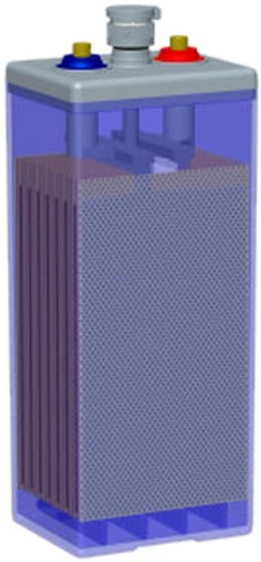
OPzS TÜBÜLER SULU SERİ · OPzS TUBULAR FLOODED SERIES

SS7OPzS490

2V 490Ah · OPzS · FLOODED · 166 × 206 × 526 mm

SULU (FLOODED) AKÜ / FLOODED BATTERY · Standart kod: **7 OPzS 490 – 2V 490Ah**





Ürün görseli / Product image

2V
GERİLİM
VOLTAGE

490Ah
KAPASİTE
CAPACITY

3675A
KISA DEVRE
SHORT CIRCUIT

≈ 0.75 mΩ
İÇ DİRENÇ
INT. RESISTANCE

38.0kg
AĞIRLIK
WEIGHT

20 yıl · yrs
TASARIM ÖMRÜ
DESIGN LIFE

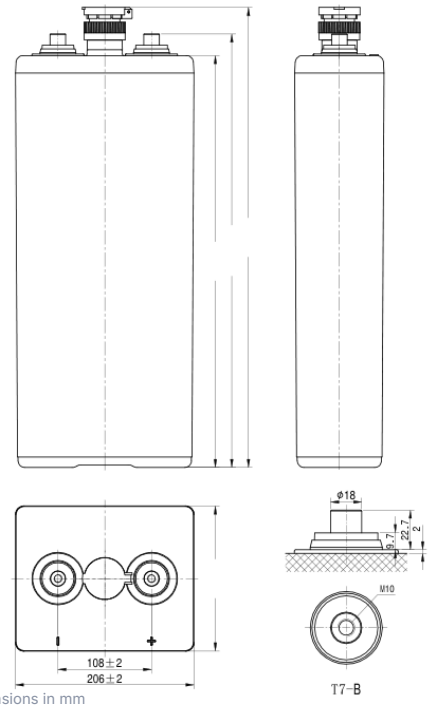
U × G × Y / L × W × H — **166 × 206 × 526 mm**

TEKNİK ÖZELLİKLER
CHARACTERISTICS · ELECTRICAL / MECHANICAL / OPERATING

Nominal gerilim Rated voltage		**2V**
Nominal kapasite (20°C) Nominal Capacity (20°C)	C10,1.80V/cell	**490Ah**
Boyutlar Dimensions	Uzunluk Length	**166mm (6.54inches)**
	Genişlik Width	**206mm (8.11inches)**
	Kutu yüksekliği Container height	**471mm (18.5inches)**
	Toplam yükseklik Total height	**526mm (20.7inches)**
Yaklaşık ağırlık Approx. weight		**38.0kg (83.8lbs)**
Kuru ağırlık Dry Weight		**28.2kg (62.2lbs)**
Terminal		**T7-B(M10)**
Kutu malzemesi Container material		**SAN şeffaf gövde** SAN transparent container
Kısa devre akımı Short-circuit current		**3675A**
İç direnç (20°C) Internal Resistance (20°C)		**Yaklaşık 0.75 mΩ (tam şarjlı)** Approx. 0.75 mΩ (fully charged)

Çalışma sıcaklığı aralığı Operating temp. range	Deşarj Discharge	**-15~55°C (5~131°F)**
	Şarj Charge	**0~45°C (32~113°F)**
	Depolama Storage	**-15~45°C (5~113°F)**
Nominal çalışma sıcaklığı Nominal operating temp. range		**25±5°C (77±9°F)**
Maks. şarj akımı (20°C) Max.Charging Current (20°C)		**0.15C**
Şarj gerilimi (20°C) Charge voltage (20°C)	Bekleme kullanımı Standby use	**Çevrimli kullanım** Cycle use
	2.23-2.25V/cell	**2.40-2.45V/cell**
Sıcaklık katsayısı Temp. coefficient	-3mV/cell/°C	**-5mV/cell/°C**
Sıcaklığın kapasiteye etkisi Effect of temperature on capacity	40°C (104°F)	**103%**
	20°C (68°F)	**100%**
	0°C (32°F)	**86%**
Kendiliğinden deşarj Self discharge		**20°C'de ayda ≤ %4** ≤4% per month at 20°C

01 TEKNİK ÇİZİM / TECHNICAL DRAWING (mm)



Ölçüler mm'dir / Dimensions in mm

Uzunluk Length	Genişlik Width	Kutu yüksekliği Container height	Toplam yükseklik Total height
166mm	206mm	471mm	526mm

TERMİNAL / TERMINAL
T7-B(M10)

02 DEŞARJ TABLOLARI / DISCHARGE TABLES (20°C)

Sabit akım deşarjı (A, 20°C) / Constant current discharge (A, 20°C)

Son ger. / F.V.	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h	24 h	72 h	100 h	120 h
1.85 V	194.5	142.1	109.4	90.6	78.2	68.7	56.0	46.9	25.8	21.6	7.76	5.82	4.98
1.80 V	227.4	156.6	119.6	97.9	83.4	72.9	58.9	49.0	26.8	22.5	8.06	6.04	5.18
1.75 V	247.0	166.6	125.9	102.3	87.0	75.7	60.5	50.1	27.3	22.9	8.21	6.15	5.27
1.70 V	260.2	174.0	130.0	105.5	89.4	77.6	61.6	50.9	27.8	–	–	–	–
1.65 V	270.5	178.1	133.9	107.9	91.4	79.1	62.7	51.8	28.2	–	–	–	–
1.60 V	279.8	182.3	136.2	109.5	92.6	80.2	63.4	52.4	28.4	–	–	–	–

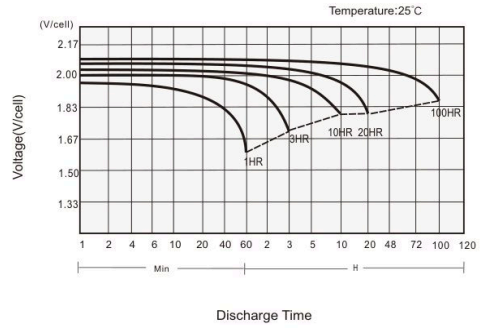
Sabit güç deşarjı (W/hücre, 20°C) / Constant power discharge (W/cell, 20°C)

Son ger. / F.V.	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h	24 h	72 h	100 h	120 h
1.85 V	364.0	268.0	207.4	172.4	149.5	131.9	108.0	90.9	50.1	42.0	15.0	11.2	9.57
1.80 V	419.3	292.0	224.2	184.5	158.1	139.0	112.7	94.2	51.7	43.3	15.4	11.5	9.87
1.75 V	449.7	308.0	234.4	191.5	164.1	143.4	115.3	95.8	52.4	43.9	15.7	11.7	10.0
1.70 V	469.3	319.3	240.5	196.5	167.8	146.5	116.8	97.0	53.1	–	–	–	–
1.65 V	484.2	325.5	246.5	200.4	170.9	148.8	118.4	98.3	53.6	–	–	–	–
1.60 V	496.8	331.5	249.5	202.3	172.3	150.1	119.3	98.9	53.9	–	–	–	–

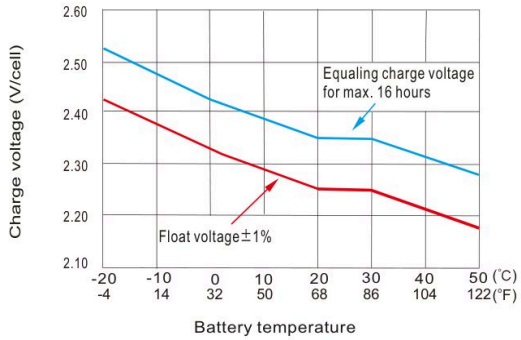
F.V. = son gerilim (V/hücre) / final voltage (V/cell) · min = dakika, h = saat / minutes, hours

03 PERFORMANS EĞRİLERİ / PERFORMANCE CURVES

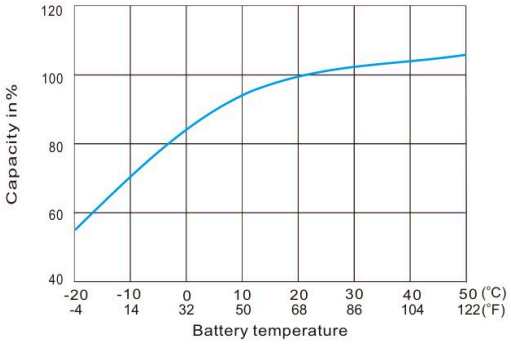
DEŞARJ KARAKTERİSTİKLERİ
DISCHARGE CHARACTERISTICS



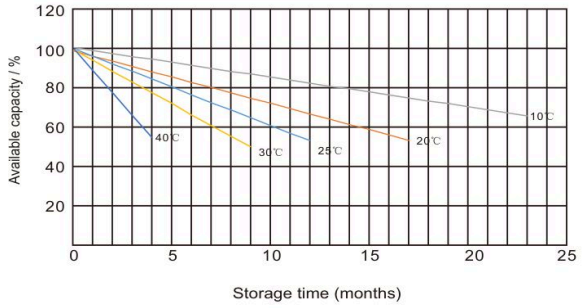
ŞARJ GERİLİMİ – ORTAM SICAKLIĞI EĞRİSİ
CHARGE VOLTAGE VS AMBIENT TEMPERATURE



Deşarj kapasitesi – ortam sıcaklığı eğrisi (I10 A)
Discharge capacity vs ambient temperature (I10 A)



KENDİ KENDİNE DEŞARJ KARAKTERİSTİKLERİ
SELF-DISCHARGE CHARACTERISTICS



04 UYGULAMALAR · ÖZELLİKLER · STANDARTLAR / APPLICATIONS · FEATURES · STANDARDS

UYGULAMALAR / APPLICATIONS

- **Telekomünikasyon**
  Telecommunications
- **Şamandıra aydınlatması**
  Buoy lighting
- **Yedek güç**
  Standby power
- **Demiryolu sinyalizasyonu**
  Railway signalling
- **Acil aydınlatma sistemleri**
  Emergency lighting systems
- **Alternatif enerji (güneş, rüzgâr)**
  Alternative power (solar, wind)
- **Gemilerde ve kıyıda denizcilik yedek gücü**
  Maritime standby power on ships and ashore

GENEL ÖZELLİKLER / GENERAL FEATURES

- **20 yıl tasarım ömrü (20°C)**
  20 years design life (20°C)
- **Pozitif elektrotlar: daha uzun ömür için düşük antimonlu kurşun alaşımlı basınçlı döküm tübüler plakalar**
  Positive electrodes: die-cast tubular plates with low-antimony lead alloy for longer life
- **Şeffaf SAN gövde: elektrolit seviyesi ve hücre durumu gözle izlenebilir**
  Transparent SAN Containers to allow electrolyte level and cell condition to be monitored visually
- **Mükemmel bekleme ve çevrim davranışı**
  Excellent standby and cycling behaviour
- **Uzun ömür**
  Long life

STANDARTLAR / STANDARDS

- **IEC 60896, DIN 40736 standartlarına uygun**
  Acc.to IEC60896, DIN 40736 standards

05 OPzS TÜBÜLER SULU SERİ TEKNOLOJİSİ / OPzS TUBULAR FLOODED TECHNOLOGY

OPzS hücrelerde pozitif plakalar tüp (tübüler) yapıdadır ve elektrolit sıvı (sulu) hâldedir. Şeffaf gövde sayesinde elektrolit seviyesi ve hücre durumu gözle izlenebilir; periyodik su ilavesi gerekir. Uzun tampon (float) ömrü ve yüksek çevrim kabiliyetiyle telekom, enerji santralleri, demiryolu ve yedek güç gibi sabit uygulamalar için tasarlanmıştır.

In OPzS cells the positive plates are tubular and the electrolyte is liquid (flooded). The transparent container allows the electrolyte level and cell condition to be checked visually; periodic topping-up with water is required. Long float life and high cycling capability make them suitable for stationary applications such as telecom, power stations, railways and standby power.

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