



## DFE110

Solenoid control monoblock diverter valve for special applications

- 12 ways configuration
- Designed for Front-end Loader Applications

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm<sup>2</sup>/s - 46 cSt viscosity at 40°C - 104°F temperature.

| WORKING CONDITIONS                         |                         |  |
|--|-------------------------|--|
| N. of available ways                       |                         | 12   |
| Max. flow rating                           |                         | 90 l/min (23.7 US gpm)                               |
| Max. pressure                              | without drain           | 200 bar (2900 psi)                                   |
|  | with drain              | 315 bar (4600 psi)                                   |
| Available supply voltage                   | VDC                     | see reference page 114                               |
| Nominal power                              |                         | 60 W   |
| Internal leakage A(B)⇒T                    | Δp = 100 bar (1450 psi) | 10 cm <sup>3</sup> /min (0.61 in <sup>3</sup> /min)  |
| Fluid                                      |                         | Mineral based oil                                    |
| Fluid temperature                          | with NBR (BUNA-N) seals | from -20°C to 80°C (from -4°F to 176°F)              |
|  | with FPM (VITON) seals  | from -20°C to 100°C (from -4°F to 212°F)             |
| Viscosity                                  | operating range         | from 15 to 75 mm <sup>2</sup> /s (from 15 to 75 cSt) |
|  | min.                    | 12 mm <sup>2</sup> /s (12 cSt)                       |
|  | max.                    | 400 mm <sup>2</sup> /s (400 cSt)                     |
| Max. level of contamination                |                         | 20/18/15 - ISO 4406 - NAS 1638 - class 9             |
| Ambient temperature for working conditions |                         | from -20°C to 50°C (from -4°F to 122°F)              |

NOTE - For different working conditions please contact Sales Dept.

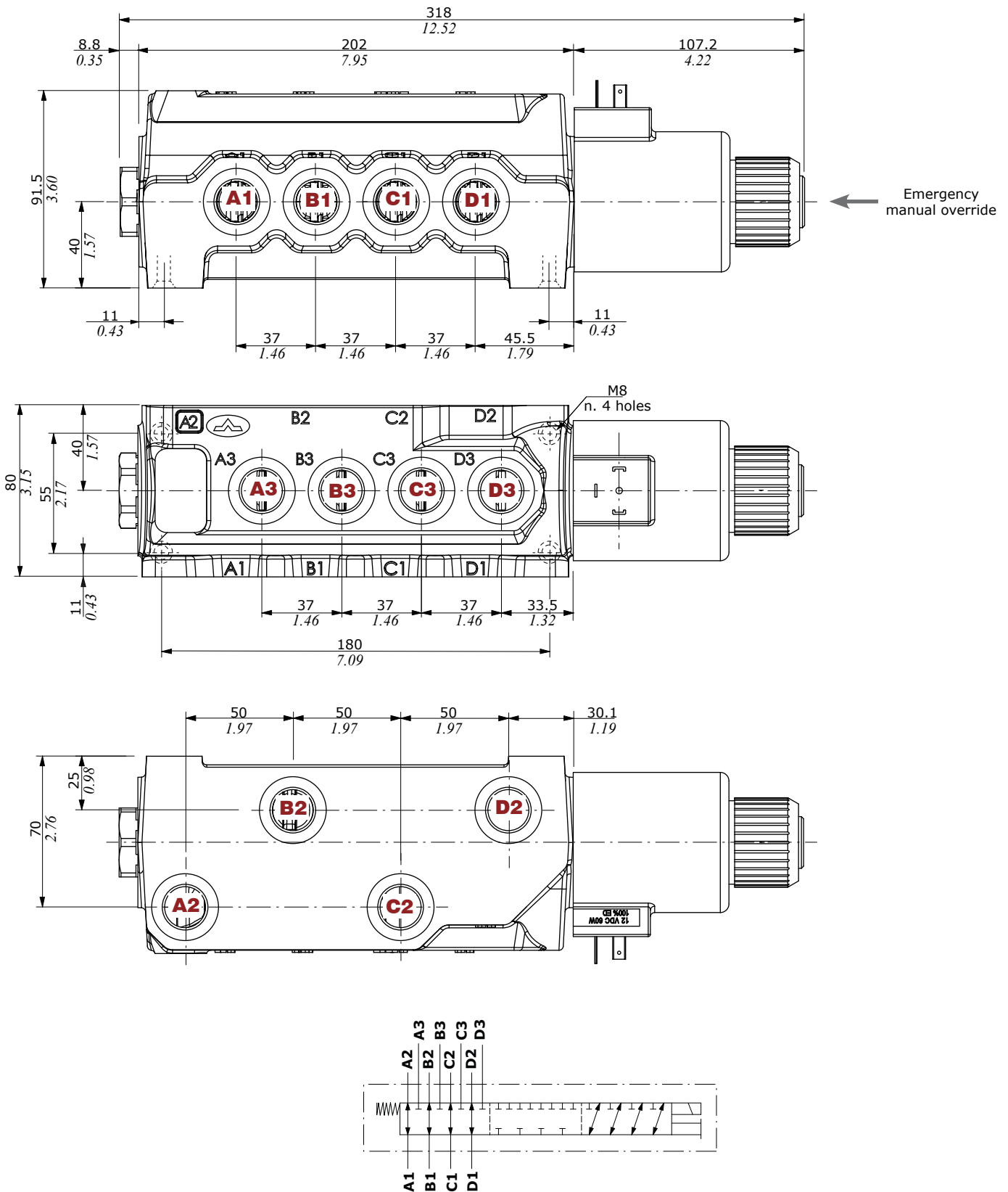
### Available threads

| PORTS THREAD       |       |                 |                         |                       |
|--------------------|-------|-----------------|-------------------------|-----------------------|
|                    | BSP   | UN-UNF          | METRIC*<br>(ISO 9974-1) | METRIC*<br>(ISO 6149) |
| ALL PORTS          |       |                 |                         |                       |
| <b>DFE110</b>      | G 1/2 | 7/8-14 (SAE 10) | M22x1.5                 | M22x1.5               |
| <b>PILOT PORTS</b> |       |                 |                         |                       |
| <b>L</b>           | G 1/4 | 9/16-18 (SAE 6) | M12x1.5                 | M12x1.5               |

(\* ) Optional threads  
for availability contact Sales  
Department

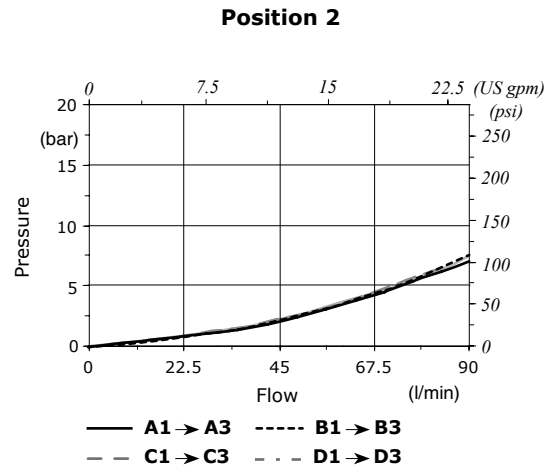
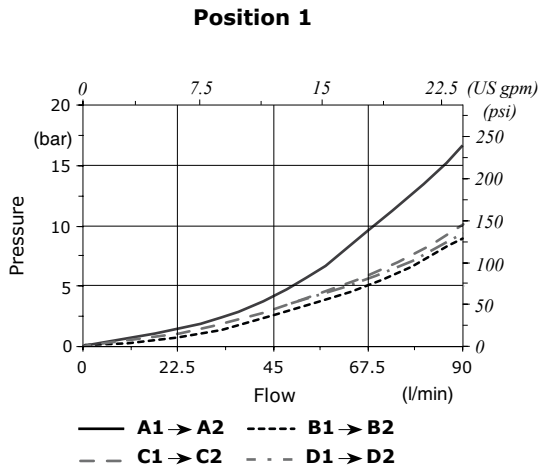
## Dimensional data and hydraulic circuit

### 12 ways



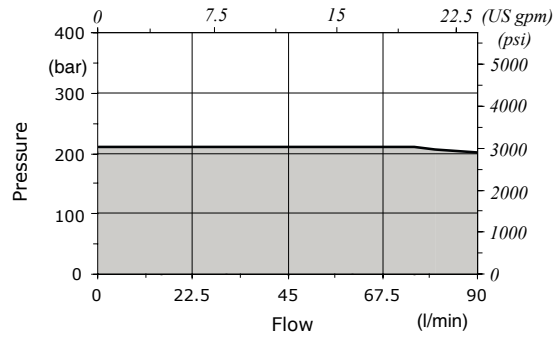
**Performance data**

**Pressure drop versus flow**



**Minimum dynamic conditions**

(Supply = Vn-10%, coil at 70 °C - 158 °F)



■ Without drain

## Part ordering codes

Example:

For description composition  
see the text below

**DFE110/12**   **B**   **18**   **ES**   -   **W**   **2 0 0 - 12VDC**   -   **SAE**   -   **(CVN)**

1   2   3   4   -   3   2   0   0   -   12VDC   -   SAE   -   (CVN)

Painted with one layer of  
black Primer antirust

... **2 0 0 - 12VDC - ...**

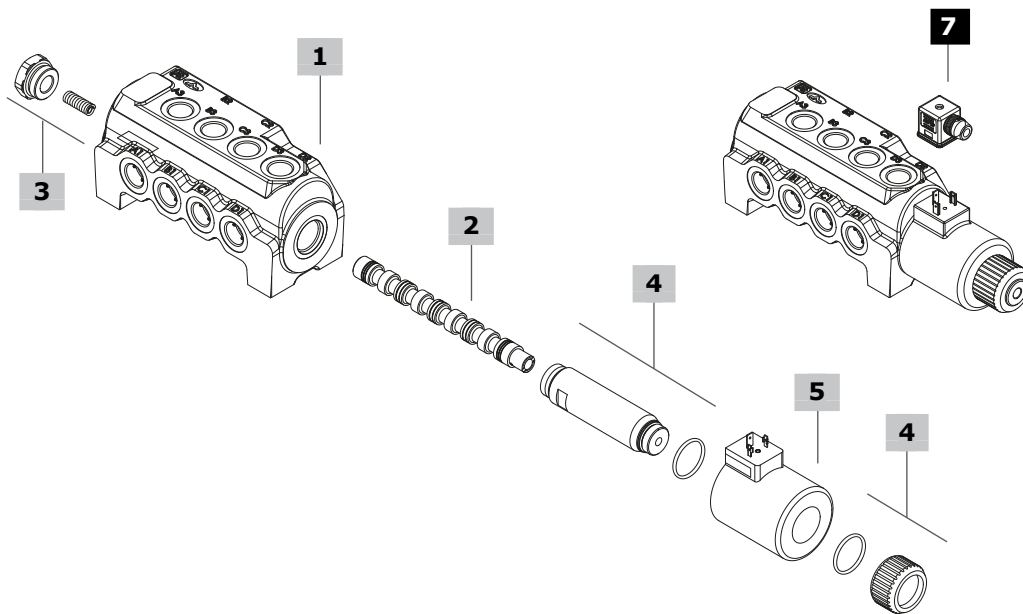
**Coil**  
1 = without coil  
2 = with coil

**Connection\***  
0 = ISO (Std)  
2 = AMP-JPT  
3 = Deutsch DT06  
4 = Deutsch DT04-2P Male  
5 = Deutsch DT04-4P Female  
6 = Metri-Pack Female  
7 = Metri-Pack Male  
8 = WeatherPack Male  
9 = WeatherPack Female

**Bellow**  
0 = bellow not available

**Coil voltage**

(\*) - For connector options see coils table on page 114



### 1 Body kit\* page 113

| TYPE             | CODE       | DESCRIPTION      |
|------------------|------------|------------------|
| <b>DFE110/12</b> | 3CO2243720 | 12 ways body kit |

### 2 Spool page 113

| TYPE     | CODE       | DESCRIPTION   |
|----------|------------|---|
| <b>B</b> | 3CAS108H40 | A1->A2, B1->B2, C1->C2, D1->D2 in pos. 1, A1->A3, B1->B3, C1->C3, D1->D3 in pos. 2.<br>Ports closed in transit position |

### 3 Positioner kit page 113

| TYPE          | CODE     | DESCRIPTION                                   |
|---------------|----------|---|
| <b>18...W</b> | 5TAP005  | Spring return in pos. 1                       |
| <b>18...Y</b> | 5GIU011* | Spring return in pos. 1, with SAE6 drain port |

### 4 Solenoid kit page 113

| TYPE      | CODE       | DESCRIPTION                             |
|-----------|------------|---|
| <b>ES</b> | 5SOL519003 | Tube assembly without protective bellow |

### 5 Coil

For list of available coils see pages 114

### 6 Body threading

Specify threading always when it is different from **BSP** standard

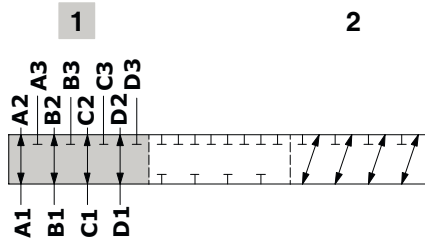
### 7 Accessories

For list of available connectors see pages 114

(\*) - Codes are referred to **UN-UNF** thread

**Spool circuit**

**Type B**  
Ports closed  
in transit position



**Spool stroke**  
Position 2: + 5.8 mm (0.23 in)

**Positioner kit**

**With spring return in position 1**

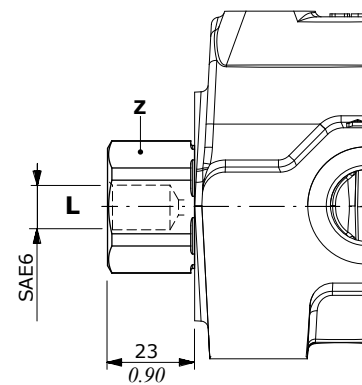
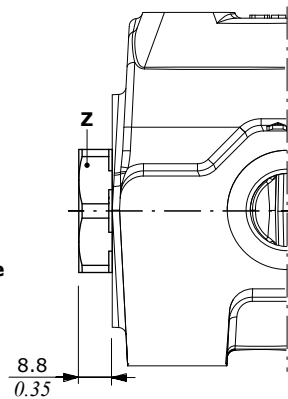
**Type 18W**  
With plug



**Type 18Y**  
with SAE6 drain port

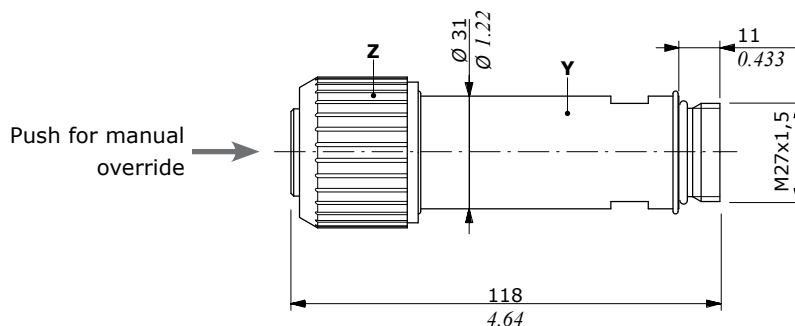


**Wrenches and tightening torque**  
Z = wrench 32 - 42 Nm (31 lbft)



**Solenoid kit**

**ES tube assembly kit**



**Wrenches and tightening torque**  
Y = wrench 27 - 24 Nm (17.7 lbft)  
Z = 24 Nm (17.7 lbft)

## Coil and accessories

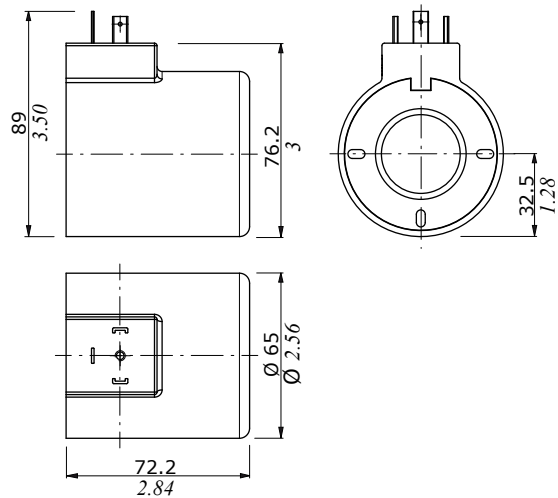
| Type                     | Voltage        | Ordering codes |                           |         |                     |                    | Flying leads without connector |
|--------------------------|----------------|----------------|---------------------------|---------|---------------------|--------------------|--------------------------------|
|                          |                | ISO4400        | Deutsch DT                | AMP JPT | Packard Weatherpack | Packard Metri-pack |                                |
| <b>D19</b>               | <b>12 VDC</b>  | 4SOL519112     | 4SOL519402 <sup>(6)</sup> | -       | -                   | -                  | -                              |
|                          | <b>20 VDC</b>  | 4SOL519120     | -                         | -       | -                   | -                  | -                              |
|                          | <b>24 VDC</b>  | 4SOL519124     | 4SOL519404 <sup>(6)</sup> | -       | -                   | -                  | -                              |
|                          | <b>94 VDC</b>  | 4SOL519194     | -                         | -       | -                   | -                  | -                              |
|                          | <b>192 VDC</b> | 4SOL519292     | -                         | -       | -                   | -                  | -                              |
| <b>Mating connectors</b> |                | 4CN1009995     | 5CON140031                | -       | -                   | -                  | -                              |

Notes: <sup>(1)</sup> supply with AC and use only with rectifier connector - <sup>(2)</sup> with flying leads - <sup>(3)</sup> with bidirectional diode - <sup>(4)</sup> with unidirectional diode - <sup>(5)</sup> integrated perpendicular type - <sup>(6)</sup> integrated parallel type

### Features

Nominal voltage tolerance:  $\pm 10\%$   
 Nominal power.....: 60 W  
                                   12/20/24/94/192 VDC  
 Nominal current.....: 5 A @ 12 VDC  
                                   : 3 A @ 20 VDC  
                                   : 2.5 A @ 24 VDC  
                                   : 2.5 A @ 94 VDC  
                                   : 0.31 A @ 192 VDC  
 Insulation.....: Class H (180°C - 356 °F)  
 Weather protection.....: IP65 - ISO4400  
                                   : IP69K - Deutsch DT  
 Insertion.....: 100%

### ISO4400 connector



### DEUTSCH DT04 connector (Parallel type)

