



PENTAIR SÜDMO



PENTAIR SÜDMO HYGIENIC PROCESS VALVES

F783 EASYMIND CONTROL HEAD

F783E CONTROL HEAD

The F783 control head is an Automated Valve Interface Device (AVID) with integrated sensors and solenoid valve with a single connection to the PLC system. For DIGITAL (hard-wired) and BUS control interfaces.

GENERAL APPLICATIONS

- Dairies
- Breweries
- Wineries
- Canneries
- Food processing
- Pharmaceuticals
- Chemical
- Beverages
- Other industries

TECHNICAL DATA

Control voltage:	24V dc, 24V ac, 110V ac
Operating temp.:	-10°C to +50°C (14°F to 122°F) (Non condensing)
Air pressure:	150 to 700kPa
Position sensor:	various
C _v :	0.2

Explosive Atmospheres (Special Variants): Protection by enclosure

Powder/Dust Zone 22

- IECEx:	Ex tc IIIC T90°C IP65 IECEx ITA 11.0016X
- ATEX:	II 3D Ex tc IIIC T90°C TUV 16 ATEX 7985X

Intrinsically safe

Gas Zone 0, 1, 2 or

Powder/Dust Zone 20, 21, 22

- IECEx:	Ex ia IIB T5 Ga IP65 Ex ia IIC T5 Gb IP65 Ex ia IIIC T90°C Da IP65 IECEx ITA 11.0016X
- ATEX:	II 1G Ex ia IIB T5 Ga II 2G Ex ia IIC T5 Gb II 1D Ex ia IIIC T90°C IP65 Da TUV 16 ATEX 7985 X

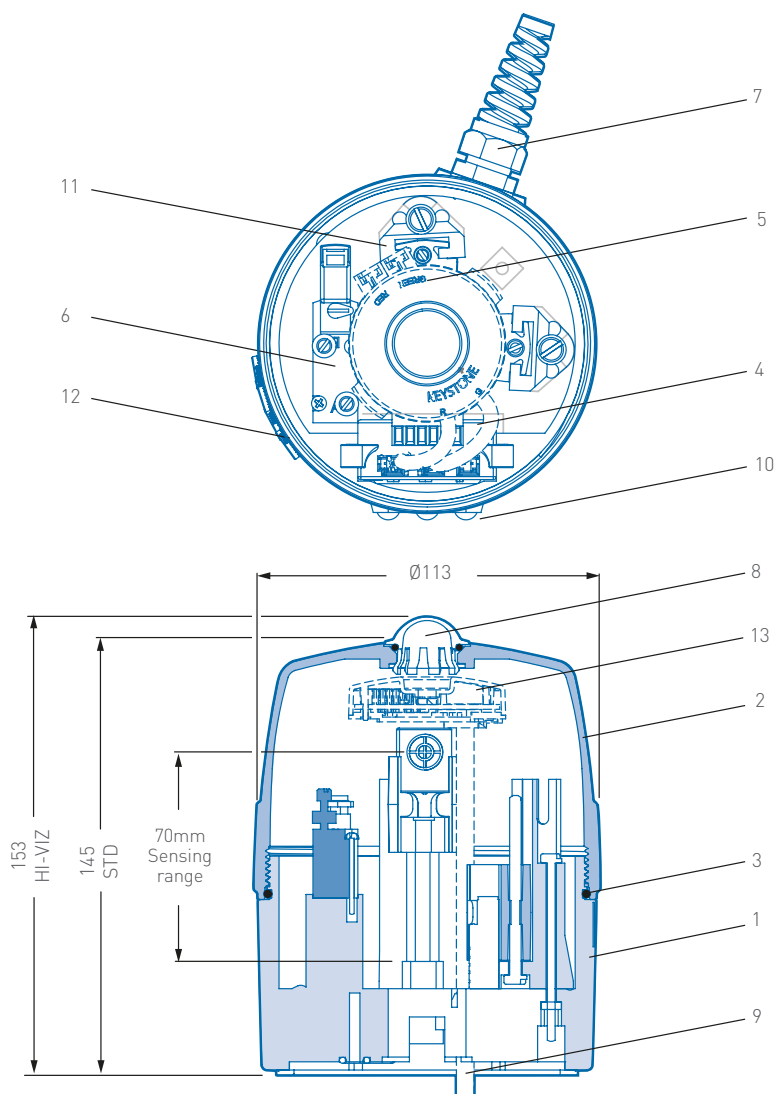
FEATURES

- 24V dc/ac, 110V ac or BUS specific voltages.
- World recognized BUS protocols.
- Modular design.
- Single 5/2 solenoid valve (as standard).
- Bi-directional speed controls.
- Lockable manual override.
- Plug in control module, switches and solenoid.
- Linear and rotary configuration.
- Corrosion resistant materials.
- Robust IP65 enclosure.
- Enclosure safety vent.
- High visibility valve status LED indicators (side mounted).
- Optional HI-VIZ position LED indicator (top mounted; retrofittable).
- Semi-conductive Nylon enclosure for Ex versions.
- Cable entry options PG7, PG9, M16, M20.
- Low power consumption.
- Built-in short circuit protection.



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TECHNICAL SPECIFICATIONS



NOTES

Air fittings 6mm STD. (1/4" Option)

IN = Air inlet port
EX = Exhaust port
B = Outlet port B
A = Outlet port A

LED factory settings:

Red = Valve closed indication
Green = Valve open indication
Amber = Solenoid valve activated



PARTS LIST

No.	Description	Standard version	Material	HI-VIZ version	Ex version
1	Control head base	GF ^[1] Nylon (Black)	GF ^[1] Nylon (Black)	GF ^[1] Nylon (Black)	CF ^[2] Nylon (Black)
2	Control head cap	GF ^[1] Nylon (Black)	GF ^[1] Nylon (Black)	GF ^[1] Nylon (Black)	CF ^[2] Nylon (Black)
3	Control head O-ring	EPDM	EPDM	EPDM	EPDM
4	Control module	Various	Various	Various	Various
5	Position sensor (proximity type)	-	-	-	-
6	Solenoid valve	-	-	-	-
7	Cable glands	Polyamide	Polyamide	Polyamide	Various ^[3]
8	Relief valve (incl. HI-VIZ lens)	A.E.S / Nylon (Yellow)	Nylon (White)	Nylon (White)	CF ^[2] Nylon (Black)
9	Mounting fasteners	SS304 M6 x 30	M6 x 127	M6 x 127	SS304 M6 x 30
10	LED lenses	Nylon (Clear)	Nylon (Clear)	Nylon (Clear)	Nylon (Clear)
11	Switch pillar	A.B.S.	A.B.S.	A.B.S.	A.B.S.
12	Air fittings	Various	Various	Various	Various
13	HI-VIZ module	-	Various	Various	-

NOTE

- GF Nylon = Glass filled Nylon (standard enclosures)
- CF Nylon = Carbon filled Nylon (semi conductive Nylon; Ex enclosures only)
- For cable gland details see nomenclature at last page

A.B.S. Acrylonitrile Butadiene Styrene

A.E.S. Acrylonitrile Ethylene Styrene

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F783E CONTROL HEAD

TECHNICAL SPECIFICATIONS

Control head housing	Module types available						
	24V DC PNP	24V DC NPN	24V AC	110V AC	AS-I	D-Net	EEx i ^[1]
Type	For linear and rotary actuators						
Ingress Protection Rating	IP65, IP67						IP65
Visual status indication	Yes						No
Impact / Drop test	IEC 61241						
Chemical resistant	Yes						Yes
Safety vented	Yes						Yes
Module	(See module specific tech sheet)						No module
Proximity sensor std.							
Type	Inductive						
Output function	Normally Open	Normally Open	Normally Open	Normally Open	Normally Open	Normally Open	Normally Closed
Short circuit protection	✓	✓	✗	✗	-	-	✗
Supply voltage	10...30V DC	10...30V DC	20...140V AC	20...140V AC	10...30V DC	10...30V DC	7.5...30V DC
Voltage drop	< 3.0V at 100mA	< 3.0V at 100mA	< 5.0V at 200mA	< 5.0V at 200mA	< 3.0V at 100mA	< 3.0V at 100mA	-
Min. load current	-	-	5mA	5mA	-	-	-
Max. leakage current	< 0.01mA	< 0.01mA	< 0.8mA	< 0.8mA	-	-	< 1 mA
# Wires	3	3	2	2	3	3	2
No load current	< 7mA (Off)	< 7mA (Off)	< 0.8mA (Off)	< 0.8mA (Off)	< 7mA (Off)	< 7mA (Off)	-
Protection rating	IP67	IP67	IP67	IP67	IP67	IP67	IP65
Solenoid							
Model	SYJ5153	SYJ5153	SYJ5153	SYJ5153	SYJ5153	SYJ5153	^[2] SYJ5153 + 302 pilot
Type	5 Port 2 Way						
Supply voltage	24V DC	24V DC	24V DC	110V AC	BUS power	BUS power	12V DC STD [24V Option]
Power consumption	0.4W	0.4W	0.4W	1.1W	0.4W	0.4W	0.5W
Lockable manual override	✓	✓	✓	✓	✓	✓	✗
Air pressure diff. min./max.	150/700kPa (14.5/101.5psi)						
Ambient temperature	Max. 50°C (122°F)						
Allowable voltage	± 10% rated voltage						^[3] -0%...+30%
C _v	0.19 - 0.21						
Protection rating	IP67	IP67	IP67	IP67	IP67	IP67	IP65

NOTES

- Control heads can be supplied in a number of different configurations, i.e. with or without solenoid or module and single or dual switching. Different types and makes of switches can also be fitted on request, i.e. proximity (std), reed or microswitch etc.
- The maximum temperature rating of the control head is limited by the solenoid. Rated at 50°C (122°F).
- Use only clean dry air. Do not use air combined with oil of any kind.

EXPLOSIVE ATMOSPHERES

1. Connection to certified intrinsically safe circuits with the max. values $U = 15\text{ V} / I = 50\text{ mA} / P = 120\text{ mW}$
2. For Ex-ia units the solenoid valve arrangement is a combination of the standard SYJ5153 valve with the coil replaced with an approved intrinsically safe 302 pilot valve/coil.
3. Coil designed for continuous duty within the maximum ambient temperature limits. The solenoid valve must be connected to a approved safety barrier or interface, located in a safe area.

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F783E CONTROL HEAD DIGITAL 24V AC/DC MODULE

The F783E Digital 24V AC/DC control module is for use in the F783E control head and is connected via hard-wired I/O directly to a PLC. This single module can be used for AC and DC (PNP/NPN) type of applications.

FEATURES

- Hard-wired I/O control system.
- Compatible with most common PLC's.
- Easy fit, with simple clip retainers.
- Single module for AC and DC applications.
- 2 limit switch/sensor inputs.
- 1 solenoid valve output.
- Plug-in switches and solenoid valves.
- Fully adjustable limit switches.
- Electronics conformal coated.
- Low power consumption, under 80mA in normal operational mode (solenoid valve energized, 1 input sensor on).
- Built-in short circuit protection to 250mA on any output.
- External LED indication of valve position and solenoid valve status.
- Customers preference for field connections.
 - Flying lead with connector.
 - Bulkhead fitted socket.
 - Open wiring system using cable gland (standard).



APPLICATION AREA

This device has been designed for use in any industry where hard-wired Digital control is desired, such as the food, beverage and pharmaceutical industries.

I/O CONNECTIONS

Note

Also see 'Wiring and connectors' paragraph

Hard-wired inputs

Input 1: Closed position sensor, red LED indication at front of module (3 wire connection)

Input 2: Open position sensor, green LED indication at front of module (3 wire connection)

Hard-wired output

Output 1: Main solenoid valve, amber LED indication at front of module (2 wire connection)

LED INDICATORS

Red (left): valve position indication

Indicates closed limit switch active (input 1).

Green (centre): valve position indication

Indicates open limit switch active (input 2).

Amber (right): solenoid valve

Indicates solenoid valve energized (output 1).

PENTAIR SÜDMO

F783E CONTROL HEAD DIGITAL 24V AC/DC MODULE

General characteristics

Power supply	24V AC/DC (±10%)
Max. switching current	100 mA at 55°C (131°F)
Number of devices	limited by system power supply
1 input, no outputs (normal valve closed situation) Main solenoid valve OFF with 1 proximity ON	40mA
1 input, 1 output (normal valve open situation) Main solenoid valve ON with 1 proximity ON	80mA

ENCLOSURE ENVIRONMENT SPECIFICATIONS

Operating temperature:	-10°C to +50°C (14°F to 122°F) (non condensing)
Storage temperature:	-10°C to +50°C (14°F to 122°F) (non condensing)
Protection class:	See housing specifications
EMC directive:	89/336/EE

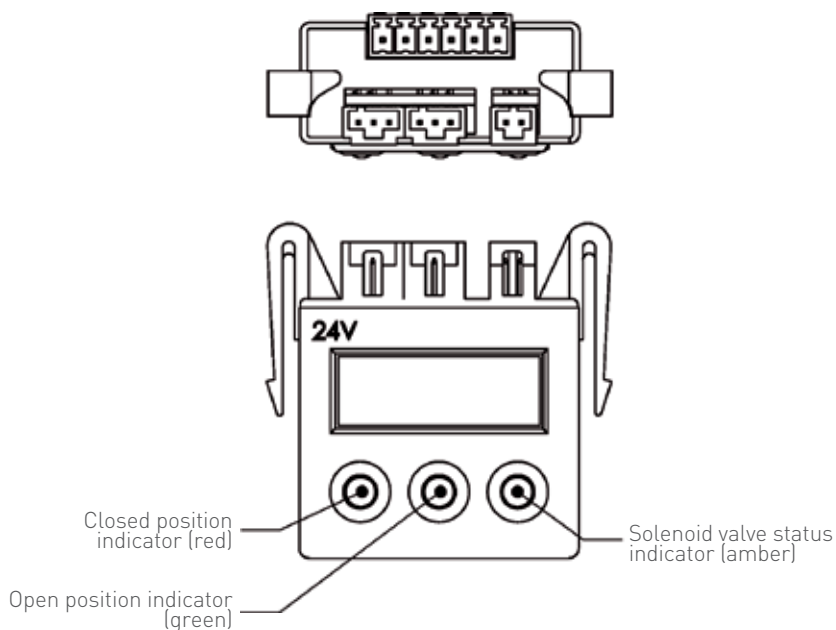
WIRING AND CONNECTORS

The 6-pin PHOENIX plug on the module is connected as follows:

Terminal	AC	DC(PNP)	DC(NPN)
1	P	+	-
2	N	-	+
3		Closed input signal	
4		Open input signal	
5		Solenoid valve (polarity NOT critical)	
6		Solenoid valve (polarity NOT critical)	

NOTE

If 5 core wire control is required, the negative (-) terminal of the solenoid valve may be connected via a suitable jumper, to the matching polarity terminal at 1 or 2 respectively.



PENTAIR SÜDMO

F783E CONTROL HEAD AS-INTERFACE MODULE

The F783E AS-Interface control module is for use in the F783E control head and is connected via an AS-Interface master to a PLC.

FEATURES

- Fully AS-Interface version 3.0 compatible A/B slave device (max. 62 slaves).
- Easy fit, with simple clip retainers.
- 2 limit switch/sensor inputs.
- 3 solenoid valve outputs.
- Plug-in switches and solenoid valves.
- Fully adjustable limit switches.
- Electronics conformal coated.
- Low power consumption, under 70mA in normal operational mode (main solenoid valve energized, 1 input sensor active).
- BUS powered or external power option (selectable with jumper wires on module connector).
- Built-in short circuit protection to 200mA on any output.
- External LED indication of valve position, solenoid valve status and fault status.
- Customers preference for field connections.
 - Flying lead with connector.
 - Bulkhead fitted socket.
 - Open wiring system using standard cable gland



APPLICATION AREA

This device has been designed for use in any industry where simple BUS network control is desired, such as the food, beverage and pharmaceutical industries.

AS-INTERFACE 2 IN/3 OUT BIT-MAPPING

AS-Interface inputs

I0 (input 0)*	Closed limit switch
I1 (input 1)*	Open limit switch

AS-Interface outputs

O0 (output 0)*	Main solenoid valve
O1 (output 1)*	Auxiliary output 1
O2 (output 2)*	Auxiliary output 2

(*) Refers to the physical I/O labeling as referenced on the picture adjacent.

LED INDICATORS

Red (left): valve position indication

Indicates closed limit switch active (input 0; I0)*

Green (centre): valve position indication

Indicates open limit switch active (input 1; I1)*

Amber (right): main solenoid valve

Indicates main solenoid energized (output 0; O0)*

Amber small: optional solenoid valve

Indicates (output 1; O1)* is energized

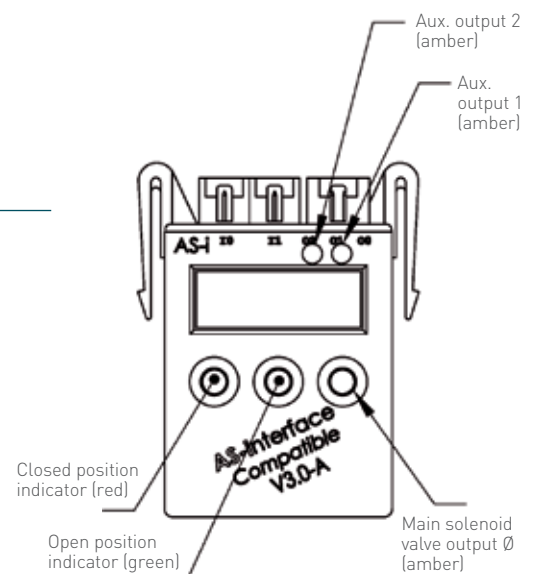
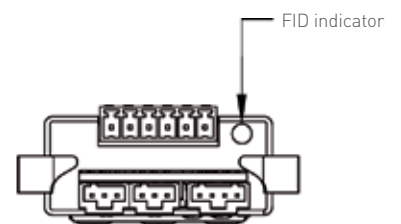
Amber small: optional solenoid valve

Indicates (output 2; O2)* is energized

Red small: FID indication (On top of module, unlabeled)

This red indicator is active if the module does not have auxiliary power connected (for example the jumpers are not installed) or if the address is = 0

(*) Refers to the physical I/O labeling as referenced on the picture adjacent.



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F783E CONTROL HEAD AS-INTERFACE MODULE

General characteristics

Power supply (BUS standard)	30V DC
Number of slaves	62
Data cycle time for A+B slaves	10ms maximum

Typical load current situations in (mA)

1 input, no outputs (normal valve closed situation)	35mA
Main solenoid OFF with 1 proximity ON	(34mA)*
1 input, 1 output (normal valve open situation)	63.5mA
Main solenoid ON with 1 proximity ON	(55mA)*
Recommended maximum power available for both additional auxiliary outputs O1 and O2 combined	120mA
	(200mA)*

(*) Denotes load with auxiliary power option

ENCLOSURE ENVIRONMENT SPECIFICATIONS

Operating temperature:	-10°C to +50°C (14°F to 122°F) (non condensing)
Storage temperature:	-10°C to +50°C (14°F to 122°F) (non condensing)
Protection class:	See housing specifications
EMC directive:	89/336/EE

AS-INTERFACE CONFIGURATION

Device type I/O code = 7, ID code = A, ID1 = 0, ID2 = E

Input mask		I/O structure		Output mask	
Bit	Function	Bit	Function	Bit	Function
0	Input 0	0	Output 0		
1	Input 1	1	Output 1		
2	Not used	2	Output 2		
3	Not used	3	Not used		

WIRING AND CONNECTORS

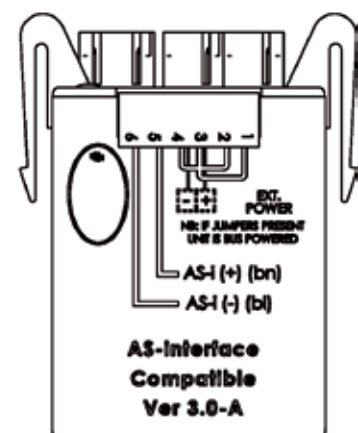
To power the module from the BUS, ensure jumper wires are installed from terminals 1 to 3, and 2 to 4.

NB: Jumpers are supplied and fitted as std. on all new control head assemblies.

To power the device from an auxiliary supply, remove the jumper from terminal 1 to 3 and connect 24V DC positive to terminal 3. Connect the supply negative to terminal 4, leaving the jumper from terminal 2 to 4 in place. Do not connect anything to terminal 1.

The 6-pin PHOENIX plug on the module is connected as follows:

Terminal	AS-Interface
1	Internal 30 V DC +ve (out)
2	Internal 30 V DC -ve (out)
3	External 30 V DC +ve (in)
4	External 30 V DC -ve (in)
5	BUS +ve (brown)
6	BUS -ve (blue)



PENTAIR SÜDMO

F783E CONTROL HEAD D-NET MODULE

The F783E AS-Interface control module is for use in the F783E control head and is connected via an AS-Interface master to a PLC.

FEATURES

- Fully DeviceNet compatible group two slave device.
- Easy fit, with simple clip retainers.
- 2 limit switch/sensor inputs.
- 3 solenoid valve outputs.
- Plug-in switches and solenoid valves.
- Fully adjustable limit switches.
- Electronics conformal coated.
- Low power consumption, under 70 mA in normal operational mode (main solenoid valve energized, 1 input sensor active).
- Voltage booster for the input sensors and the outputs to 22 volts minimum.
- Internal open/closed limit fault timers.
- Reverse action option.
- Analogue and pulse counter input options.
- PENTAIR seal kit, valve and actuator assembly part numbers stored on-board the device. These can be re-defined by the user if required.
- User-configured maintenance data stored on-board.
- Users own part numbers for service components.
- User defined service flag.
- Proven CAN communication technology.
- Supports Change-of-State (COS) and polled messaging.
- Built-in short circuit protection to I(max) = 500mA (internal).
- External LED indication of valve position, solenoid valve, BUS and module status.
- Customers preference for field connections.
 - Flying lead with mini or micro connector.
 - Bulkhead fitted socket.
 - Open wiring system using standard cable gland.
- Permanent record on EEPROM of:
 - Total number of operations since manufacture.
 - Dates of last actuator and valve service.
 - Number of valve operations since last service.
 - Last open and close cycle times.
 - Average time of last 8 cycles.



APPLICATION AREA

This device has been designed for use in any industry where a comprehensive BUS network control solution is desired, such as the food, beverage and pharmaceutical industries.

LED INDICATORS

Red (left): valve position indication
Indicates closed limit switch active (input 1).

Green (centre): valve position indication
Indicates open limit switch active (input 2).

Bicolor amber/red (right): BUS/module status.
Indicates BUS status and main solenoid valve active (output 1).

DEVICE INPUT MAP

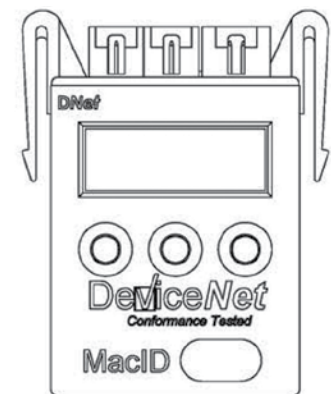
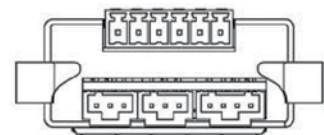
The input status byte describes the state of the module inputs, service flag setting, FTC and FTO timers set, module low voltage alarm, and device failure alarm. The bit pattern is read as follows:

Bit 0	Closed limit switch ON
Bit 1	Open limit switch ON
Bit 2	Service flag set
Bit 3	Double indication
Bit 4	Failed to open (within set time)
Bit 5	Failed to close (within set time)
Bit 6	Low voltage
Bit 7	Module failed

DEVICE OUTPUT MAP

The 8 bit output byte maps the following network commands to the device:

Bit 0	Energize output 1
Bit 1	Energize output 2
Bit 2	Energize output 3
Bit 3	Initiate ESD function
Bit 4	Reset failed to open flag
Bit 5	Reset failed to close flag
Bit 6	Reset low voltage flag
Bit 7	Reset module failed flag



NOTES

Only output 1 is controlled by the ESD (Emergency Shut Down) command, the other 2 outputs remain as set in the program. The service flag is reset by writing a new service count value to parameter 13 either with a manager program, or via the PLC.

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F783E CONTROL HEAD D-NET MODULE

General characteristics

Power supply (BUS standard)	11-25V DC
Signalling	CAN
Data rates	125K, 250K, 500K
Network length	500/250/100m at 125/250/500kBaud
Number of nodes	64
Modulation	Baseband
Encoding	NRZ with bit stuffing
Typical protocol efficiency	8%
Isolation	500V
Differential input impedance typical (recessive state) Shunt R = 25K Ohms (power on)	Shunt C = 5pF
Differential input impedance minimum (recessive state) Shunt R = 20K Ohms (power on)	Shunt C = 10pF
Absolute max. voltage range	-25 to +18V [CAN_H, CAN_L]
Max. recommended load current	250mA
Short circuit protection internal	350mA

Typical load current situations in (mA)

No Output energized, 1 Input ON (normal 'valve-closed' state), supply voltage 24V	33.2mA
1 Output ON, 1 Input ON (normal 'valve-open' state), supply voltage 24V	44.0mA
1 Output ON, 1 Input ON (normal 'valve-open' state), supply voltage 12V	84.5mA

ENCLOSURE ENVIRONMENT SPECIFICATIONS

Operating temperature: -10°C to +50°C (14°F to 122°F) (non condensing)
Storage temperature: -10°C to +50°C (14°F to 122°F) (non condensing)
Protection class: See housing specifications

DEVICENET CONFIGURATION

Device type: group 2 slave device

NOTE: For full details on module configuration see separate full DeviceNet feature list

WIRING AND CONNECTORS

The standard F783E control head with its pig-tail cable gland will take the DeviceNet drop-line cable, allowing for quick and economical conversion from a hard-wired control system to a DeviceNet network.

Other field connection options available on request, of which std. options are shown at the bottom of the 'features' section above.

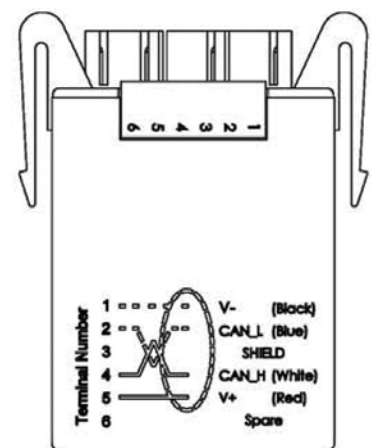
The 6-pin PHOENIX plug on the module is connected as follows:

Terminal	DeviceNet
1	V- (black)
2	CAN_L (blue)
3	Screen
4	CAN_H (white)
5	V+ (red)
6	Not used

NOTE:

This device requires a matching EDS (Electronic Data Sheet) to allow the network to recognise the device when connected.

The latest version of the EDS file can be obtained from our web site F783E downloads or any earlier versions from the factory, please contact your sales representative for further details.



PENTAIR SÜDMO

F783E CONTROL HEAD DIGITAL 110V AC MODULE

The F783E Digital 110V AC control module is for use in the F783E control head and is connected by hard-wired I/O directly to a PLC.

FEATURES

- Hard-wired I/O control system.
- Compatible with most common PLC's.
- Easy fit, with simple clip retainers.
- 2 limit switch/sensor inputs.
- 1 solenoid valve output.
- Plug-in switches and solenoid valves.
- Fully adjustable limit switches.
- Electronics conformal coated.
- High visibility solenoid valve and valve status LED indicators.
- Low power consumption, under 25mA in normal operational mode (solenoid energized, 1 input sensor on).
- External LED indication of valve position and solenoid valve status.
- Customers preference for field connections.
 - Flying lead with connector.
 - Bulkhead fitted socket.
 - Open wiring system using standard cable gland.



APPLICATION AREA

This device has been designed for use in any industry where hard-wired Digital control is desired, such as the food, beverage and pharmaceutical industries.

HARD WIRED OUTPUTS

I/O connections

Note

Also see 'Wiring and connectors' paragraph

Hard-wired inputs

Input 1: Closed position sensor, red LED indication at front of module (2 wire device 3 wire connection)

Input 2: Open position sensor, green LED indication at front of module (2 wire device 3 wire connection)

Hard-wired output

Output 1: Main solenoid valve, amber LED indication at front of module (2 wire connection)

LED INDICATORS

Red (left): valve position indication
Indicates closed limit switch active (input 1).

Green (centre): valve position indication
Indicates open limit switch active (input 2).

Amber (right): solenoid valve
Indicates solenoid valve energized (output 1).

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F783E CONTROL HEAD DIGITAL 110V AC MODULE

General characteristics

Power supply	110V AC, 50/60Hz
Max. switching current	100mA at 55°C (131°F)
Number of devices	limited by power supply

Typical load current situations in (mA)

1 input, no outputs (normal valve closed situation)	11mA
Main solenoid valve OFF with 1 proximity ON	
1 input, 1 output (normal valve open situation)	25mA
Main solenoid valve ON with 1 proximity ON	

ENCLOSURE ENVIRONMENT SPECIFICATIONS

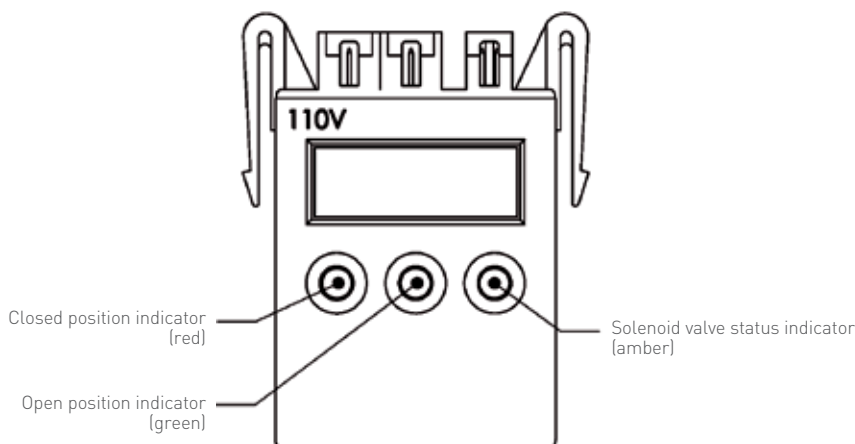
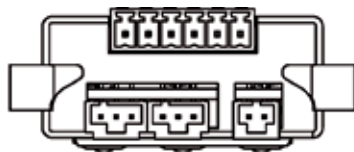
Operating temperature:	-10°C to +50°C (14°F to 122°F) (non condensing)
Storage temperature:	-10°C to +50°C (14°F to 122°F) (non condensing)
Protection class:	See housing specifications

WIRING AND CONNECTORS

The 6-pin PHOENIX plug on the module is connected as

Terminal	Digital 110 V AC
1	Supply (P)
2	Supply (N)
3	Closed output signal
4	Open output signal
5	Solenoid (P)
6	Solenoid (N)

NOTE: If 5 core control is required, terminals 2 and 6 may be connected via a suitable jumper.



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F783E CONTROL HEAD

SELECTION GUIDE

Example:	F783E	24	DC	P	M	1SA	2PK	CGB	M	HV
Model name	F783E									
Module voltage/Module interface										
12	12V (Ex ia version only)									
24	24V (Std.)									
110	110V									
ASI-3.0	AS-Interface									
D-NET	DeviceNet									
Voltage type: (specify for 24V and 110V only, otherwise leave blank)										
DC	DC (Std.)									
AC	AC									
Junction type: (only relevant to DC rated heads, otherwise leave blank)										
P	PNP (Std.)									
N	NPN									
Interface connection										
M	Module included (Std.)									
T	Terminal block included									
-	No Module or terminal block included									
Number and type of solenoids: (e.g. 1S = 1 solenoid)										
1SA	1 x 5/2 solenoid (Std.)									
0SX	No Solenoid but blanking plate fitted									
---	No blanking plate fitted									
Number and type of sensors: (e.g. 2M = 2 micro switches)										
- PK	Proximity switch PENTAIR (Std.)									
-- A	Air switch									
-- M	Micro switch									
-- N	NAMUR sensor (6-12V DC input stated at highest input level)									
- PI	Proximity switch IFM									
-- R	Reed switch									
- PS	11 mm Barrel proximity switch c/w 3M cables and SS body									
Electrical connection: Primary										
CG	Cable gland supplied, specify type with one of the following letters									
A	PG7	C	PG16	E	M20	G	PG16 c/w cable insert			
B	PG9 (Std.)	D	M16	F	M25	H	M20 c/w cable insert			
AMP	Amphenol plug									
BH4	4 Pin M12 bulkhead									
BH5	5 Pin M12 bulkhead									
BHV	4 Pin M12 bulkhead c/w Vampire									
M20	Tapped to M20 thread only (no gland supplied) NB: All IEC Ex heads supplied without gland									
Air connection style										
M	Metric tubing 6mm (Std.)									
I	Inch tubing 1/4"									
X	Air ports blanked									
Accessories or extender definer										
HV	High Visibility 360° LED Indication unit (Option)									
Ex-TC	IECEX and ATEX, Zone 22. Protection by enclosure									
Ex-ia	IECEX and ATEX, Zone 0, 1, 2 and 20, 21 22. Intrinsically safe (requires electrical barrier)									
WT	Header wired for remote power									
TR	Tropicalised to reduce condensation effect									



PENTAIR FLOW TECHNOLOGIES PACIFIC PTY LTD

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