Sensors and Switches in Mobile Cranes

1. **Limitless™ switch**
   a. (Replaces wired 2-block jib switch)
   b. (Boom position sensing: full extension, full retraction)
   c. (Adjustable minimum/maximum cab position sensing)
   d. (Confirms mechanical locks are in place)
   e. (Outrigger position sensing full extension, half extension, full retraction)

2. **Load cell**
   (Torsion or boom side load sensing, provides counterweight information to operator)

3. **MICRO SWITCH compact limit switch**
   (Boom position detection) NGC Series

4. **SMART position sensor**
   SPS Series
   a. (Boom angle position sensing)
   b. (Steering angle sensing)

5. **MICRO SWITCH limit switch**
   (Machine position) HDLS Series

6. **MICRO SWITCH limit switch**
   (Jib, wheel block and outrigger position indicator) GLS Series

7. **Load pin**
   (Replaces hydraulic cylinder pins)

8. **Thermostat**
   (Fire suppression sensing) 3000 Series

9. **Heavy duty pressure transducer or Test & Measurement pressure sensor**
   (Outrigger load sensing - multiple units) MLH Series

10. **Load cell or load pins**
    a. (Outrigger load sensing - multiple units)
    b. (Hook load sensing)

11. **Position sensor**
    (Jack position sensing) 103SR Series

12. **Speed/speed and direction sensors**
    a. (Vehicle roll-back protection/emergency brake) SNG-Q, SNDH-T Series
    b. (Wheel speed and hydraulic pump sensing) SNG-Q, SNDH-H Series
    c. (Power regulation of hybrid electric transmissions/engines) SNG-Q Series

13. **Heavy-duty pressure transducers**
    PX3 Series, PX2 Series, MLH Series, 13 mm Series, 19 mm Series, SPT Series
    a. (Braking system sensing)
    b. (Fuel tank level sensing)
    c. (Hydraulic sensing)

14. **Pressure switch**
    HP, HE, LP, LE Series
    a. (Engine oil monitoring)
    b. (Hydraulic system)

15. **Packaged temperature probes**
    a. (Ambient temperature sensing) ES-110 Series, LTP Series
    b. (Cabin temperature sensing) ES-110 Series
    c. (Hydraulic oil temp sensing) R300 Series

16. **Hour meter**
    (Engine usage tracking) LM Series

17. **Key switch**
    (On/off switch)

18. **Push-pull switch**
    (Emergency stop) 50070974 Series

19. **MICRO SWITCH toggle switch**
    (Manual operator switch) NT Series, MT Series

20. **Smart key**
    (Limits crane function by operator’s certification level)

21. **Turn signal**
    (Multi-purpose)

22. **Shifter**
    (Forward-neutral-reverse) 81248

23. **Hall-effect rotary position sensor**
    (Steering angle sensing, power steering control system sensing) RTY Series

24. **Linear Hall-effect sensor IC**
    (Power steering control system sensing) SS490 Series

25. **MICRO SWITCH compact limit switch**
    (Door and panel interlock detection) BZE Series

26. **Transportation Attitude Reference Sensor**
    Ruggedized Inertial Measurement Unit (IMU)
    (Vehicle angular rate, acceleration, inclination) TARS Series
Honeywell's high quality, rugged switches, sensors and vehicle controls have been helping power transportation applications for more than 75 years. Our extensive portfolio includes a multitude of products for engine and transmission applications such as temperature probes, ignition switches, turn signals, and more - all designed for high accuracy, superior reliability, enhanced safety and long term performance in harsh environments.

**Higher accuracy**
- Position sensing with SS490 Series linear Hall-effect position sensor ICs and RPN Series Hall-effect rotary position sensors
- Engine usage tracking with LM Series LCD display hour meters
- Hydraulic, brake, and fuel-tank level sensing with PX2 Series, PX3 Series, MLH Series, 13 mm Series, 19 mm Series, and SPT Series heavy-duty pressure transducers
- Wheel and hydraulic pump sensing with SNDH-H Series speed and direction sensors
- Hydraulic system and engine oil monitored with HP, HE, LP, and LE Series pressure switches
- Cabin temperature sensing with ES-110 Series and LTP Series packaged temperature probes

**Enhanced safety**
- Fire suppression sensing with 3000 Series thermostats
- Emergency stops using push/pull e-stop switches
- Jack position sensing with 103SR Series position sensors
- Boom angle position sensing with SPS Series SMART position sensors or RPN Series rotary position sensors
- Hydraulic oil temperature sensing with R300 Series packaged temperature probes
- Steering angle position sensing with SPS Series SMART position sensors and LTP Series packaged temperature probes
- Torsion or boom side load sensing with load cells
- Replace hydraulic cylinder pins with load pins
- Counterweight sensing with load cells
- Outrigger load sensing with load cells or load pins
- Outrigger load sensing and crane level sensing with MLH Series heavy duty pressure transducers and Test & Measurement pressure sensors
- Limit crane operability by operator certification level with SMART key
- Confirm mechanical locks are in place with Limitless™ switches
- Minimum/maximum cab position sensing with Limitless™ switches

**Productivity**
- Hook load sensing with load cells or load pins
- Replace wired 2-block jib switch with Limitless™ switches
- Boom position sensing (full extension, full retraction) with Limitless™ switches
- Outrigger position sensing (full extension, full retraction) with Limitless™ switches
- Wheel and hydraulic pump sensing with SNDH-H Series speed and direction sensors
- Replace hydraulic cylinder pins with load pins
- Counterweight sensing with load cells
- Outrigger load sensing with load cells or load pins
- Outrigger load sensing and crane level sensing with MLH Series heavy duty pressure transducers and Test & Measurement pressure sensors
- Limit crane operability by operator certification level with SMART key
- Confirm mechanical locks are in place with Limitless™ switches
- Minimum/maximum cab position sensing with Limitless™ switches

**Superior reliability**
- Power steering control system sensing with SS490 Series linear Hall-effect sensor ICs and RPN Series Hall-effect rotary position sensors
- Jib extension monitoring with MICRO SWITCH heavy-duty limit switches
- Throttle, brake, and clutch position sensing with rotary position sensors
- Hydraulic oil temperature sensing with R300 Series packaged temperature probes
- Steering angle position sensing with SPS Series SMART position sensors and LTP Series packaged temperature probes
- Torsion or boom side load sensing with load cells
- Replace hydraulic cylinder pins with load pins
- Counterweight sensing with load cells
- Outrigger load sensing with load cells or load pins
- Outrigger load sensing and crane level sensing with MLH Series heavy duty pressure transducers and Test & Measurement pressure sensors
- Limit crane operability by operator certification level with SMART key
- Confirm mechanical locks are in place with Limitless™ switches
- Minimum/maximum cab position sensing with Limitless™ switches

**FOR MORE INFORMATION**
Honeywell Advanced Sensing Technologies services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing or the nearest Authorized Distributor, visit sps.honeywell.com/ast or call:

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While Honeywell provides application assistance personally, through its literature and the Honeywell Web site, it is up to the customer to determine the suitability of the product in the application.