



# Technical Specification

BS 2125.181, BS 2125.181-U



# PRODUCT DESCRIPTION

## Applications

— pumping of water which may contain abrasive particles

— pumping of ground water

The pump is also available in a POLY-LIFE version (2125.181-U) with polyurethane-lined wear parts for extra abrasion resistance.

The pump is available in the following versions:

**Medium-head version (MT)** for high capacity. This version features a single impeller.

**High-head (HT).** This version features twin impellers arranged in series.

If the delivery head is very high, two or more pumps may be arranged in tandem.

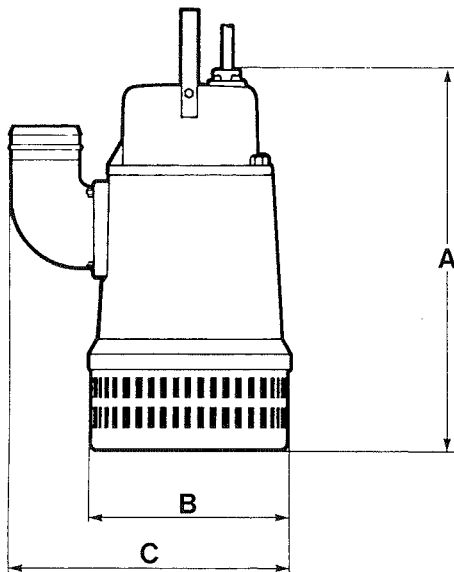
**Liquid temperature:** max. 40°C (105°F)

**Liquid density:** max. 1100 kg/m<sup>3</sup> (9.2 lb per US gal.)

**Depth of immersion:** max. 20 m (65 ft).

For other applications, that the above, contact your nearest Flygt representative for information.

## Dimensions and weights



A = 710 mm (27.9")  
 B = 360 mm (14.2")  
 C = 485 mm (19.1") for MT R4", 4"  
 515 mm (20.3") for MT 5"  
 535 mm (21.0") for MT 6"  
 565 mm (22.2") for MT R6"  
 465 mm (18.3") for HT R3", 3"  
 390 mm (15.4") for HT R3", 3" spec.

Weight in kg (lb) without motor cable and discharge connection:

MT, 89 kg (196 lb)

HT, 82 kg (181 lb)

### WARNING!

The pump may not be used in an explosive or flammable environment or for pumping flammable liquids.

## Motor data

**Rated output:**  
 8.0 kW, 3~50 Hz, 2800 r/min

Voltage V	Rated current A	Starting current A
220	28	200
230	27	192
380	16	111
400	15	112
415	15	99
440	14	106
500	13	95
660	9.3	63
690	8.9	69
1000	6.2	47

**Rated output:**  
 9.5 kW, (13 hp),  
 3~60 Hz, 3400 r/min

Voltage V	Rated current A	Starting current A
230	32	203
460	16	114
575	13	91
600	12	85

## Materials

		DIN	BS	AISI/ ASTM
Major castings	Aluminium alloy	1725 G-AISI 10Mg	1490	— LM9
Outer casing	Aluminium	1725 AISI 12	1490 LM20	B85 A413
Shaft	Stainless steel	17440 X20Cr13	970:4	(420)
Impeller, MT and HT	High chrome alloyed cast iron	1695 G-X 260 Cr 27	4844 Grade 3E	A532 Alloyed IIIA
Impeller, HT	Stainless	—	—	—
Strainer	Steel hot dip galvanized	1623 ST 13	449 Cr3	—
O-rings	Nitrile rubber	70°IRH		
Wear parts	Nitrile rubber	45°IRH or polyurethane (2125-U)		
Mechanical face seals	Inner: Tungsten carbide—Tungsten carbide Outer: Tungsten carbide—Tungsten carbide			

## Design

2125.181 is a submersible, electric motor-driven pump.

### 1. Motor

Squirrel-cage 3-phase induction motor for 50 Hz or 60 Hz.

The motor is started by means of direct on-line or star-delta start.

The motor can be run intermittently with a maximum of 15 evenly spaced starts per hour.

Flygt motors are tested in accordance with IEC 34-1.

The stator is insulated in accordance with class F (155°C, 310°F).

The motor is designed to supply its rated output at  $\pm 5$  % variation of the rated voltage. Without overheating the motor,  $\pm 10$  % variation of the rated voltage can be accepted provided that the motor does not run continuously at full load.

The motor is designed to operate with a voltage imbalance of up to 2 % between the phases.

### 2. Bearings

The pump bearings are designed for at least 15000 hours of operation.

The upper bearing of the rotor consists of a doublerow angular contact ball bearing.

The lower bearing of the rotor consists of a singlerow ball bearing.

### 3. Oil casing

The oil lubricates and cools the seals and acts as a buffer between the pump casing and the electric motor.

Pressure build-up within the oil casing is reduced by means of a built-in air volume.

### 4. Shaft seals

The pump has two mechanical seals.

Materials:

Inner seal: tungsten carbide — tungsten carbide.

Outer seal: tungsten carbide — tungsten carbide.

### 5. Shaft

The shaft is delivered with the rotor as an integral part.

Shaft material: stainless steel.

### 6. Cooling

The stator is cooled by the pumped liquid passing through the space between the stator casing and the outer casing.

### 7. Impellers

The pump is available with the following types of impellers:

**High-head version (2125 HT).** Two radial-flow impellers of chromium alloyed cast iron or stainless steel.

**Medium-head version (2125 MT).** One radial-flow impeller of chromium alloyed cast iron or stainless steel.

### 8. Monitoring equipment

The stator incorporates two thermal switches connected in series.

The thermal protectors: open at 125°C (260°F),  
close at 70°C (160°F).

The monitoring equipment shall be of a design that makes automatic restart impossible.

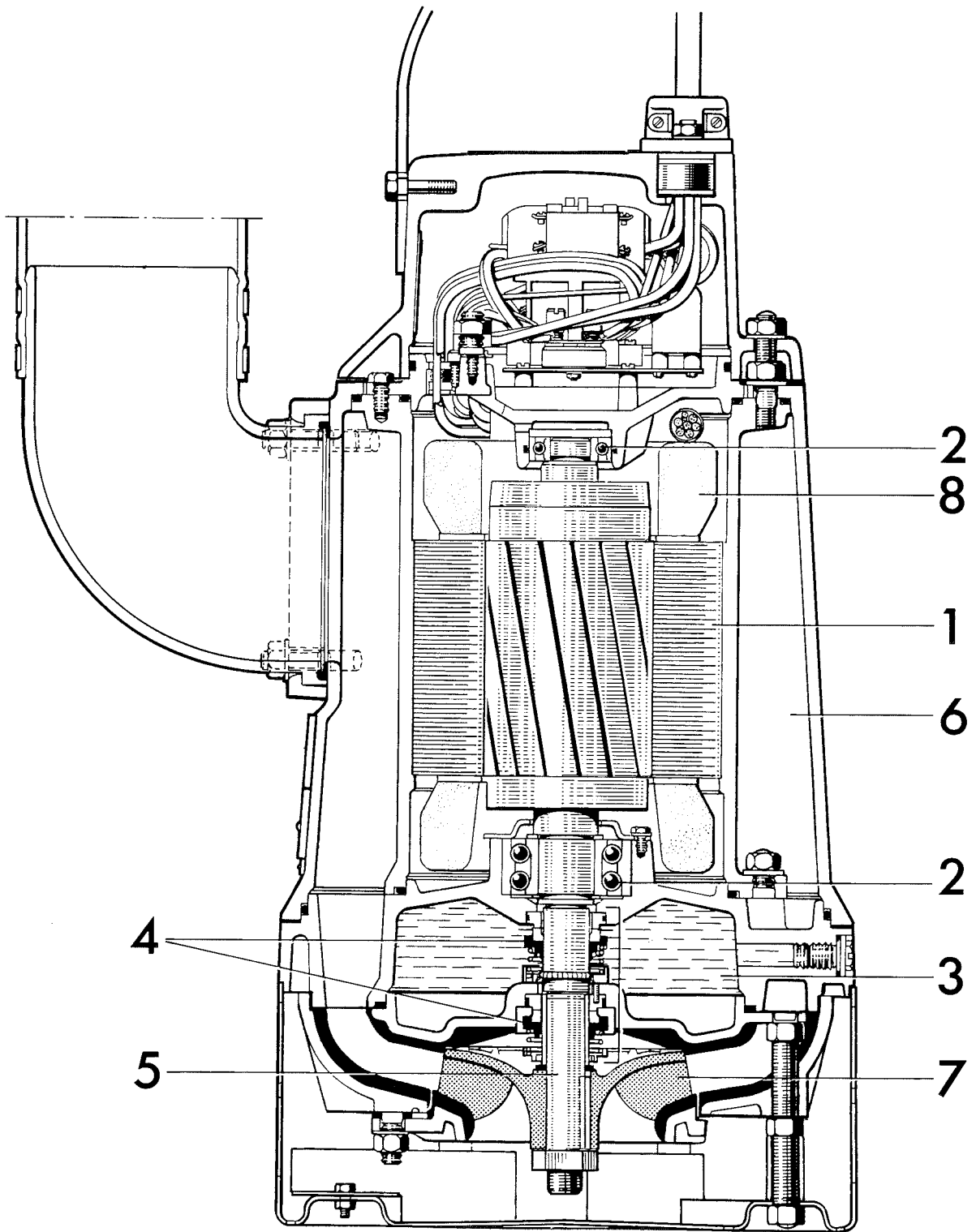
### 2125.181 with terminal board

Always use a motor protection breaker for this type of pump. The pump is equipped with a terminal board and is convertible between different voltages.

### Pump with overtemperature protection

The pump unit has a built-in contactor unit. The unit consists of motor contactor and a blocking relay. The stator winding incorporates two thermal switches connected in series. The switches break the coil circuit in the contactor at a given overtemperature so that the contactor de-energizes the pump motor. The blocking relay then keeps the contactor open when the thermal switch has cooled. This prevents repeated energizing and overheating of the motor in the event of a fault. Not until the current has been interrupted manually and the fault rectified can the pump be restarted.

The function is the same in the event of a failure of the L3 phase the event of a failure of the L1 or L2 phase, or in the event of a three-phase power failure, however, the contactor closes as soon as the power returns.



## Performance curves

The pump curves show:

- input power at various operating points.
- flow rate versus total head.

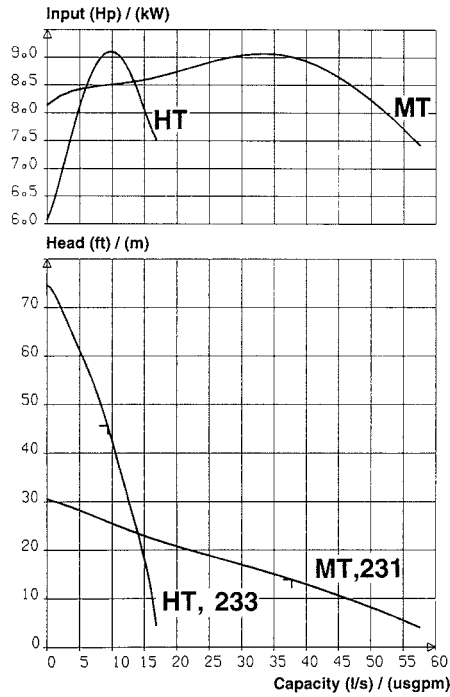
The table shows available pump-motor combinations.

The following abbreviations are used:

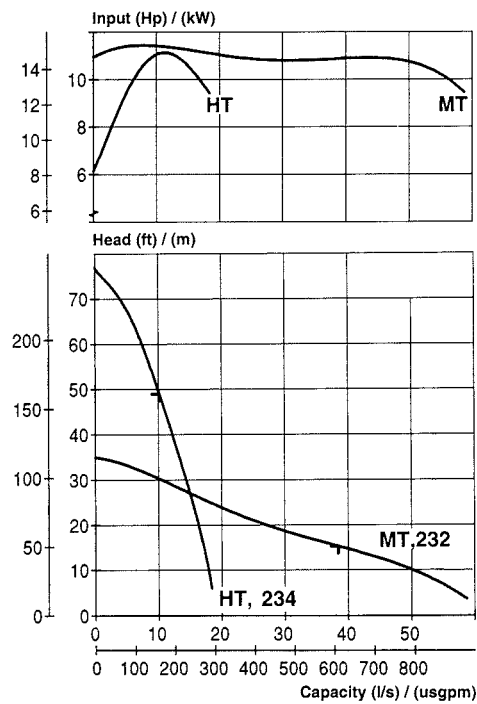
**MT** = medium-head version

**HT** = high-head version

### 50 Hz



### 60 Hz









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