PSEDYS | TECHNICAL REFERENCE MANUAL V3.0

FR — Funding Rate

Technical Reference Manual v1.0

PSEDYS | Complete Edition
Mechanism · Interval 8H · Extreme Values · Contrarian Signal · FR + OI · Cumulative FR · MTF · PSEDYS TI

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1. What is Funding Rate? Mechanism

Funding Rate is a periodic fee exchanged between Long and Short traders on **perpetual futures** (contracts without expiration). The mechanism keeps the perpetual futures price close to the spot price.

Mechanism:

```
FR > 0 (positive): Longs pay Shorts
  → Perpetual price > spot → "costly" to hold Long → anchoring towards spot

FR < 0 (negative): Shorts pay Longs
  → Perpetual price < spot → "costly" to hold Short → anchoring towards spot

FR = 0: perfect equilibrium (rare)
```

Payment Interval: Standard = every 8 hours (00:00, 08:00, 16:00 UTC)
- Some exchanges: 1h or 4h (Kraken, Binance varies)

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2. Calculation Formula

```
Funding Rate = Premium Index + clamp(Interest Rate - Premium Index, -0.05%, +0.05%)

Premium Index = (Best_Bid + Best_Ask)/2 - Mark_Price (or Index Price)
Interest Rate = 0.03%/day / 3 = 0.01% per 8h (standard Binance/Kraken)

Simplified (most common):
FR ≈ (Perpetual Price - Spot Price) / Spot Price × normalization_factor

Payment per contract:
  Funding Payment = Position Value × FR
  Ex: Long 1 BTC @ 65000 × FR=0.01% = \$6.50 paid every 8h
```

3. Interpretation of FR Values

```
Normal: ±0.01%/8h (±0.03%/day)
  → Balanced market, minimal holding cost

High: +0.05% to +0.10%/8h
  → Excess Longs (intense bullish sentiment)
  → Cost: 0.15-0.3%/day for Long
  → Signal: overheated bullish market → possible reversal

Extreme: > 0.10%/8h (> 0.30%/day)
  → Bullish euphoria, massive Long dominance
  → Contrarian signal: bearish → bear market incoming or major correction
  → In bull run rare: can last several days

High negative: < -0.05%/8h
  → Excess Shorts → intense bearish sentiment
  → Signal: overheated bearish market → possible short squeeze

Extreme negative: < -0.10%/8h
  → Shorts capitulation or extreme bear sentiment
  → Contrarian signal: bullish
```

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4. FR as a Contrarian Signal

```
FR contrarian logic:
  Extremely positive FR (>0.1%): EVERYONE is Long → no one left to buy → top
  Extremely negative FR (<-0.1%): EVERYONE is Short → no one left to sell → bottom

IMPORTANT: FR is not an exact timing signal:
  High FR can persist for weeks in a bull market
  Negative FR can persist in a bear market
  Requires CONFIRMATION from price (CHoCH, BOS, OB)

Best use: Extreme FR + reversal structure = contrarian entry

FR as a filter (not a direct signal):
  FR > 0.05% + any Long signal → reduce sizing (correction risk)
  FR > 0.10% + Short signal (bearish BOS) → high-quality signal
  FR < -0.05% + Short signal → reduce Short sizing
  FR < -0.10% + Long signal (bullish BOS) → high-quality signal
```

5. FR + OI Combined

```
FR > 0.05% + OI ↑:
  New money Long + costly → Imminent Long squeeze on reversal

FR > 0.05% + OI ↓:
  Longs closing (high payment) → weakening bullish move

FR < -0.05% + OI ↑:
  New money Short + costly → Short squeeze on any bullish BOS

FR < -0.05% + OI ↓:
  Shorts closing → weakening bearish move → possible bottom

Neutral FR + strong OI ↑:
  New positions in both directions → tense equilibrium → imminent breakout
```

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6. Cumulative Funding Rate

```
Cumulative FR (over 7-30 days) = Σ FR[i] for all intervals

Interpretation:
  CumFR > +0.5% (7 days): big money spent on Long → possible top
  CumFR > +1.0% (7 days): extreme → very likely reversal
  CumFR < -0.5% (7 days): big money spent on Short → possible bottom

Calculation:
  3 payments/day × 7 days = 21 intervals
  CumFR_7d = Σ FR[1..21]
```

7. MTF and PSEDYS (TI DB)

```
-- Current funding rate from TI
SELECT exchange, symbol, funding_rate, timestamp
FROM funding_rates
WHERE exchange = 'kraken'
ORDER BY timestamp DESC
LIMIT 30;

-- Symbols with extreme FR
SELECT symbol, funding_rate, timestamp
FROM funding_rates
WHERE exchange = 'kraken'
  AND timestamp = (SELECT MAX(timestamp) FROM funding_rates WHERE exchange='kraken')
  AND ABS(funding_rate) > 0.0005  -- > 0.05%
ORDER BY funding_rate DESC;

-- Cumulative FR 7 days
SELECT symbol,
       SUM(funding_rate) AS cum_fr_7d,
       COUNT(*) AS intervals
FROM funding_rates
WHERE exchange = 'kraken'
  AND timestamp > NOW() - INTERVAL '7 days'
GROUP BY symbol
ORDER BY cum_fr_7d DESC;
```

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```
# FR filter for strategy
def fr_signal_quality_modifier(fr, direction):
    """Adjust sizing based on FR."""
    if direction == 'long':
        if fr > 0.001:    return 0.25  # Extremely positive FR → High Long risk
        elif fr > 0.0005: return 0.75  # High FR → Moderate Long risk
        elif fr < -0.0003: return 1.25  # Negative FR → Safer Long
        else: return 1.0
    else:  # short
        if fr < -0.001:   return 0.25  # Extremely negative FR → High Short risk
        elif fr < -0.0005: return 0.75
        elif fr > 0.0003:  return 1.25  # Positive FR → Safer Short
        else: return 1.0
```

---

8. Practical Exercises

Exercise 1: BTC FR = +0.12%/8h with Price at ATH

Situation: BTC at ATH. FR = +0.12%/8h (extremely positive). OI increasing. ADX = 35.

Response: Reduce Long sizing / prepare Short with confirmation. Extreme FR = maximum bullish euphoria. Long cost = 0.36%/day = profit erosion. Risk of Long Squeeze if price turns. Do not exit existing Long immediately (ADX=35 = active trend), but aggressively tighten trailing SL (1×ATR). Short only on confirmed bearish BOS on 4H. Do not preemptively Short based only on FR.

Exercise 2: FR = −0.08%/8h with Falling Price

Situation: ETH drops 15% in 3 days. FR = −0.08%/8h. OI stagnant.

Response: Short squeeze risk — no new Short entry. High negative FR = shorts paying a lot → will cover forcibly on any bullish trigger. Stagnant OI = shorts not increasing aggressively. Setup ready for squeeze. Wait for bullish CHoCH/BOS on 1H → aggressive Long entry (short squeeze). Skip new Short entry.

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9. Cheat Sheet

Concept	Value / Rule
FR > 0	Longs pay Shorts
FR < 0	Shorts pay Longs
Interval	8h (00:00/08:00/16:00 UTC standard)
Normal	±0.01%/8h
High	> 0.05%/8h (bull excess)
Extreme	> 0.10%/8h (euphoria)
Extreme negative	< −0.05%/8h (fear)
Contrarian Bull	Extremely negative FR + bullish BOS
Contrarian Bear	Extremely positive FR + bearish BOS
FR + OI ↑ positive	Long squeeze risk
FR + OI ↑ negative	Short squeeze risk
Sizing modifier	Extreme FR → reduce sizing 25-75%
CumFR 7d > 1%	Topping signal
CumFR 7d < -0.5%	Bottoming signal
PSEDYS	Table `funding_rates` TI DB

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