Assembly 24 Vdc power usage, continued

Table 3-1 HPM Assembly 24 Vdc Power Usage, Continued

Description	Model Number	Channels	Assembly Current (Milliamps)
SDI FTA—Toledo Scale Cell	MU-TSDT02	1	65
SDI FTA—Manual/Auto Station	MU-TSDM02	1	65
SDI FTA—UDC6000	MU-TSDU02	1	65
Manual/Auto Station	MU-MASX02	N/A	800
SI FTA—Allen-Bradley	MU-TSIA12	1	65
SI FTA—Modbus	MU-TSIM12	1	65
Power Adapter (LLMux, SDI, SI FTAs)	MU-TLPA02	2	360
Galvanically Isolated HLAI FTA	MU-GAIH12/82	16	1200
Galvanically Isolated HLAI/STI FTA	MU-GAIH13/83	16	1200
Galvanically Isolated HLAI/STI FTA	MU-GAIH14/84	16	1200
Galvanically Isolated HLAI FTA	MU-GAIH22/92	16	1200
Galvanically Isolated AO FTA	MU-GAOX02/72	8	440
Galvanically Isolated AO FTA	MU-GAOX12/82	8	440
Galvanically Isolated 24 Vdc DI FTA	MU-GDID12/82	32	800
Galvanically Isolated 24 Vdc DI FTA	MU-GDID13/83	32	800
Galvanically Isolated 24 Vdc DO FTA	MU-GDOD12/82	16	1800
Galvanically Isolated 24 Vdc DO FTA	MU-GDOL12/82	16	1800
Combiner Panel	MU-GLFD02	N/A	0
Marshalling Panel	MU-GMAR02	N/A	0
Galvanic Isolation Power Distribution Assembly	MU-GPRD02	N/A	160
Long Distance I/O Link Extender Cards/Couplers	MU-ILDX02	N/A	300
Long Distance I/O Link Extender Cards/Couplers	MU-ILDX03	N/A	300
Standard I/O Link Extender Cards/Couplers	MU-IOLM02	N/A	196
Standard I/O Link Extender Cards/Couplers	MU-IOLX02	N/A	190
Analog Output Standby Manual with case	MU-SMAC02	4	250
Analog Output Standby Manual - Digital	51401926-100	8	2200
Digital Output Standby Manual with case	MU-SMDC02	16	70
Digital Output Standby Manual without case	MU-SMDX02	16	100

Standard FTAs, continued

Table 4-1 Standard FTAs and Associated Assemblies, Continued

Model Number	Description	Terminal Type	Channels	Mounting Size
MU-TDOD12	3-30 Vdc Solid-State Digital Output	C	16	B
MU-TDOD13	3-30 Vdc Solid-State Digital Output	C	16	B
MU-TDOD14	3-30 Vdc Solid-State Digital Output	C	16	B
MU-TDOD52	3-30 Vdc Solid-State Digital Output	S	16	B
MU-TDOD53	3-30 Vdc Solid-State Digital Output	S	16	B
MU-TDOD54	3-30 Vdc Solid-State Digital Output	S	16	B
MU-TDOD22	31-200 Vdc Solid-State Digital Output	C	16	B
MU-TDOD23	31-200 Vdc Solid-State Digital Output	C	16	B
MU-TDOD62	31-200 Vdc Solid-State Digital Output	S	16	B
MU-TDOD63	31-200 Vdc Solid-State Digital Output	S	16	B
MU-TDOA12	120/240 Vac Solid-State Digital Output	C	16	B
MU-TDOA13	120/240 Vac Solid-State Digital Output	C	16	B
MU-TDOA52	120/240 Vac Solid-State Digital Output	S	16	B
MU-TDOA53	120/240 Vac Solid-State Digital Output	S	16	B
MU-TDOR12	120 Vac/125 Vdc Relay Digital Output	C	16	B
MU-TDOR52	120 Vac/125 Vdc Relay Digital Output	S	16	B
MU-TDOY23	120 Vac/125 Vdc Relay Digital Output	C	16	B
MU-TDOY63	120 Vac/125 Vdc Relay Digital Output	S	16	B
MU-TDOR22	240 Vac/125 Vdc Relay Digital Output	C	16	B
MU-TDOR62	240 Vac/125 Vdc Relay Digital Output	S	16	B
MU-TPIX12	Pulse Input	C	8	B
MU-TPIX52	Pulse Input	S	8	B
MU-TSDT02	Serial Device Interface—Toledo Weigh Cell	DB-25	1	A
MU-TSDM02	Serial Device Interface—Manual/Auto Station	C	1	A
MU-TSDU02	Serial Device Interface—UDC 6000 Modbus	C	1	A
MU-TSIA12	Serial Interface—Allen-Bradley	DB-25	1	A

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Approved Division 2 area equipment, continued

Table 5-2 HPM Equipment Approved for Use in Division 2 Areas, Continued

Model Number	Description
Standard FTA Components, continued	
MU-TDON12	24 Vdc Nonisolated Digital Output with compress terminals
MU-TDON52	24 Vdc Nonisolated Digital Output with screw terminals
MU-TDOY22	24 Vdc Isolated Digital Output with compression terminals
MU-TDOY62	24 Vdc Isolated Digital Output with screw terminals
MU-TDPR02	Digital Input Power Distribution Assembly
MU-TLPA02	Power Adapter (LLMux, SDI, SI)
MU-TPIX12	Pulse Input with compression terminals
MU-TPIX52	Pulse Input with screw terminals
MU-TSDM02	Serial Device Interface—Manual/Auto Station
MU-TSDT02	Serial Device Interface—Toledo Weigh Cell
MU-TSIM12	Serial Interface—Modbus EIA-232
MU-TSTX03	Smart Transmitter Interface with compression term
MU-TSTX13	Smart Transmitter Interface with compression term
MU-TSTX53	Smart Transmitter Interface with screw terminals

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Nonconformally coated FTAs, continued

Table 7-4 Field Termination Assemblies—Nonconformally Coated, Continued

FTA Type	Model Number	Non-CE Compliant Part Number	CE Compliant Part Number
SDI—Toledo	MU-TSDT02	51303932-201	N/A
SDI—Manual/Auto	MU-TSDM02	51303932-202	N/A
SDI—Toledo	MU-TSDU02	51303932-203	N/A
SI—Modbus	MU-TSIM12	51303932-401	51303932-426
SI—Allen-Bradley	MU-TSIA12	51303932-403	51303932-428
Power Adapter	MU-TLPA02	51304467-100	51309204-125
DI Power Dist Assembly	MU-TDPR02	51304425-100	51304425-125
GI Power Dist Assembly	MU-GPRD02	51304644-100	51304644-125
GI HLAI/STI	MU-GAIH13	51304718-100	51304718-125
GI HLAI/STI	MU-GAIH14	51304730-100	51304730-125
GI HLAI/STI	MU-GAIH83	51304718-300	51304718-325
GI HLAI/STI	MU-GAIH84	51304730-300	51304730-325
GI HLAI	MU-GAIH12	51304636-100	N/A
GI HLAI	MU-GAIH22	51304748-100	51304748-125
GI HLAI	MU-GAIH82	51304636-300	N/A
GI HLAI	MU-GAIH92	51304748-300	51304748-325
GI AO	MU-GAOX02	51304638-100	51304638-125
GI AO	MU-GAOX12	51304638-500	51304638-525
GI AO	MU-GAOX72	51304638-300	51304638-325
GI AO	MU-GAOX82	51304638-700	51304638-725
GI 24 Vdc DI	MU-GDID12	51304640-100	51304640-125
GI 24 Vdc DI	MU-GDID13	51304728-100	51304728-125
GI 24 Vdc DI	MU-GDID82	51304640-300	51304640-325
GI 24 Vdc DI	MU-GDID83	51304728-300	51304728-325

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Section 13 – Serial Device Interface Planning

13.1 Overview

Section contents

The topics covered in this section are:

13.2 Serial Device Interface Configurations

Overview

There are three models of the Serial Device Interface (SDI) FTA, MU-TSDT02, MU-TSDM02, and MU-TSDU02. All the FTA models interface with the model MU-PSDX02 Serial Device Interface IOP. One or two Serial Device Interface FTAs can communicate with a single model MU-PSDX02 Serial Device Interface IOP through the model MU-TLPA02 Power Adapter.

FTA plug-in module determines application

All models of the Serial Device Interface use the same Serial Device Interface FTA assembly. The firmware that is resident in the FTA's plug-in module, M1, determines the selected serial communications interface type (EIA-232 or EIA-422/485) and the interface application. The FTA is assigned a unique FTA model number depending upon the user's application.

EIA-232 and EIA-422/485 interfaces

The Serial Device Interface FTA has both EIA-232 (RS-232) and EIA-422/485 (RS-422/485) asynchronous serial communications interfaces, one of which is active depending on the FTA model number, using either a DB-25 or a 5-terminal compression terminal connector, respectively. The model MU-TSDT02 FTA supports the EIA-232 interface, and the model MU-TSDM02 and MU-TSDU02 FTAs support the EIA-422/485 interface.

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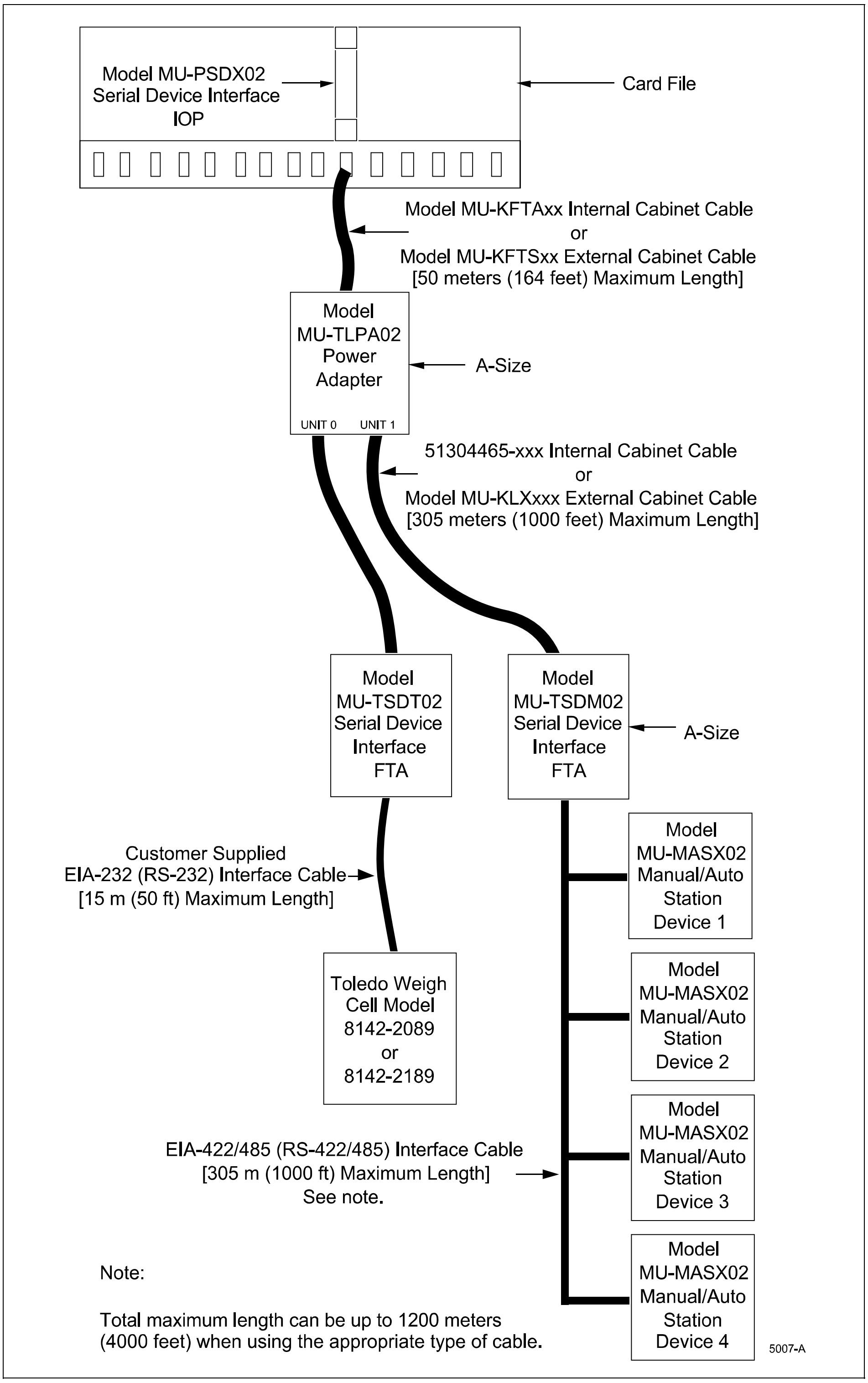
13.2 Serial Device Interface Configurations, Continued

SDI interface configuration

Figure 13-1 illustrates a typical Serial Device Interface configuration.

Figure 13-1 Serial Device Interface Interconnections



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13.2 Serial Device Interface Configurations, Continued

EIA-232 cable length limitation

The EIA-232 cable is limited to a distance of 15 meters (50 feet). The cable must be supplied by the user and terminate in a DB-25 connector.

ATTENTION

ATTENTION—The EIA-232 interface is a point-to-point interface in which only one serial device can be connected. The EIA-422/485 interface can be configured as a multidrop interface on which up to 15 serial devices can be connected.

13.3 Serial Device Interface IOP Placement

Locating the IOP

The Serial Device Interface IOP can be installed in any available card file slot.

13.4 Power Adapter Placement

Install within 50 meters of IOP

The Power Adapter can be installed on any available FTA Mounting Channel that is within 50 meters (164 feet) of the Serial Device Interface IOP.

Power Adapter size

The Power Adapter has the same dimensions as an A-size (6 inches) FTA.

13.5 IOP to Power Adapter Cabling

Non-CE-Compliant IOP to Power Adapter cabling

The interconnection between the IOP and the Power Adapter is provided by a model MU-KFTAxx cable. The cable is used in non-CE Compliant applications. The suffix “xx” in the model number represents the length of the cable in meters. The cable is available in 12 lengths, up to 50 meters (164 feet). See the *High-Performance Process Manager Service* manual for the exact lengths that are available.

CE-Compliant IOP to Power Adapter cabling

Presently, the Serial Device Interface FTA cannot be used for CE Compliant application.

13.6 Serial Device Interface FTA Placement

Install within 305 meters of Power Adapter

The Serial Device Interface FTA can be installed in the same Process Manager or Advanced Process Manager cabinet as the Serial Device Interface IOP, or remotely, up to 305 meters (1000 feet) from the Power Adapter.

FTA size

The FTA is an A-size (6 inches) FTA and can be installed on an FTA Mounting Channel.

13.7 FTA to Power Adapter Cabling

FTA to Power Adapter cable

The cable connecting the Serial Device Interface FTA to the Power Adapter is a shielded, twisted-pair cable that is supplied by Honeywell. Two types of cables are available, an internal cabinet cable, 51304465-xxx, and an external cabinet cable, model MU-KLXxxx.

The suffix "xxx" represents the length of the cable in centimeters for the 51304465-xxx cable. Five lengths are available, 30, 66, 100, 200, and 300 centimeters.

The suffix "xxx" represents the length of the cable in meters for the model MU-KLXxxx cable. Three lengths are available, 76, 152, and 305 meters.

Internal cabinet or cabinet complex cabling

When the Serial Device Interface FTA is installed in the same cabinet, or cabinet complex, as the Power Adapter, a 51304465-xxx cable with stripped wire ends is used for the interconnection. See the *High-Performance Process Manager Service* manual for available cable lengths.

The cable has two individually shielded, twisted-pair wires. The shields must be connected to ground at the Power Adapter end only. The wire connections are made by using the compression terminals in a 6-pin connector at the Power Adapter end and in a 4-pin or 6-pin connector at the Serial Device Interface FTA end.

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External cabinet cabling

When the Serial Device Interface FTA is installed remotely from the Power Adapter, a model MU-KLXxxx cable is used for the interconnection. See the *High-Performance Process Manager Service* manual for available cable lengths.

The cable has a braided shield with twisted-pair wires. The shields must be connected to ground at both Power Adapter end and the FTA end of the cable. The wire connections are made by using the compression terminals in a 6-pin connector at the Power Adapter end and in a 4-pin or 6-pin connector at the Serial Device Interface FTA end.

References

For additional Serial Device Interface IOP and FTA information, see the *Process Manager I/O Installation* or *High-Performance Process Manager Service* manual.

Power Adapter to FTA cable specifications

The 51304465-xxx (internal) and model MU-KLXxxx (external) cables have the following specifications.

51304465-xxxx cable (Internal cabinet use)

- Manufacturer Type—Belden 9406
- Configuration—Shielded double pair
- Flame Resistance Conformity—CSA FT4
- CSA Type—CMG
- NEC Type—CMG

Model MU-KLXxxx cable (External cabinet use)

- Manufacturer Type—Belden 83654
- Configuration—Shielded double pair (TEFLON jacket)
- Flame Resistance Conformity—CSA FT4/FT6 and UL910
- CSA Type—CMP
- NEC Type—CMP
- Temperature Rating: -70°C to +200°C

13.8 FTA Field Cabling

FTA to field device cable specifications

The cables that follow are recommended as EIA-422/485 FTA to field device interface cables and have the following specifications. Honeywell offers the model MU-KSXxxx cable (three lengths—76, 152, and 305 meters, the suffix “xxx” represents the length of the cable in meters). The other two recommended cable types can be purchased directly from the manufacturer.

All the cables are available in lengths up to 305 meters (1000 feet). The total combined length between the FTA and the field devices can be 1200 meters (4000 feet) for the Model MU-KSXxxx and Belden 9182 cables, and 305 meters (1000 feet) for the Belden 9271 cable.

Model MU-KSXxxx cable

- Manufacturer Type—Belden model 89182
- Configuration—Shielded single pair (TEFLON jacket)
- Flame Resistance Conformity—CSA FT4/FT6
- CSA Type—CMP
- NEC Type—CL2P and CMP (Plenum)
- Temperature Rating: -70°C to +200°C

Belden 9182 cable

- Manufacturer Type—Belden model 9182
- Cable Configuration—Shielded single pair
- Flame Retardant
- Flame Resistance Conformity—CSA FT1
- CSA Type—CMX
- NEC Type—CL2X and CMX
- Temperature Rating: -20°C to +60°C

Belden 9271 cable

- Manufacturer Type—Belden model 9271
- Cable Configuration—Shielded single pair
- Flame Retardant
- Flame Resistance Conformity—CSA FT1
- CSA Type—CM
- NEC Type—CM
- Temperature Rating: -40°C to +80°C

13.9 Serial Device Interface FTA Models

Model MU-TSDT02	The model MU-TSDT02 Serial Device Interface FTA accommodates the model 8142-2084 or 8142-2184 Toledo Weigh Cell device, manufactured by Toledo Scale Inc., through its EIA-232 (RS-232) interface.
Model MU-TSDM02	The model MU-TSDM02 Serial Device Interface FTA accommodates up to four model MU-MASX02 Manual/Auto Station devices, manufactured by Honeywell Inc., through its EIA-422/485 (RS-422/485) interface.
Model MU-TSDU02	The model MU-TSDU02 Serial Device Interface FTA accommodates up to four model MU-MASX02 UDC 6000 devices, manufactured by Honeywell Inc., through its EIA-422/485 (RS-422/485) interface.

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