

JTL APPLICATION NOTE

WAITROSE CONDENSER SPECIFICATION - SINGLE CONDENSERS WITH AND WITHOUT SPLIT CIRCUIT CONTROL

The following condenser arrangements are based on the Waitrose specification but with increased and/or revised stages to give improved capacity control. The outputs are connected to interface type IF11 (legacy type IF1/7) as follows

| Condenser fan | First interface input/output | Additional interface input/output |
|----------------------|-------------------------------------|--|
| 1 | 1 | |
| 2 | 2 | |
| 3 | 3 | |
| 4 | 4 | |
| 5 | 5 | |
| 6 | 6 | |
| 7 | | 1 |
| 8 | | 2 |
| 9 | | 3 |
| 10 | | 4 |
| 11 | | 5 |
| 12 | | 6 |
| Split circuit | 7 | |

Note inputs must follow outputs. Normally this requires the fan run status to be connected through a fan fault indication such as an overload relay. If no input is present when an output is indicated as required by the JTL controller a fan fault alarm is given after a short delay.

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12 Fans double bank single condenser

Condenser arrangement

| | | | | | |
|---|---|---|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 |

| | | | | | | | | | | |
|------------|----|-----|-----|-----|-----|-----|-----|-----|------|------|
| Stages | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Block % | 50 | 50 | 50 | 50 | 100 | 100 | 100 | 100 | 100 | 100 |
| Outputs | 0 | 1-2 | 1-4 | 1-6 | 1-2 | 1-4 | 1-6 | 1-8 | 1-10 | 1-12 |
| Capacity % | 12 | 19 | * | 31 | * | * | * | 77 | * | 100 |

Notes: Item 394 (sequence) set to 3 (CS-b)
Item 390 (stages) set to 9
Capacity from Waitrose specification

10 Fans double bank single condenser

Condenser arrangement

| | | | | |
|---|---|---|---|----|
| 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 |

| | | | | | | | | | | | | | |
|------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Stages | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Block % | 50 | 50 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Outputs | 0 | 1-2 | 1-3 | 1 | 1-2 | 1-3 | 1-4 | 1-5 | 1-6 | 1-7 | 1-8 | 1-9 | 1-10 |
| Capacity % | 12 | 19 | * | 31 | * | 48 | * | 63 | 71 | * | 83 | 91 | 100 |

Notes: Item 394 (sequence) set to 3 (CS-b)
Item 390 (stages) set to 12
Capacity from Waitrose specification

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8 Fans double bank single condenser

Condenser arrangement

| | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |

| | | | | | | | | | | | |
|------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Stages | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Block % | 50 | 50 | 50 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Outputs | 0 | 1-2 | 1-3 | 1-4 | 1-2 | 1-3 | 1-4 | 1-5 | 1-6 | 1-7 | 1-8 |
| Capacity % | 12 | 19 | * | 31 | 43 | 52 | * | 71 | 83 | 91 | 100 |

Notes: Item 394 (sequence) set to 3 (CS-b)
Item 390 (stages) set to 10
Capacity from Waitrose specification

6 Fans double bank single condenser

Condenser arrangement

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |

| | | | | | | | | | | |
|------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Stages | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Block % | 50 | 50 | 50 | 50 | 100 | 100 | 100 | 100 | 100 | 100 |
| Outputs | 0 | 1 | 1-2 | 1-3 | 1 | 1-2 | 1-3 | 1-4 | 1-5 | 1-6 |
| Capacity % | 12 | 19 | * | 31 | 37 | 50 | 63 | 77 | 91 | 100 |

Notes: Item 394 (sequence) set to 3 (CS-b)
Item 390 (stages) set to 9
Capacity from Waitrose specification

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5 Fans single bank single condenser

Condenser arrangement

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

| | | | | | | | | | |
|------------|----|----|-----|-----|-----|-----|-----|-----|-----|
| Stages | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Block % | 50 | 50 | 50 | 50 | 50 | 100 | 100 | 100 | 100 |
| Outputs | 0 | 1 | 1-2 | 1-4 | 1-5 | 1-2 | 1-3 | 1-4 | 1-5 |
| Capacity % | 12 | 19 | 28 | 41 | 50 | 56 | 71 | 83 | 100 |

Notes: Item 394 (sequence) set to 3 (CS-b)
Item 390 (stages) set to 8
Capacity from Waitrose specification

4 Fans single bank single condenser

Condenser arrangement

| | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
|---|---|---|---|

| | | | | | | | | |
|------------|----|----|-----|-----|-----|-----|-----|-----|
| Stages | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Block % | 50 | 50 | 50 | 50 | 50 | 100 | 100 | 100 |
| Outputs | 0 | 1 | 1-2 | 1-3 | 1-4 | 1-2 | 1-3 | 1-4 |
| Capacity % | 12 | 19 | 31 | 41 | 50 | 63 | 83 | 100 |

Notes: Item 394 (sequence) set to 3 (CS-b)
Item 390 (stages) set to 7
Capacity from Waitrose specification

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4 Fans double bank single condenser

Condenser arrangement

| | |
|---|---|
| 1 | 2 |
| 3 | 4 |

| | | | | | | | |
|------------|----|----|-----|-----|-----|-----|-----|
| Stages | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Block % | 50 | 50 | 50 | 100 | 100 | 100 | 100 |
| Outputs | 0 | 1 | 1-2 | 1 | 1-2 | 1-3 | 1-4 |
| Capacity % | 12 | 22 | 31 | 43 | 63 | 83 | 100 |

Notes: Item 394 (sequence) set to 3 (CS-b)
Item 390 (stages) set to 6
Capacity from Waitrose specification

3 Fans single bank single condenser

Condenser arrangement

| | | |
|---|---|---|
| 1 | 2 | 3 |
|---|---|---|

| | | | | |
|------------|-----|-----|-----|-----|
| Stages | 0 | 1 | 2 | 3 |
| Block % | 100 | 100 | 100 | 100 |
| Outputs | 0 | 1 | 1-2 | 1-3 |
| Capacity % | 24 | 50 | 77 | 100 |

Notes: Item 394 (sequence) set to 3 (CS-b)
Item 390 (stages) set to 6
Capacity from Waitrose specification

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WAITROSE CONDENSER SPECIFICATION - SINGLE CONDENSERS WITH AND WITHOUT SPLIT CIRCUIT CONTROL

2 Fans single bank single condenser

Condenser arrangement

| | |
|---|---|
| 1 | 2 |
|---|---|

| | | | |
|------------|-----|-----|-----|
| Stages | 0 | 1 | 2 |
| Block % | 100 | 100 | 100 |
| Outputs | 0 | 1 | 1-2 |
| Capacity % | 24 | 63 | 100 |

Notes: Item 394 (sequence) set to 3 (CS-b)
Item 390 (stages) set to 2
Capacity from Waitrose specification

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