

Control Station and Control Panel: Control Box, DCT series



Flameproof Zone 1 & 2 – 21 & 22

Application

The DCT control boxes are designed for use

- in hazardous areas, zone 1, 2 and zone 21, 22.
- installation in petroleum refineries, chemical plants, storage areas where hazardous substances are handled.
- instrument box with circular or rectangular window.
- containing analogue and digital measuring instruments.
- indicating the electrical function performed.

The circuit breakers are suitable for

- short circuit and overcurrent protection of service entrance, feeder, branch circuit, lighting or motor circuit and serve as a disconnecting mean.

The motor starters are suitable for

- single speed, non-reversing starting and stopping of AC squirrel cage induction motors.
- direct-on-line or star-delta starting method.

The circuit breaker panelboards are suitable for

- control of branch circuit distribution such as lighting circuits, receptacles, pumps or motors.

Specification

- Body, cover : Marine grade copper-free aluminium alloy with polyester powder coated, RAL 7032 (Grey)
- Lid screws : Stainless steel
- Sealing gasket : Silicone -40 °C to +175 °C

Technical Data

| | | |
|---------------------------|---|---|
| Hazardous Area | Gas | Dust |
| Zones | 1 & 2 | 21 & 22 |
| Conforming to ATEX | ⊕ II 2G | ⊕ II 2D |
| Symbol of Protection ATEX | Ex d IIB (Ex db IIB Gb) | Ex tD A21 (Ex tb IIIC Db) |
| Symbol of Protection IEC | | |
| ATEX Certificate | PTB 07 ATEX 1071X (Control enclosure) | |
| T Rating | T6 (Ta 40 °C) T5 (Ta 55 °C) | NA |
| Surface Temp. | NA | T85°C (Ta 40 °C) T100°C (Ta 55 °C) |
| Standard | ATEX Directive 2014/34/EU, std. EN 60079-0:2006, EN 60079-1:2004, EN 61241-0:2006, EN 61241-1:2004 | |
| Ambient Temperature | -20 °C to +55 °C | |
| Index of Protection | IP66 | |
| Entries | NPT or Metric threads | |
| Mounting | Wall type | |

The enclosure with panel mounted operating devices



Motor starter Box



Circuit breaker box



Circuit breaker panelboard



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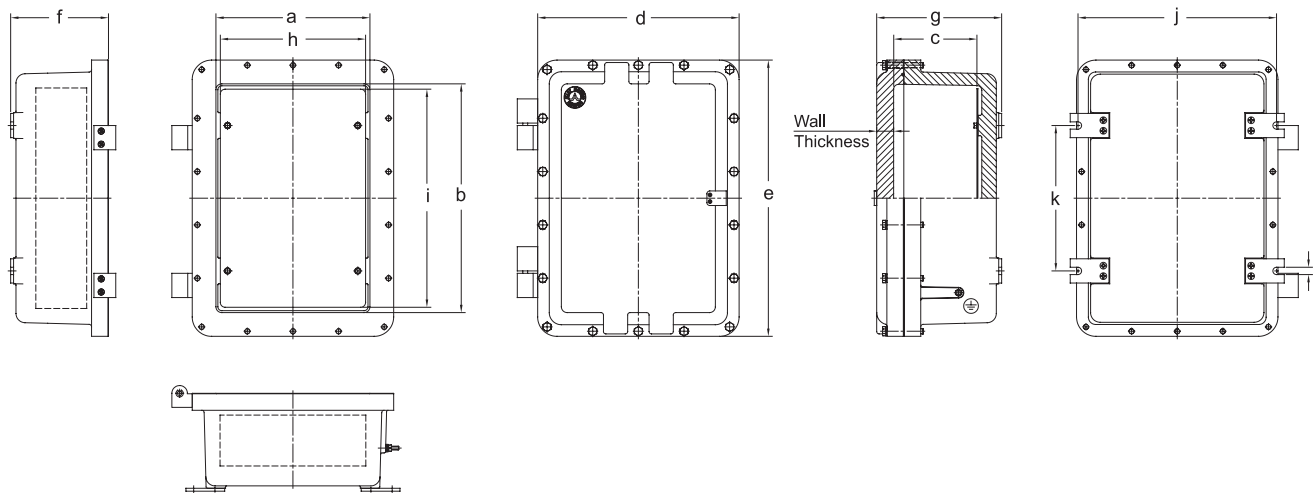
ALLOY



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**Flameproof
Zone 1 & 2 – 21 & 22**

Dimension



D

| Cat. No. | Dimension in mm. | | | | | | | | | | | | Wall Thickness | Volume (dm ³) | Empty Weight (kgs.) |
|------------|------------------|-----|-----|---------|-----|-----|-----|-----------------|-----|----------|-----|-----|----------------|---------------------------|---------------------|
| | Inside | | | Outside | | | | Equipment Plate | | Mounting | | | | | |
| | a | b | c | d | e | f | g | h | i | j | k | l | | | |
| DCT 796 | 111 | 160 | 100 | 183 | 232 | 120 | 145 | 95 | 140 | 148 | 91 | 7.5 | 17 | 1.9 | 6.08 |
| DCT 10126 | 162 | 212 | 110 | 248 | 298 | 127 | 163 | 144 | 195 | 218 | 135 | 10 | 17 | 4.3 | 12.05 |
| DCT 10128 | 168 | 219 | 159 | 254 | 305 | 175 | 211 | 151 | 196 | 218 | 135 | 10 | 17 | 5.0 | 13.90 |
| DCT 9147 | 152 | 261 | 126 | 238 | 347 | 146 | 181 | 139 | 246 | 205 | 133 | 10 | 20 | 5.4 | 13.00 |
| DCT 10158 | 174 | 295 | 139 | 260 | 381 | 156 | 194 | 156 | 277 | 223 | 179 | 10 | 17 | 7.3 | 15.85 |
| DCT 12128 | 217 | 217 | 161 | 303 | 303 | 178 | 216 | 203 | 203 | 269 | 134 | 10 | 20 | 8.3 | 16.60 |
| DCT 12168 | 216 | 321 | 119 | 310 | 415 | 143 | 193 | 195 | 300 | 274 | 197 | 12 | 30 | 8.7 | 30.55 |
| DCT 10208 | 164 | 423 | 133 | 258 | 517 | 159 | 207 | 148 | 403 | 224 | 308 | 12 | 30 | 8.9 | 28.00 |
| DCT 12149 | 217 | 268 | 162 | 311 | 362 | 189 | 236 | 197 | 248 | 270 | 163 | 12 | 30 | 9.4 | 25.00 |
| DCT 14149 | 265 | 265 | 166 | 359 | 359 | 190 | 238 | 247 | 247 | 327 | 163 | 12 | 30 | 10.5 | 29.00 |
| DCT 11199 | 192 | 384 | 158 | 286 | 478 | 185 | 230 | 174 | 364 | 248 | 280 | 12 | 30 | 11.6 | 30.55 |
| DCT 12169 | 216 | 321 | 163 | 310 | 415 | 187 | 237 | 195 | 300 | 270 | 198 | 12 | 30 | 11.7 | 31.00 |
| DCT 121810 | 217 | 373 | 171 | 311 | 467 | 195 | 245 | 197 | 351 | 274 | 239 | 12 | 30 | 13.7 | 33.00 |
| DCT 12219 | 212 | 435 | 164 | 306 | 529 | 190 | 237 | 198 | 420 | 273 | 326 | 12 | 30 | 14.9 | 36.85 |
| DCT 16169 | 312 | 312 | 155 | 410 | 410 | 190 | 239 | 301 | 301 | 376 | 197 | 12 | 35 | 18.0 | 42.65 |
| DCT 12239 | 217 | 496 | 157 | 315 | 594 | 190 | 241 | 202 | 480 | 278 | 363 | 12 | 35 | 19.6 | 46.05 |
| DCT 13269 | 244 | 569 | 157 | 342 | 667 | 187 | 241 | 224 | 546 | 307 | 441 | 12 | 35 | 25.3 | 57.45 |
| DCT 132610 | 244 | 569 | 179 | 342 | 667 | 208 | 262 | 224 | 546 | 307 | 407 | 12 | 35 | 26.0 | 58.82 |
| DCT 162210 | 318 | 472 | 173 | 416 | 570 | 202 | 258 | 300 | 450 | 410 | 300 | 15 | 35 | 27.3 | 60.55 |
| DCT 181812 | 370 | 370 | 222 | 468 | 468 | 251 | 306 | 338 | 338 | 435 | 237 | 12 | 35 | 28.2 | 57.25 |
| DCT 162012 | 315 | 419 | 226 | 413 | 517 | 254 | 309 | 290 | 395 | 376 | 274 | 12 | 35 | 29.6 | 56.85 |
| DCT 15319 | 280 | 680 | 149 | 378 | 778 | 184 | 234 | 250 | 650 | 353 | 503 | 15 | 35 | 30.7 | 65.00 |

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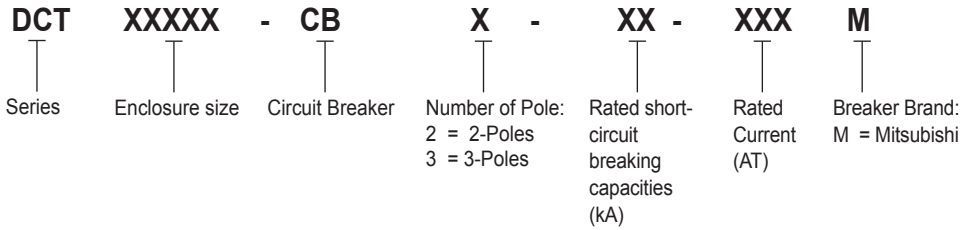


Flameproof
Zone 1 & 2 – 21 & 22

Catalogue Number



Catalogue Number Logic



| Molded-Case Circuit Breaker "Mitsubishi" | | | | | Cat. No. | Molded-Case Circuit Breaker "Mitsubishi" | | | | | Cat. No. |
|--|----------------------|---------------------|------|--|----------------------|--|-----------------|--------------------|----------------|--|----------|
| Model | Frame Size (AF) | Rated Current (AT) | Pole | Rated short-circuit breaking capacities (kA) | | Model | Frame Size (AF) | Rated Current (AT) | Pole | Rated short-circuit breaking capacities (kA) | |
| NF32-SV | 32 | 3 | 2 | 7.5kA. at 230V. | DCT10158-CB27X5-003M | 125 | 16 | 2 | 50kA. at 230V. | DCT10158-CB250-016M | |
| | | | | | DCT10158-CB27X5-004M | | | | | DCT10158-CB250-020M | |
| | | | | | DCT10158-CB27X5-006M | | | | | DCT10158-CB250-032M | |
| | | | | | DCT10158-CB27X5-010M | | | | | DCT10158-CB250-040M | |
| | | | | | DCT10158-CB27X5-016M | | | | | DCT12168-CB250-050M | |
| | | | | | DCT10158-CB27X5-020M | | | | | DCT12168-CB250-063M | |
| | | | | | DCT10158-CB27X5-025M | | | | | DCT12219-CB250-080M | |
| | DCT10158-CB27X5-032M | DCT12219-CB250-100M | | | | | | | | | |
| | NF125-SV | 3 | 3 | 5kA. at 400V. | DCT10158-CB305-003M | 125 | 16 | 3 | 30kA. at 400V. | DCT10158-CB330-016M | |
| | | | | | DCT10158-CB305-004M | | | | | DCT10158-CB330-020M | |
| | | | | | DCT10158-CB305-006M | | | | | DCT10158-CB330-032M | |
| | | | | | DCT10158-CB305-010M | | | | | DCT10158-CB330-040M | |
| | | | | | DCT10158-CB305-016M | | | | | DCT12168-CB330-050M | |
| | | | | | DCT10158-CB305-020M | | | | | DCT12168-CB330-063M | |
| DCT10158-CB305-025M | | | | | DCT12219-CB330-080M | | | | | | |
| DCT10158-CB305-032M | DCT12219-CB330-100M | | | | | | | | | | |
| NF63-HV | 63 | 10 | 2 | 25kA. at 230V. | DCT10158-CB225-010M | 250 | 150 | 3 | 36kA. at 400V. | DCT15319-CB336-150M | |
| | | | | | DCT10158-CB225-016M | | | | | DCT15319-CB336-175M | |
| | | | | | DCT10158-CB225-020M | | | | | DCT15319-CB336-200M | |
| | | | | | DCT10158-CB225-025M | | | | | DCT15319-CB336-225M | |
| | | | | | DCT10158-CB225-032M | | | | | DCT15319-CB336-225M | |
| | | | | | DCT10158-CB225-040M | | | | | DCT15319-CB336-225M | |
| | | | | | DCT12168-CB225-050M | | | | | DCT15319-CB336-250M | |
| | DCT12168-CB225-063M | | | | | | | | | | |
| | NF250-SV | 10 | 3 | 10kA. at 400V. | DCT10158-CB310-010M | 250 | 175 | 3 | 36kA. at 400V. | DCT15319-CB336-150M | |
| | | | | | DCT10158-CB310-016M | | | | | DCT15319-CB336-175M | |
| | | | | | DCT10158-CB310-020M | | | | | DCT15319-CB336-200M | |
| | | | | | DCT10158-CB310-025M | | | | | DCT15319-CB336-225M | |
| | | | | | DCT10158-CB310-032M | | | | | DCT15319-CB336-225M | |
| | | | | | DCT10158-CB310-040M | | | | | DCT15319-CB336-225M | |
| DCT12168-CB310-050M | | | | | DCT15319-CB336-250M | | | | | | |
| DCT12168-CB310-063M | | | | | | | | | | | |

Circuit Breaker Accessories

- Internal accessories of circuit breaker
 - **Alarm switch** (Indicates that the breaker has tripped.)
 - **Auxiliary switch** (Indicates whether the breaker is ON or OFF)
 - **Shunt trip** (Trip the breaker electrically by Mushroom-head push button.)
 - **Undervoltage trip** (Trip the breaker automatically when the voltage drops.)

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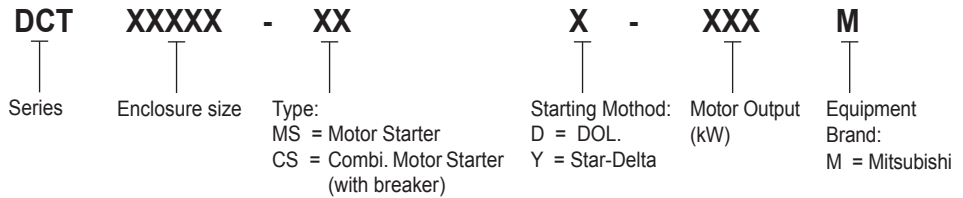
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Zone 1 & 2 – 21 & 22

Catalogue Number



Catalogue Number Logic



D

| 3Ph. Motor 380/220V. | | Average Full Load (I _{FL}) | Cat. No. | | | |
|-------------------------|------|--|---------------------|-------------------|---------------------------|--------------------|
| kW. | HP | | Motor Starter | | Combination Motor Starter | |
| | | | Direct-On-Line | Star-Delta | Direct-On-Line | Star-Delta |
| 0.37 | 0.5 | 1.2A. | DCT10158-MSD-X37M | - | DCT12219-CSD-X37M | - |
| 0.55 | 0.75 | 1.6A. | DCT10158-MSD-X55M | - | DCT12219-CSD-X55M | - |
| 0.75 | 1 | 2A. | DCT10158-MSD-X75M | - | DCT12219-CSD-X75M | - |
| 1.1 | 1.5 | 2.6A. | DCT10158-MSD-1X1M | - | DCT12219-CSD-1X1M | - |
| 1.5 | 2 | 3.5A. | DCT10158-MSD-1X5M | - | DCT12219-CSD-1X5M | - |
| 2.2 | 3 | 5A. | DCT10158-MSD-2X2M | - | DCT12219-CSD-2X2M | - |
| 3 | 4 | 6.6A. | DCT10158-MSD-3M | DCT16169-MSY-3M | DCT12219-CSD-3M | DCT162012-CSY-3M |
| 3.7 | 5 | 8.2A. | DCT10158-MSD-3X7M | DCT16169-MSY-3X7M | DCT12219-CSD-3X7M | DCT162012-CSY-3X7M |
| 4 | 5.5 | 8.5A. | DCT10158-MSD-4M | DCT16169-MSY-4M | DCT12219-CSD-4M | DCT162012-CSY-4M |
| 5.5 | 7.5 | 11.5A. | DCT10158-MSD-5X5M | DCT16169-MSY-5X5M | DCT12219-CSD-5X5M | DCT162012-CSY-5X5M |
| 7.5 | 10 | 15.5A. | DCT10158-MSD-7X5M | DCT16169-MSY-7X5M | DCT12219-CSD-7X5M | DCT162012-CSY-7X5M |
| 11 | 15 | 22A. | DCT121810-MSD-11M | DCT16169-MSY-11M | DCT162210-CSD-11M | DCT162012-CSY-11M |
| 15 | 20 | 30A. | DCT121810-MSD-15M | DCT16169-MSY-15M | DCT162210-CSD-15M | DCT162012-CSY-15M |
| 18.5 | 25 | 37A. | DCT121810-MSD-18X5M | consult factory | DCT162210-CSD-18X5M | consult factory |
| 22 | 30 | 44A. | DCT121810-MSD-22M | consult factory | DCT162210-CSD-22M | consult factory |
| 30 | 40 | 60A. | DCT162012-MSD-30M | consult factory | DCT15319-CSD-30M | consult factory |

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Catalogue Number



Catalogue Number Logic

DCT **XXXXX** - **PN** **X** **X** - **XX** **A**

Series Enclosure size Panelboard Main: Supply: Circuit Element Equipment Brand:

L = Main Lug 1 = 1-Phase M = Main Breaker 3 = 3-Phases A = ABB

| No. of Circuit | Main | Branch Breaker (MCB) | | Cat. No. | |
|----------------|------------------------|----------------------|---------------------|---------------------|---------------------|
| | | Poles | Amp. | 220V.AC. 50Hz. | 380/220V.AC. 50Hz. |
| 4 | 100A. max. Main Lug | 2 | 6, 10, 16, or 20 | DCT181812- PNL1-08A | DCT181812- PNL3-08A |
| | | 3 | | - | DCT162210- PNL3-12A |
| | | 2 | | DCT181812- PNL1-12A | DCT162210- PNL3-12A |
| 6 | | 3 | | - | DCT15319- PNL3-18A |
| | | 2 | DCT181812- PNL1-16A | - | |
| | | 3 | | | |
| 4 | 60A. max. Main Breaker | 2 | 6, 10, 16, or 20 | DCT162210- PNL1-08A | DCT162210- PNL3-08A |
| | | 3 | | - | DCT162210- PNL3-12A |
| | | 2 | | DCT162210- PNL1-12A | DCT15319- PNL3-12A |
| 6 | | 3 | | - | DCT15319- PNL3-18A |



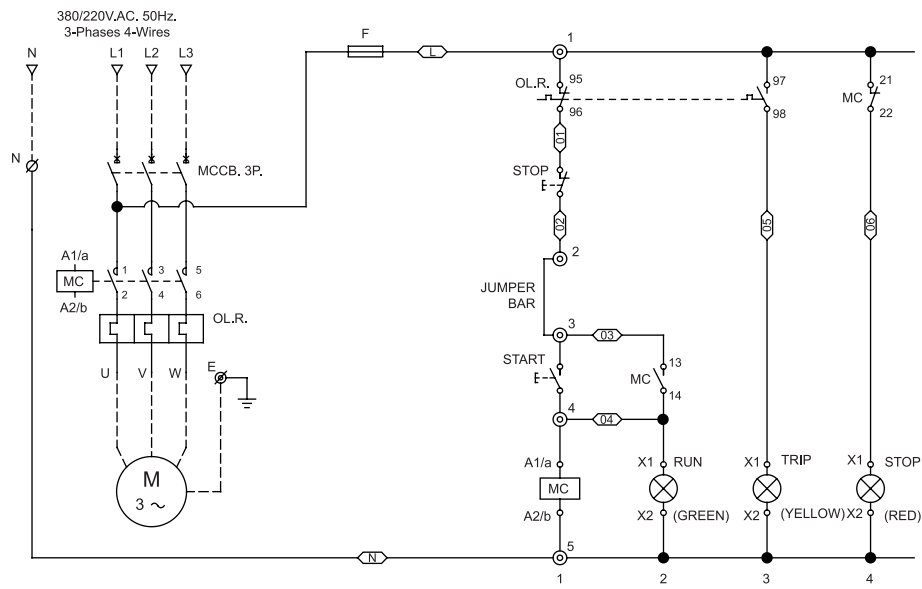
Control Station and Control Panel: Control Box, Motor Starter Wiring Diagram



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Direct-On-line Starting Method



Star-Delta Starting Method

