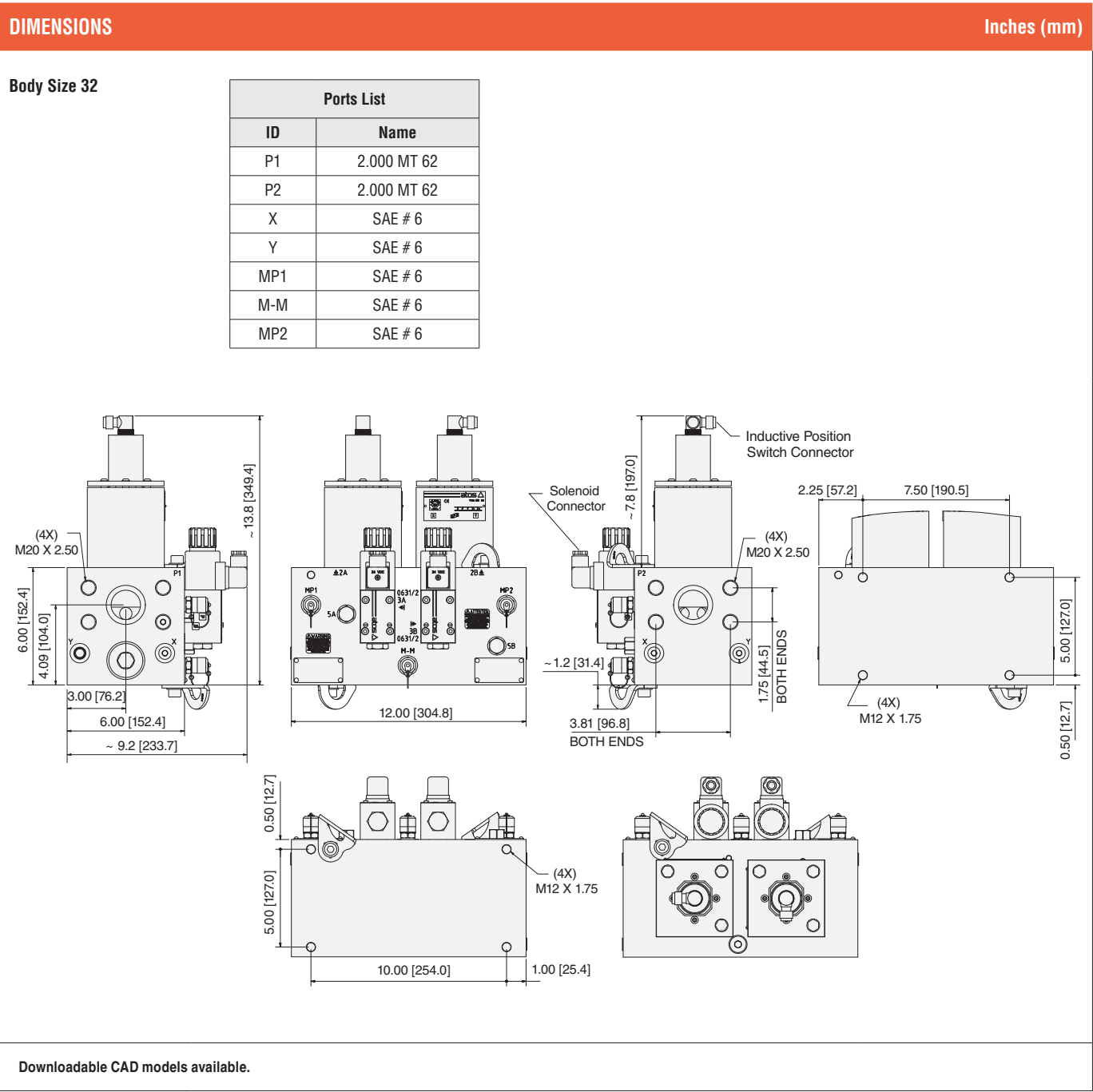
Body Size 25
Port Size 2

Ports List	
ID	Name
P1	2.000 MT 62
P2	2.000 MT 62
X	SAE # 6
Y	SAE # 6
MP1	SAE # 6
M-M	SAE # 6
MP2	SAE # 6



Downloadable CAD models available.

Technical Data



PREWIRED ELECTRICAL CONNECTORS

Cable with Connector without Light	Cable with Lighted Connector
	

Prewired Connector Kits	Cable						Kit Number
	End 1	End 2	Length meters (feet)	Connection	Quantity Included	Cord Diameter mm	Without Light
	Connector	Cord /Connector					
	DIN EN 175301-803 Form A	Flying leads	5 (16.4)	Solenoid	2	6	2243H77
			10 (32.8)	Solenoid	2	6	2244H77
	M12 5-pin, Female	Flying leads	5 (16.4)	Sensor	2	6	2644B77
			10 (32.8)	Sensor	2	6	2370B77
		M12 5-pin, Male	5 (16.4)	Sensor	2	6	2645B77
			10 (32.8)	Sensor	2	6	2371B77

Prewired Connectors	Cable						Model Number	
	End 1	End 2	Connection	Quantity Included	Length meters (feet)	Cord Diameter mm	Without Light	Lighted Connector
	Connector	Cord						24 V DC
	DIN EN 175301-803 Form A	Flying leads	Solenoid	1	2 (6.5)	6	721K77	720K77-W
						10	371K77	383K77-W

ELECTRICAL CONNECTORS

with Cable Grip, without Light	with Cable Grip, with Light	1/2" NPT Conduit
		

Connectors	Connector					Model Number	
	Type	Connection	Fitting Connection	Quantity Included	Cord Diameter mm	Without Light	Lighted Connector*
	DIN EN 175301-803 Form A	Solenoid	Cable grip	1	8 to 10		936K87-W
			1/2" NPT conduit	1	—	723K77	724K77-W

*Lights in connectors with a translucent housing can be used as indicator lights to show when solenoids are energized.

CAUTIONS: Do not use electrical connectors with surge suppressors, as this may increase valve response time when de-actuating the solenoids.

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CAUTIONS, WARNINGS

Additional technical documentation, cautions and warnings information is available.

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		Canada	ROSS CANADA	Tel: +1-416-251-7677	www.rosscanada.com
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