

# Guide To Cabling Standards

## Introduction

This booklet is intended as a general guide to the various connection standards used by the major hot runner control system manufacturers.

The connection details for each standard are provided along with the Harting and Contact part numbers. Whilst part numbers have been provided for the hoods, these are for the type of hood defined by the manufacturers standard e.g. top entry, single lever. A table giving all the various part numbers for other types of hoods is provided at the back of this booklet.

### NOTES:

- Whilst Fast Heat Limited have tried to ensure that the information contained in this document is as up to date as possible, the information is for guidance only and we cannot be held responsible for any changes made by the manufacturers mentioned, regional differences in cabling standards applied by manufacturers, nor to changes made by end users to meet their own equipment requirements.
- European CE regulations dictate that from January 2001 the PG standard for cable glands will be phased out in favour of a gland system using metric dimensions. This booklet is currently compiled using the PG standard.
- Whilst it is possible to use parts from different manufacturers to assemble a connector e.g. panel mount base and insert, it is recommended that, due to differences in manufacture, all parts for any given connector are from the same manufacturer.
- In the assembly of connectors, it is recommended that the manufacturers approved tools are always used.
- All terminal numbering is as seen from the cable wiring side of the connector.

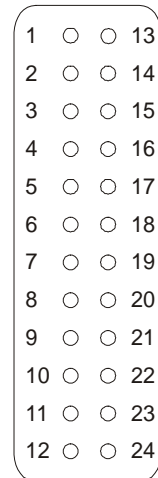
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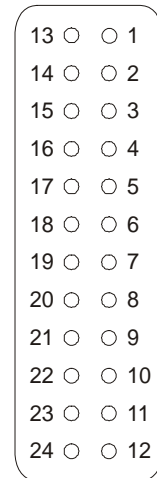
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## Fast Heat 9/12 Zone

Heater	Zone	Live	Return
	1	1	13
	2	2	14
	3	3	15
	4	4	16
	5	5	17
	6	6	18
	7	7	19
	8	8	20
	9	9	21
	10	10	22
	11	11	23
	12	12	24



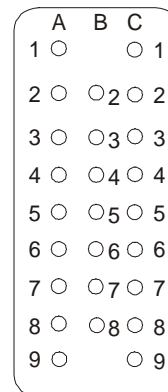
Female



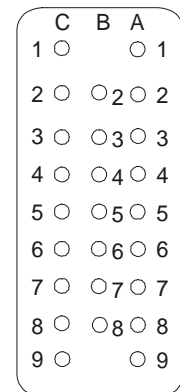
Male

Part Number	Harting	Contact
Male Insert	09330242601	10196000
Female Insert	09330242701	10197000
Hood	09300240440	10121900

Thermocouple	Zone	+ ve	-ve
	1	A1	C1
	2	A2	C2
	3	A3	C3
	4	A4	C4
	5	A5	C5
	6	A6	C6
	7	A7	C7
	8	A8	C8
	9	A9	C9
	10	B2	B3
	11	B4	B5
	12	B6	B7



Female



Male

Part Number	Harting	Contact
Male Insert	09210253001	11260000
Female Insert	09210253101	11261000
Hood	09200160441	10565300

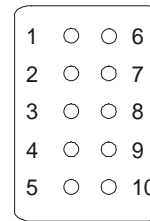
Part Number	Harting	Contact
Male Pins	09150006101	11236100
Female Pins	09150006201	11221000

# Guide To Cabling Standards

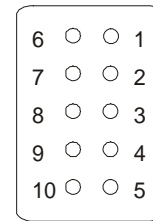
## Fast Heat 5 Zone

Heater	Zone	Live	Return
	1	1	6
	2	2	7
	3	3	8
	4	4	9
	5	5	10

Part Number	Harting	Contact
Male Insert	09330102601	10192000
Female Insert	09330102701	10193000
Hood	09300240440	10040700



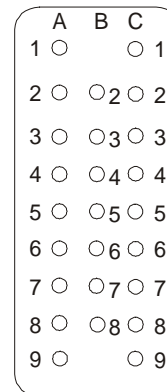
Female



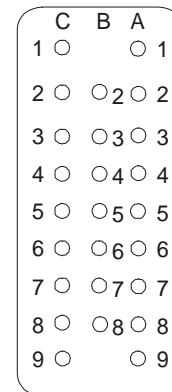
Male

Thermocouple	Zone	+ ve	-ve
	1	A1	C1
	2	A2	C2
	3	A3	C3
	4	A4	C4
	5	A5	C5

Part Number	Harting	Contact
Male Insert	09210253001	11260000
Female Insert	09210253101	11261000
Hood	09200160441	10565300



Female



Male

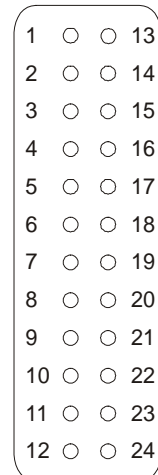
Part Number	Harting	Contact
Male Pins	09150006101	11236100
Female Pins	09150006201	11221000

# Guide To Cabling Standards

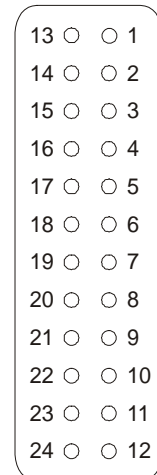
## Fast Heat 9/12 Zone (Optional)

Heater	Zone	Live	Return
	1	1	13
	2	2	14
	3	3	15
	4	4	16
	5	5	17
	6	6	18
	7	7	19
	8	8	20
	9	9	21
	10	10	22
	11	11	23
	12	12	24

Part Number	Harting	Contact
Male Insert	09330242601	10196000
Female Insert	09330242701	10197000
Hood	09300240440	10121900



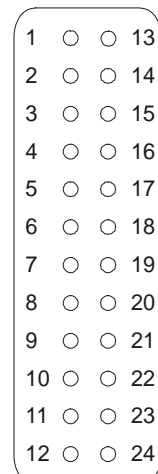
Female



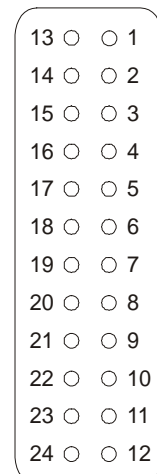
Male

Thermocouple	Zone	+ve	-ve
	1	1	13
	2	2	14
	3	3	15
	4	4	16
	5	5	17
	6	6	18
	7	7	19
	8	8	20
	9	9	21
	10	10	22
	11	11	23
	12	12	24

Part Number	Harting	Contact
Male Insert	09330242601	10196000
Female Insert	09330242701	10197000
Hood	09300240440	10121900



Female



Male

This is an optional alternative to the standard Fast Heat format, that uses the 24 pin screw terminal insert instead of the crimp insert. Matching Junction Boxes are available.

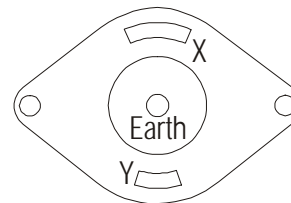
# Guide To Cabling Standards

## Fast Heat Single Zone

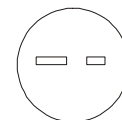
Heater	Zone	Live	Return
	1	X	Y

Thermocouple	Zone	Positive	Negative
	1	+ve	-ve

Part Number	Fast Heat
Thermocouple Plug (J)	HA010024
Thermocouple Socket (J)	H010029-Panel Mount
Hubbell Plug	774-850
Hubbell Socket	774-870



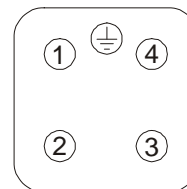
Power



-Ve +Ve  
Thermocouple

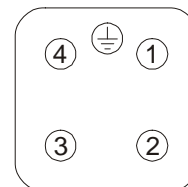
## Fast Heat Dual Zone

T/C & Heater Wiring	Pin	Use
	1	T/C +ve (PRT 100)
	2	T/C -ve (PRT100)
	3	Heater
	4	Return
	5	Earth



Female

Alarm Wiring	Pin	Use
	1	Common
	2	Normally Open
	3	Not Used
	4	Not Used



Male

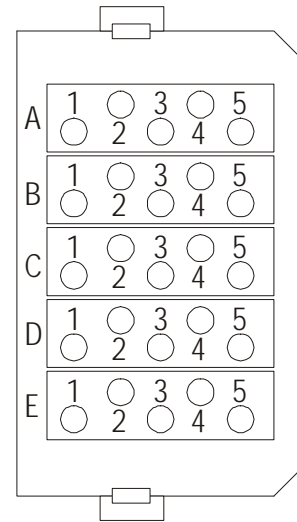
Part Number	Harting	Contact
Male Insert	09200042611	10431000
Female Insert	09200042711	10432000
Hood / Gland	09200031330 / 09000005013	10426500

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## DME 8/12 Zone (New)

Heater	Zone	Live	Return
	1	A1	A2
	2	A3	A4
	3	B1	B2
	4	B3	B4
	5	A5	B5
	6	C1	C2
	7	C3	C4
	8	D1	D2
	9	D3	D4
	10	C5	D5
	11	E1	E2
	12	E3	E4

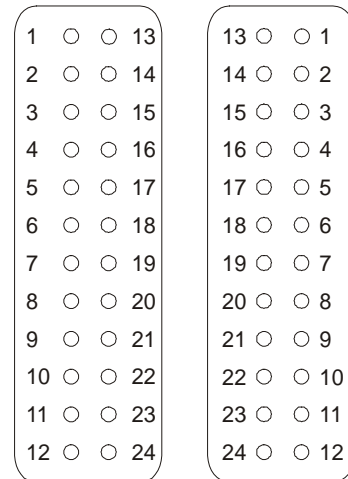
Part Number	Harting	Contact
Male Insert	N/A	10382200
Female Insert	N/A	10382300
Hood	09300160440	10080900



Part Number	Harting	Contact
Male Pins	N/A	11213400
Female Pins	N/A	11218400
Male Frame	N/A	10381400
Female Frame	N/A	10381500

Thermocouple	Zone	+ ve	-ve
	1	1	13
	2	2	14
	3	3	15
	4	4	16
	5	5	17
	6	6	18
	7	7	19
	8	8	20
	9	9	21
	10	10	22
	11	11	23
	12	12	24

Part Number	Harting	Contact
Male Insert	09330242601	10196000
Female Insert	09330242701	10197000
Hood	09300240440	10121900



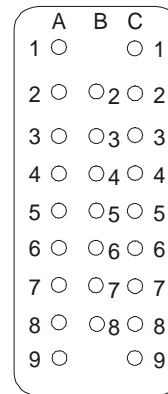
Female

Male

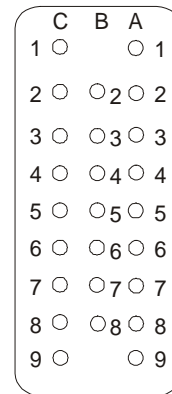
# Guide To Cabling Standards

## DME 12 Zone (Old)

Heater	Zone	Live	Return
	1	A1	A2
	2	A3	A4
	3	A5	A6
	4	A7	A8
	5	B2	B3
	6	B4	B5
	7	B6	B7
	8	C1	C2
	9	C3	C4
	10	C5	C6
	11	C7	C8
	12	A9	C9



Male

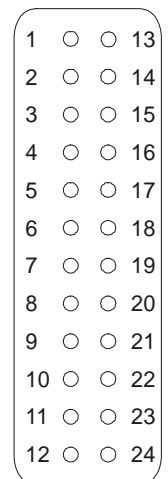


Female

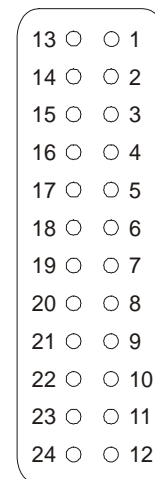
Part Number	Harting	Contact
Male Insert	09210253001	11260000
Female Insert	09210253101	11261000
Hood	09200160441	10565300

Part Number	Harting	Contact
Male Pins	09150006101	11236100
Female Pins	09150006201	11221000

Thermocouple	Zone	+ ve	-ve
	1	1	13
	2	2	14
	3	3	15
	4	4	16
	5	5	17
	6	6	18
	7	7	19
	8	8	20
	9	9	21
	10	10	22
	11	11	23
	12	12	24



Female



Male

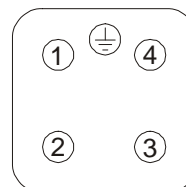
Part Number	Harting	Contact
Male Insert	09330242601	1019600
Female Insert	09330242701	1019700
Hood	09300240440	10121900



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## DME Single / Dual Zone

T/C & Heater Wiring	Pin	Use
	1	T/C +ve
	2	T/C -ve
	3	Heater
	4	Return
	5	Earth

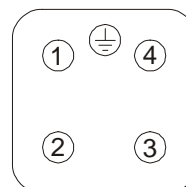


Female

Part Number	Harting	Contact
Male Insert	09200042611	10431000
Female Insert	09200042711	10432000
Hood / Gland	09200031330 / 09000005013	10426500

## Athena Single Zone

T/C & Heater Wiring	Pin	Use
	1	T/C +ve
	2	Heater
	3	T/C -ve
	4	Return
	5	Earth



Female

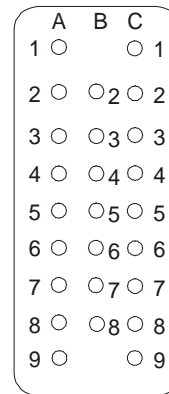
Part Number	Harting	Contact
Male Insert	09200042611	10431000
Female Insert	09200042711	10432000
Hood / Gland	09200031330 / 09000005013	10426500

Note: As standard, the single zone wiring of Athena controllers is NOT the same as that of DME single zone controllers. However, some Athena single zone controllers have been modified to be compatible. Always check your controller before wiring any cables.

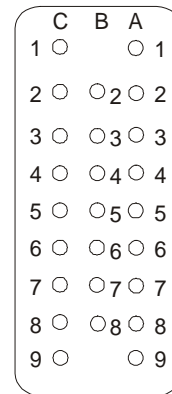
# Guide To Cabling Standards

## Athena 8/12 Zone

Heater	Zone	Live	Return
	1	A1	A2
	2	A3	A4
	3	A5	A6
	4	A7	A8
	5	B2	B3
	6	B4	B5
	7	B6	B7
	8	C1	C2
	9	C3	C4
	10	C5	C6
	11	C7	C8
	12	A9	C9



Male

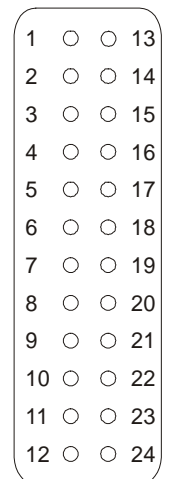


Female

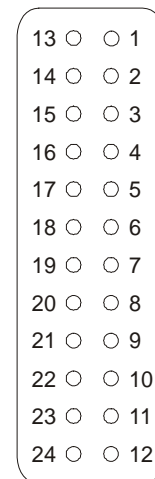
Part Number	Harting	Contact
Male Insert	09210253001	11260000
Female Insert	09210253101	11261000
Hood	09200160441	10565300

Part Number	Harting	Contact
Male Pins	09150006101	11236100
Female Pins	09150006201	11221000

Thermocouple	Zone	+ ve	-ve
	1	1	13
	2	2	14
	3	3	15
	4	4	16
	5	5	17
	6	6	18
	7	7	19
	8	8	20
	9	9	21
	10	10	22
	11	11	23
	12	12	24



Female



Male

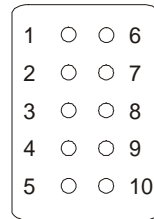
Part Number	Harting	Contact
Male Insert	09330242601	1019600
Female Insert	09330242701	1019700
Hood	09300240440	10121900

# Guide To Cabling Standards

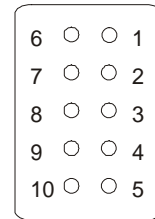
Thermocouple & Heater Wiring	Zone	Live	Return
	1 T/C	1 (+ve)	2 (-ve)
	1 Heater	3 (Live)	4 (Return)
	2 T/C	6 (+ve)	7 (-ve)
	2 Heater	8 (Live)	9 (Return)

Part Number	Harting	Contact
Male Insert	09200102612	10440100
Female Insert	09200102812	10441100
Hood	09200100441	10446500

## DMS (1 / 2 Zone)



Female



Male

# Guide To Cabling Standards

## EWIKON 8/12Zone

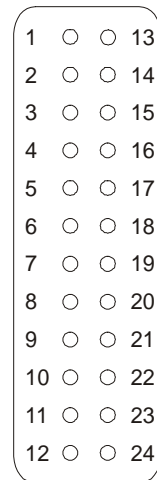
Heater	Zone	Live	Return
	1	1	13
	2	2	14
	3	3	15
	4	4	16
	5	5	17
	6	6	18
	7	7	19
	8	8	20
	9	9	21
	10	10	22
	11	11	23
	12	12	24

Part Number	Harting	Contact
Male Insert	09330242601	10196000
Female Insert	09330242701	10197000
Hood	09300240440	10121900

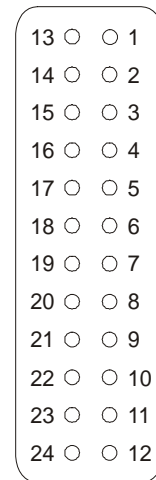
Heater	Zone	+ve	-ve
	1	1	9
	2	2	10
	3	3	11
	4	4	12
	5	5	13
	6	6	14
	7	7	15
	8	8	16

Second Insert			
	9	1	9
	10	2	10
	11	3	11
	12	4	12

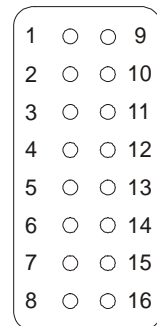
Part Number	Harting	Contact
Male Insert	09330162601	10194000
Female Insert	09330162701	10195000



Female



Male



Female



Male

Note: 12 Zone repeats the 8 Zone wiring using another 16 pin insert. The panel mount base and hood are all dual lever. With 12 Zone cables, there are 2 x 16 pin inserts side by side. The polarity on the panel mount base fitted to the tool or junction box is female insert.

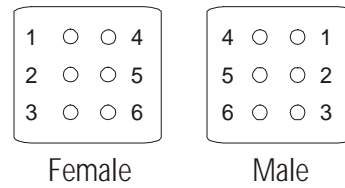
# Guide To Cabling Standards

Thermocouple & Heater Wiring	Zone	Live	Return
	1 T/C	4 (+ve)	6 (-ve)
	1 Heater	1 (Heater)	3 (Return)

Part Number	Harting	Contact
Female Insert	09330062701	10191000
Male Insert	09330062601	10190000
Hood	09300060442	10020200

## Hasco (1 Zone)

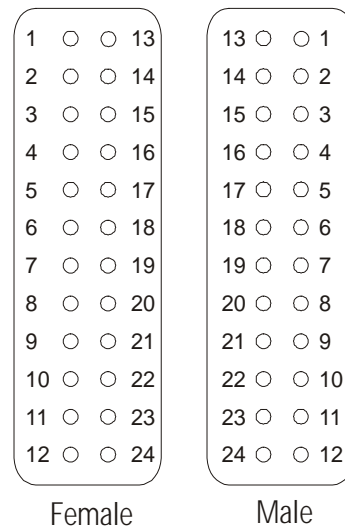


Thermocouple & Heater Wiring	Zone	Live	Return
	1 T/C	13 (+ve)	14 (-ve)
	1 Heater	1 (Heater)	2 (Return)
	2 T/C	15 (+ve)	16 (-ve)
	2 Heater	3 (Heater)	4 (Return)
	3 T/C	17 (+ve)	18 (-ve)
	3 Heater	5 (Heater)	6 (Return)
	4 T/C	19 (+ve)	20 (-ve)
	4 Heater	7 (Heater)	8 (Return)
	5 T/C	21 (+ve)	22 (-ve)
	5 Heater	9 (Heater)	10 (Return)
	6 T/C	23 (+ve)	24 (-ve)
	6 Heater	11 (Heater)	12 (Return)

Part Number	Harting	Contact
Female Insert	09330242601	10196000
Male Insert	09330242701	10197000
Hood	09300240440	10121900

## Hasco (6 Zone)

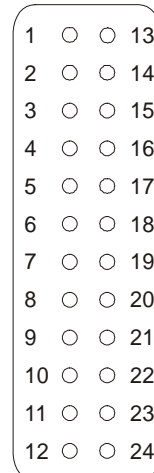


Note: The hoods and panel mount bases are dual lever and the polarity of the panel mount base fitted to the controller is female. The polarity of the panel mount base fitted to the tool or junction box is male.

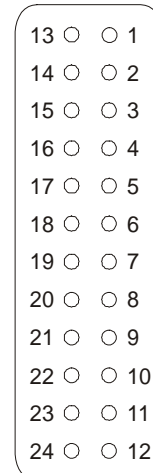
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## MoldMasters

Heater	Zone	Live	Return
	1	1	13
	2	2	14
	3	3	15
	4	4	16
	5	5	17
	6	6	18
	7	7	19
	8	8	20
	9	9	21
	10	10	22
	11	11	23
	12	12	24



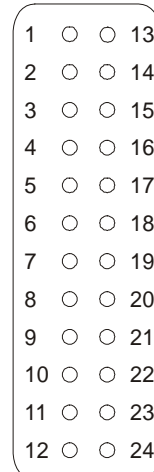
Female



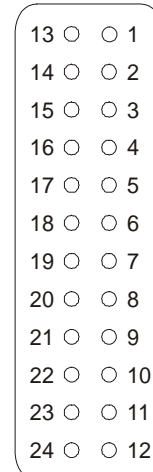
Male

Part Number	Harting	Contact
Male Insert	09330242601	10196000
Female Insert	09330242701	10197000
Hood	09300240440	10121900

Thermocouple	Zone	+ ve	-ve
	1	1	13
	2	2	14
	3	3	15
	4	4	16
	5	5	17
	6	6	18
	7	7	19
	8	8	20
	9	9	21
	10	10	22
	11	11	23
	12	12	24



Female



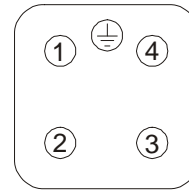
Male

Part Number	Harting	Contact
Male Insert	09330242601	10196000
Female Insert	09330242701	10197000
Hood	09300240440	10121900

# Guide To Cabling Standards

## PMS (1 Zone)

Thermocouple & Heater Wiring	Pin	Use
	1	T/C +ve
	2	T/C -ve
	3	Heater
	4	Return
	5	Earth

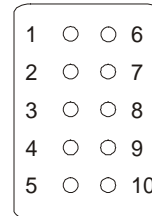


Female

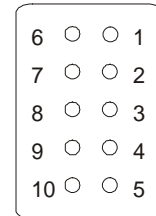
Part Number	Harting	Contact
Male Insert	09200042611	10431000
Female Insert	09200042711	10432000
Hood / Gland	09200031330 / 09000005013	10426500

## PMS (1 / 2 Zone)

Thermocouple & Heater Wiring	Zone	Live	Return
1 T/C		1 (+ve)	2 (-ve)
1 Heater		3 (Live)	4 (Return)
2 T/C		6 (+ve)	7 (-ve)
2 Heater		8 (Live)	9 (Return)



Female



Male

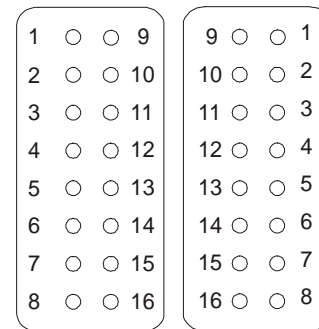
Part Number	Harting	Contact
Male Insert	09200102612	10440100
Female Insert	09200102812	10441100
Hood	09200100441	10446500

# Guide To Cabling Standards

## PMS (4/8/12 Zone)

Thermocouple & Heater Wiring	Zone	Live	Return
	1 T/C	1 (+ve)	2 (-ve)
	1 Heater	3 (Live)	4 (Return)
	2 T/C	5 (+ve)	6 (-ve)
	2 Heater	7 (Live)	8 (Return)
	3 T/C	9 (+ve)	10 (-ve)
	3 Heater	11 (Live)	12 (Return)
	4 T/C	13 (+ve)	14 (-ve)
	4 Heater	15 (Live)	16 (Return)

Part Number	Harting	Contact
Male Insert	09200162612	10532000
Female Insert	09200162812	10533000
Hood	09200160441	10565300



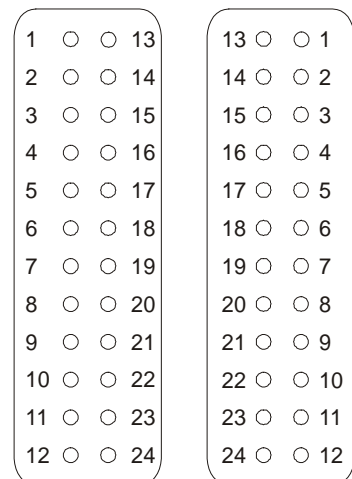
Female

Male

## Spectral (6 Zone)

Thermocouple & Heater Wiring	Zone	Live	Return
	1 T/C	1 (-ve)	2 (+ve)
	1 Heater	3 (Heater)	4 (Return)
	2 T/C	5 (-ve)	6 (+ve)
	2 Heater	7 (Heater)	8 (Return)
	3 T/C	9 (-ve)	10 (+ve)
	3 Heater	11 (Heater)	12 (Return)
	4 T/C	13 (-ve)	14 (+ve)
	4 Heater	15 (Heater)	16 (Return)
	5 T/C	17 (-ve)	18 (+ve)
	5 Heater	19 (Heater)	20 (Return)
	6 T/C	21 (-ve)	22 (+ve)
	6 Heater	23 (Heater)	24 (Return)

Part Number	Harting	Contact
Male Insert	09330242601	10196000
Female Insert	09330242701	10197000
Hood	09300240440	10121900



Female

Male



## Harting / Contact Part Nos

Description	Harting Part Number	Contact Part Number
HBE-6 Panel Mount Base, Single Lever	09300060301	10003000
HBE-6 Hood, Top Entry, PG21 Gland, Single Lever	09300060442	10020200
HBE-6 Male Insert	09330062601	10190000
HBE-6 Female Insert	09330062701	10191000
HBE-10 Panel Mount Base, Single Lever	09300100305	100032900
HBE-10 Hood, Top Entry, PG21 Gland, Single Lever	09300100442	10040700
HBE-24 Panel Mount Base, Dual Lever	09300240301	10102000
HBE-24 Panel Mount Base, Single Lever	09300240307	10102900
HBE-24 Hood, Top Entry, PG21 Gland, Dual Lever	09300240420	10121000
HBE-24 Hood, Top Entry, PG21 Gland, Single Lever	09300240440	10121900
HBE-10, Male Insert	09330102601	10192000
HBE-10, Female Insert	09330102701	10193000
HBE-16, Male Insert	09330162601	10194000
HBE-16, Female Insert	09330162701	10195000
HBE-24, Male Insert	09330242601	10196000
HBE-24, Female Insert	09330242701	10197000
HDC-5, Male Module Frame	N/A	10381400
HDC-5, Female Module Frame	N/A	10381500
HDC-5, Male Module	N/A	10382200
HDC-5, Female Module	N/A	10382300
HA-10, Panel Mount Base, Single Lever	09200100301	10422000
HA-3, Hood, Top Entry, PG11 Gland, Single Lever	09200031440	10426500
HA-4, Male Insert	09200042611	10431000
HA-4, Female Insert	09200042711	10432000
HA-10, Male Insert	09200102612	10440100
HA-10, Female Insert	09200102812	10441100
HA-10, Hood, Top Entry, PG21 Gland, Single Lever	09200100441	10446500
HA-16, Panel Mount Base, Single Lever	09200160301	10462000
HA-16, Male Insert	09200162612	10532000
HA-16, Female Insert	09200162812	10533000
HA-16, Hood, Top Entry, PG21 Gland, Single Lever	09200160441	10565300

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## Harting / Contact Part Nos

Description	Harting Part Number	Contact Part Number
HDC-5, Module Pins	N/A	11213400
HDC-5, Module Sockets	N/A	11218400
HA, Crimp Pins	09150006102	11221000
HA, Crimp Sockets	09150006202	11236100
HD-25, Female Insert (Crimps)	09210253001	11260000
HD-25, Male Insert (Crimps)	09210253101	11261000
PG21 Cable Gland	N/A	12995500

## Wiring Recommendations

- Ensure that cable insulators are undamaged.
- Ensure that all cables are unwound and not kinked.
- Ensure that all connections are sound with no inner cables or conductors visible.
- Ensure that all conductors are of sufficient current rating for the applied load.
- Ensure that all connectors are of sufficient current rating for the applied load.
- Always protect the equipment with the correctly rated fuses.
- Always isolate equipment before removing cables from sockets.
- Always use the correctly specified tools when crimping connectors.
- Always use the correct cable gland to restrain cables.
- Always use the correct compensating cable when constructing thermocouple cables.
- Cables can be damaged and due care should be taken to avoid situations in which they could be crushed, driven over, over forced or bent beyond their recommended tolerance.
- Electricity can kill. Never take electricity itself or associated equipment and appliances for granted.