



## DFE20

### Solenoid control monoblock diverter valves

- 3 - 6 ways configuration
- Galvanized body

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		3 - 6
Max. flow rating		140 l/min (36.9 US gpm)
Max. pressure	without drain	200 bar (2900 psi)
	with drain	315 bar (4600 psi)
Available supply voltage	VDC	see reference page 102
Nominal power		60 W
Internal leakage A(B)⇒T	Δp = 100 bar (1450 psi)	15 cm <sup>3</sup> /min (0.91 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.

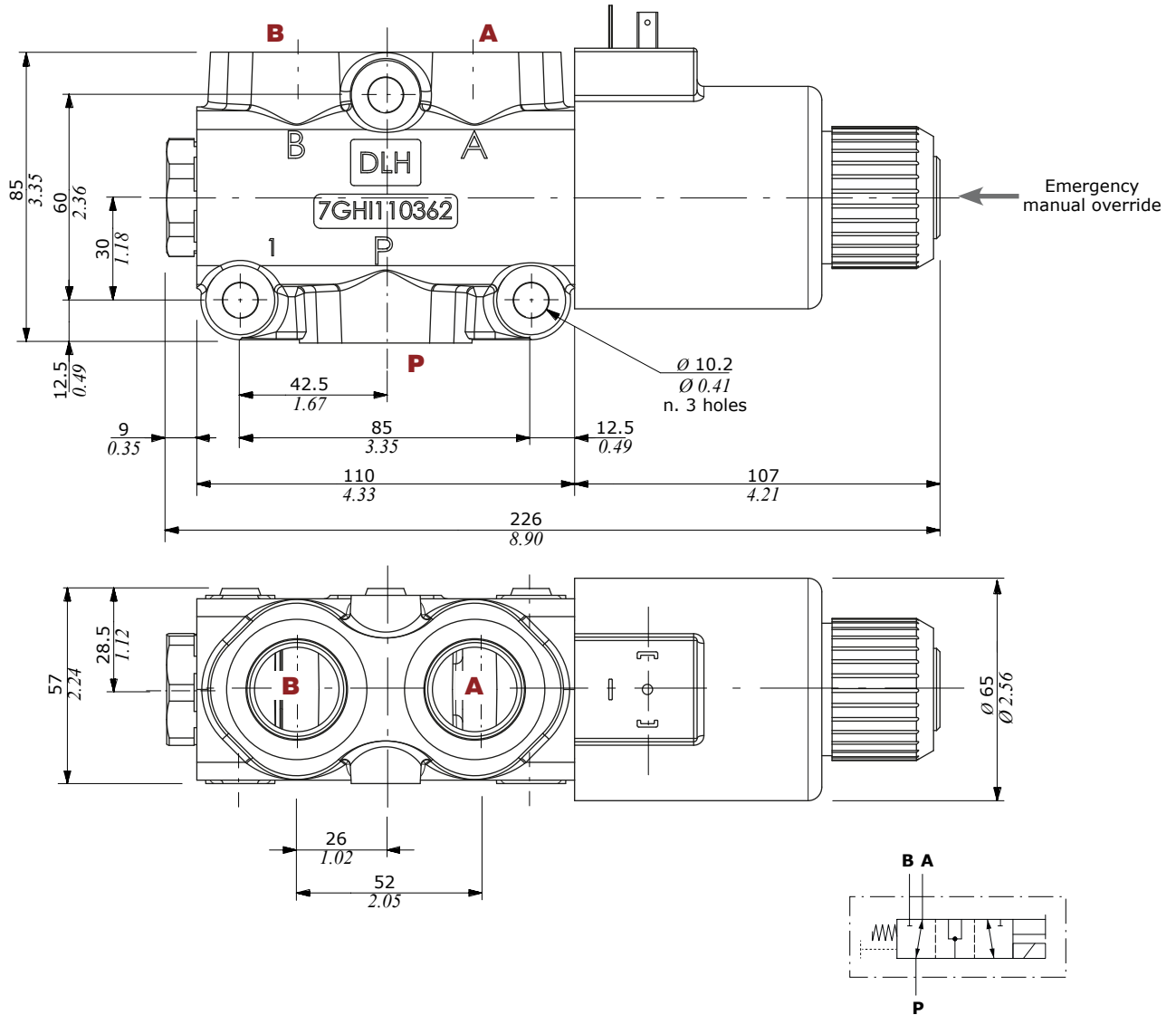
### Available threads

PORTS THREAD		
ALL PORTS	BSP	UN-UNF
<b>DFE20</b>	G 3/4	1" 1/16-12 (SAE 12)
PILOT PORTS		
<b>L</b>	G 1/4	7/16-20 (SAE 4)

Dimensional data - hydraulic circuit - performance data

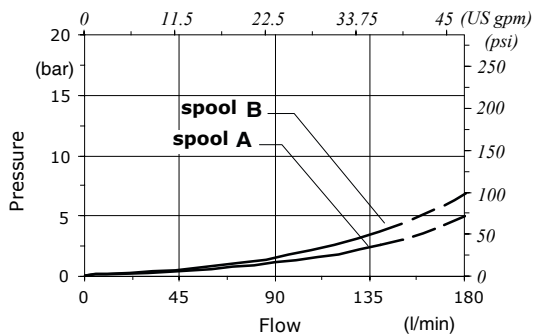
3 ways

It's possible to obtain 2 ways diverter valve plugging port



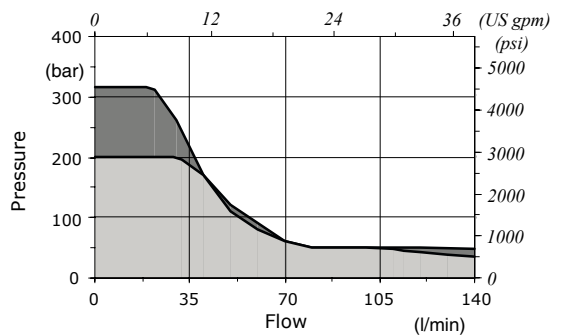
Pressure drop versus flow

P → A(B)



Minimum dynamic conditions

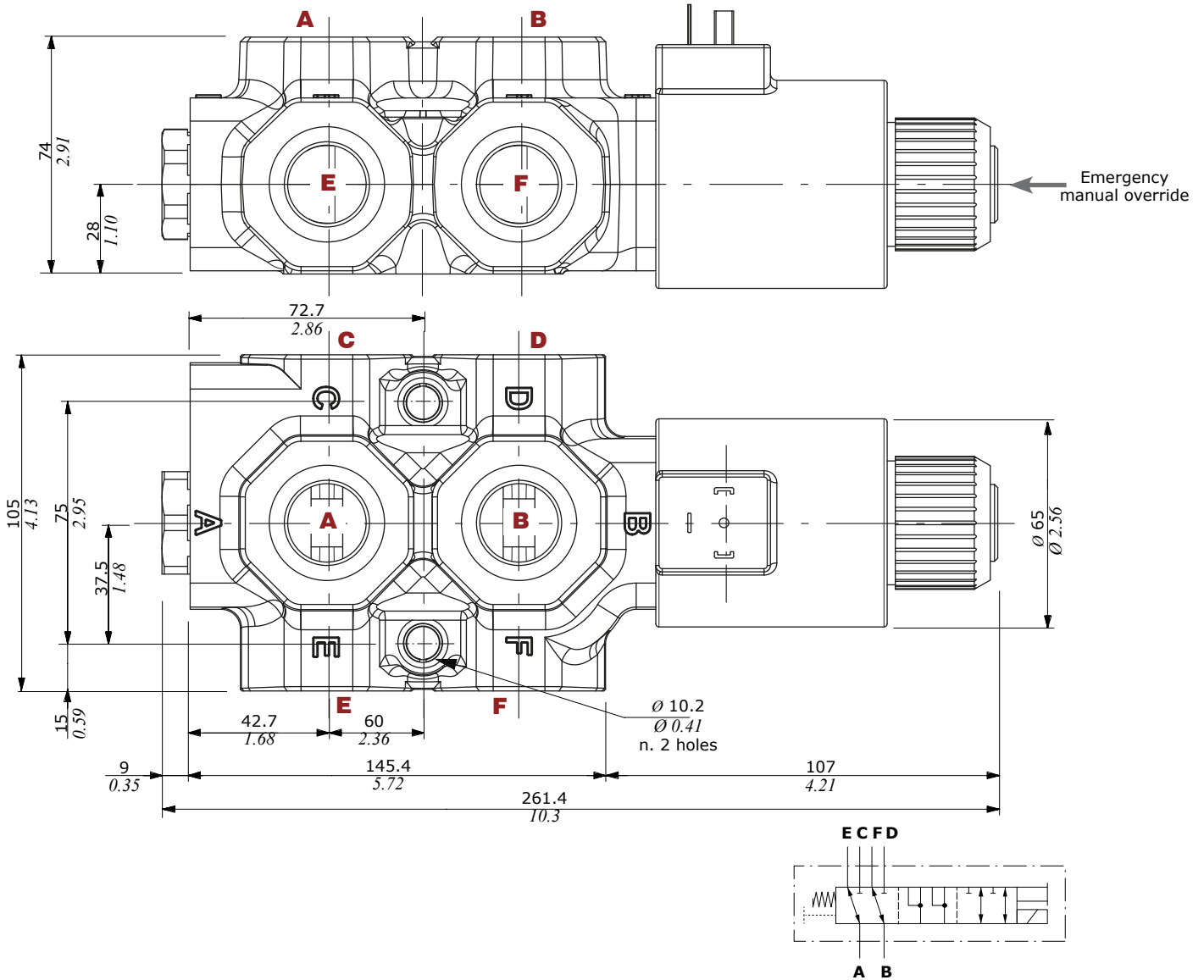
(Supply = Vn-10%, coil at 70 °C - 158 °F)



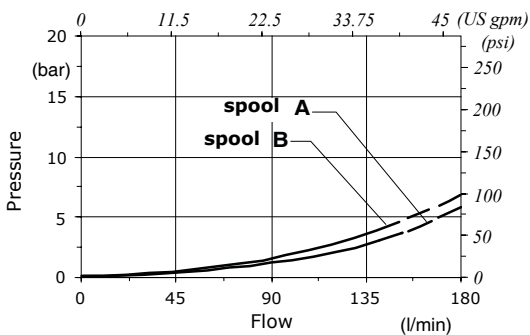
■ With drain  
 ■ Without drain

**Dimensional data - hydraulic circuit - performance data**

**6 ways**

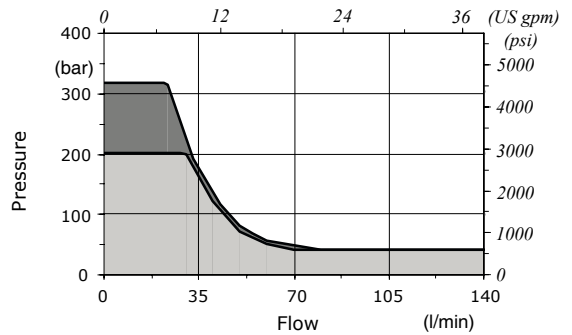


**Pressure drop versus flow**



**Minimum dynamic conditions**

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



■ With drain  
 ■ Without drain

## Part ordering codes

Example:

For description composition  
see the text below

**DFE20/3 A 18 ES - W 2 0 0 - 12VDC - SAE - (CRZ)**

1      2      3      4      3      4      5      6      Galvanized body

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

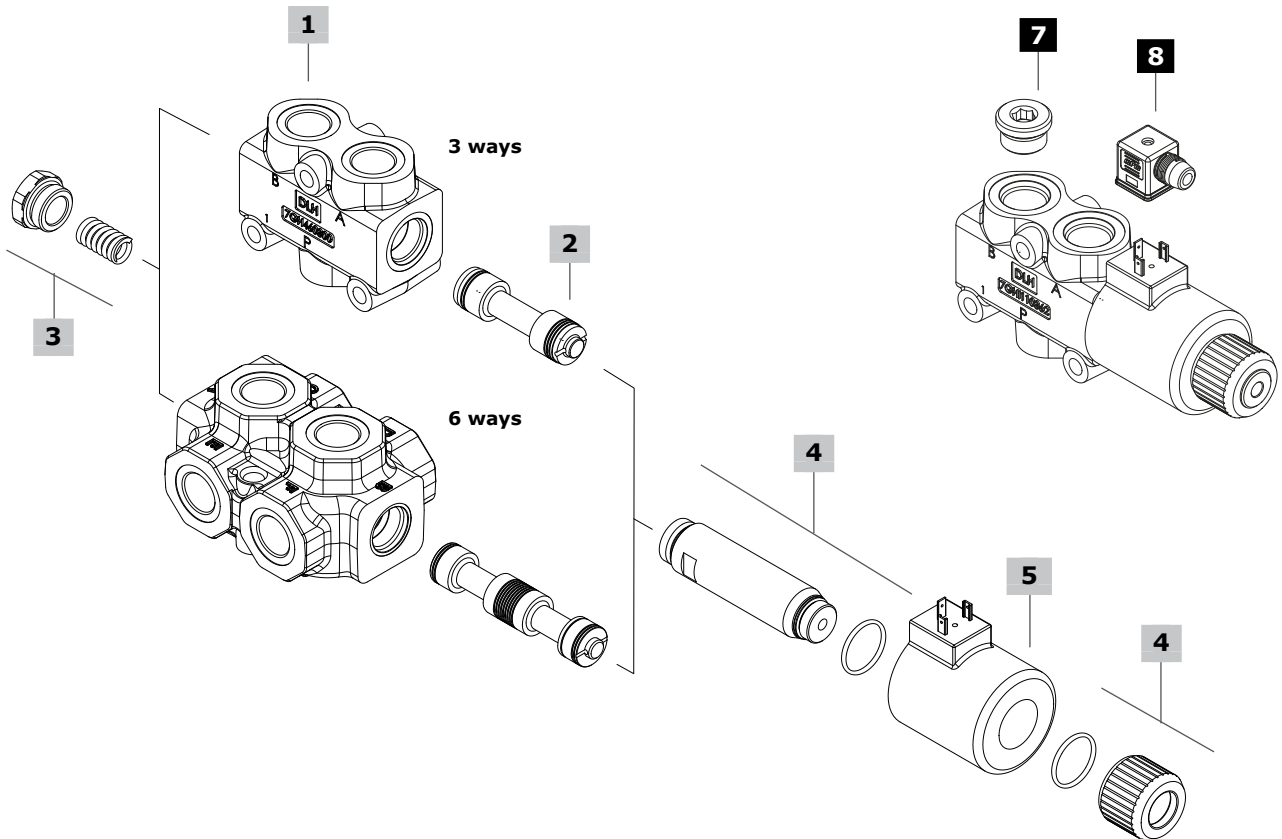
**Coil**  
1 = without coil  
2 = with coil

**Coil voltage**

**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

(\*) - For connector options see coils table on page 102



**1 Body kit\***

TYPE	CODE	DESCRIPTION
<b>DFE20/3</b>	3CO2261721Z	3 ways body kit
<b>DFE20/6</b>	3CO2263720Z	6 ways body kit

**2 Spools** **page 100**

TYPE	CODE	DESCRIPTION
<b>for DFE20/3:</b>		
<b>A</b>	3CAS120341	Flow in A in neutral. Ports connected in transit position
<b>B</b>	3CAS120441	Flow in A in neutral. Ports closed in transit position
<b>for DFE20/6:</b>		
<b>A</b>	3CAS120641	Flow in E and F. C and D closed in pos. 1 Ports connected in transit position
<b>B</b>	3CAS120741	Flow in E and F. C and D closed in pos. 1 Ports closed in transit position
<b>H</b>	3CAS120841	D<->C in pos. 1, F<->E in pos. 2 Ports closed in transit position

**3 Positioner kit** **page 101**

TYPE	CODE	DESCRIPTION
<b>18...W</b>	5TAP003	Spring return in pos. 1
<b>18...Y</b>	5GIU008Z*	Spring return in pos. 1, with SAE4 drain port

**4 Solenoid kit** **page 101**

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

**5 Coil**

For list of available coils see pages 102

**6 Body threading**

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

**7 Port plugs\***

It's possible to obtain 2 ways diverter valve plugging port of DFE20/3

CODE	DESCRIPTION
3XTAP832200	SAE12 plug

**8 Accessories**

For list of available connectors see pages 102

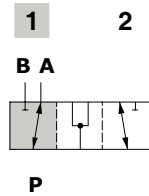
(\*) - Codes are referred to **UN-UNF** thread

Spool circuits

**3 ways**

**Type A**

Ports connected in transit position

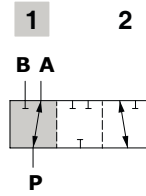


**Spool stroke**

Position 2: - 4.5 mm (- 0.18 in)

**Type B**

Ports closed in transit position



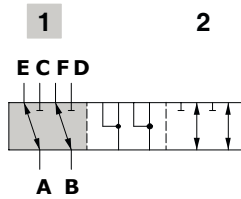
**Spool stroke**

Position 2: - 4.5 mm (- 0.18 in)

**6 ways**

**Type A**

Flow in E and F. C and D closed in pos. 1  
Ports connected in transit position

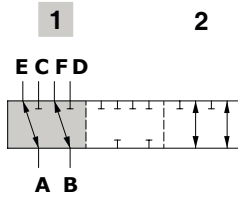


**Spool stroke**

Position 2: - 4.5 mm (- 0.18 in)

**Type B**

Flow in E and F. C and D closed in pos. 1  
Ports closed in transit position

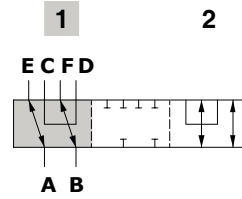


**Spool stroke**

Position 2: - 4.5 mm (- 0.18 in)

**Type H**

D->C in pos. 1, F->E in pos. 2  
Ports closed in transit position



**Spool stroke**

Position 2: - 4.5 mm (- 0.18 in)

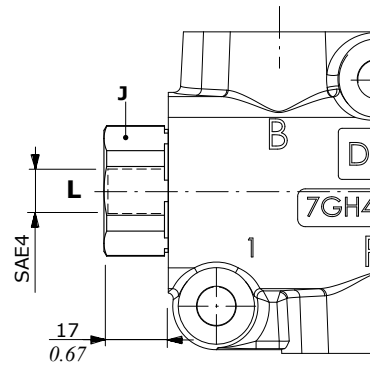
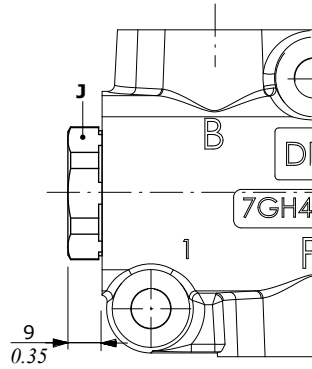
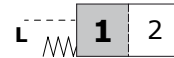
**Positioner kit**

**With spring return in position 1**

**Type 18W**  
With plug

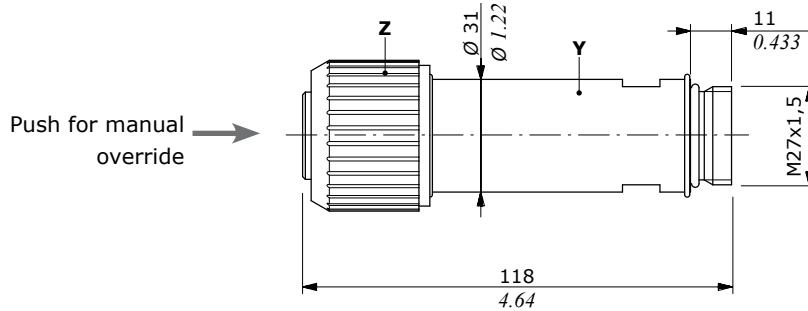
**Type 18Y**  
With SAE6 drain port

**Wrenches and tightening torque**  
J = 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

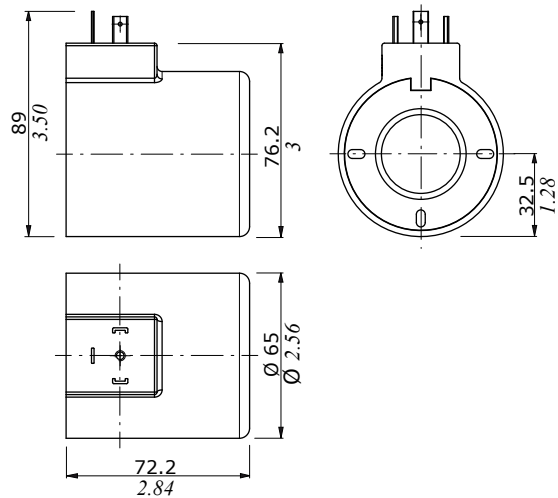
		Ordering codes					
Type	Voltage	Connector types					Flying leads without connector
		ISO4400	Deutsch DT	AMP JPT	Packard Weatherpack	Packard Metri-pack	
<b>D19</b>	<b>12 VDC</b>	4SOL519112	4SOL519402 <sup>(6)</sup>	-	-	-	-
	<b>20 VDC</b>	4SOL519120	-	-	-	-	-
	<b>24 VDC</b>	4SOL519124	4SOL519404 <sup>(6)</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)

