IMMOBILISER SYSTEM
INTRODUCTION

2017
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>PICTURES</th>
<th>KAT Part Nr.</th>
<th>CUSTOMER</th>
<th>DATE OF BEGINN SERIAL DELIVERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immobiliser Type 1 (with TYCO Connectors)</td>
<td><img src="image1.png" alt="IMMobiliser Type 1" /></td>
<td>33223 33241</td>
<td>• Kramer Werke</td>
<td>since 2006</td>
</tr>
<tr>
<td>Immobiliser Type 1 (with TYCO Connectors)</td>
<td><img src="image2.png" alt="IMMobiliser Type 1" /></td>
<td>33223</td>
<td>• Wacker Neuson</td>
<td>since 2007</td>
</tr>
<tr>
<td>Immobiliser Type 1 (with TYCO Connectors)</td>
<td><img src="image3.png" alt="IMMobiliser Type 1" /></td>
<td>33243 34454 34281 33225 34231</td>
<td>• Liebherr Group</td>
<td>since 2007</td>
</tr>
<tr>
<td>Immobiliser Type 1 (with TYCO Connectors)</td>
<td><img src="image4.png" alt="IMMobiliser Type 1" /></td>
<td>33248</td>
<td>• CNH Group</td>
<td>since 2007</td>
</tr>
<tr>
<td>Immobiliser Type 1 (with TYCO Connectors)</td>
<td><img src="image5.png" alt="IMMobiliser Type 1" /></td>
<td>33248</td>
<td>• Terex Group</td>
<td>since 2006</td>
</tr>
<tr>
<td>Immobiliser IP69 (with Deutsch Connectors and CAN-Bus)</td>
<td><img src="image6.png" alt="IMMobiliser IP69" /></td>
<td>34352</td>
<td>• JCB Group</td>
<td>since 2009</td>
</tr>
</tbody>
</table>
# Customer Base

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>PICTURES</th>
<th>KAT Part Nr.</th>
<th>CUSTOMER</th>
<th>DATE OF BEGINN SERIAL DELIVERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immobiliser IP69</td>
<td><img src="immobiliser_ip69.png" alt="Image" /></td>
<td>34958</td>
<td>• Liebherr Group</td>
<td>since 2011</td>
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<tr>
<td>(with Deutsch Connectors and CAN-Bus)</td>
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<tr>
<td>Immobiliser IP69</td>
<td><img src="immobiliser_ip69.png" alt="Image" /></td>
<td>35340</td>
<td>* Kramer Werke</td>
<td>Since 2013</td>
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<tr>
<td>(with Deutsch Connectors and CAN-Bus)</td>
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</tbody>
</table>
Immobiliser System Descriptions
SYSTEM SPECIFICATION

- Up to 4 electro mechanic relay output
- Antenna (below and over dashboard types available)
- Key with Transponder
- 15 transponder key memory
- CAN-Bus SAE J1939 (Optional)
**Electrical data:**
Voltage range: +6V / +32 V
Nominal voltage: 12V and 24V

**Temperature range:**
Operational: -40°C to +85°C
Storage: -40°C to +100°C

**Power Consumptions:**
Operational Current consumption: typ. 50mA @24VDC
Cont. Current for relay: 5A

**EMI/ EMC**
KBA Approval: e1*74/61*95/56*0501*00
DIN EN ISO 14982:1998
ISO 7637-1
ISO 7637-2
Immobiliser Type-2

SYSTEM SPECIFICATION

- CAN-Bus SAE J1939
- IP52 protection degree
- Antenna (below and over dashboard types available)
- Key with Transponder
- 15 transponder key memory
- 1 Analog input
- 1 Analog or Digital output
- Short Circuit Protection
- Low Current Consumption in Sleep Mode
- Easy assembly with KFZ Relay Socket
- Cheap and safe immobilizer solution
Electrical data:
Voltage range: +6V / +32 V
Nominal voltage: 12V and 24V
Analog Trig. Channel Clamping Voltage: +60VDC (Planned)

Temperature range:
Operational: -40°C to +85°C
Storage: -40°C to +100°C

Power Consumptions:
Operational Current consumption: 30mA – 35mA
Stand-by current (operation clamp 30): 1 mA - 1.5 mA
Analog Trig. Channel Cont. Current: 350 - 500mA (Planned)
Analog Trig. Channel Max Peak Current: 1A (Planned)

ESD Susceptibility (HBM): 2.0kV - 4.0kV
The system consists of a mechanical locking system and an independently functioning, electronically coded, immobilizer. The mechanical locking system is a starting switch made by the KAT Company. This switches clamp 15/54 with a mechanically coded key. When the clamp 15/54 is switched on, the key is mechanically locked and can not be removed.

When activated, the electronically coded immobilizer disconnects 3 operating-relevant control devices: for example the starter, the fuel pump and the brake valve. The disconnection takes place potential-free via 3 independent power relays.

The immobilizer control electronic is based on microprocessor technology. The electronic key is based on proximity transponder technology and is securely integrated into the key handle of the starting switch.
Immobiliser Type-3

Electrical data:
Voltage range: 7 – 32 V [Volts]
Nominal voltage: 12V and 24V

Temperature range: -40°C to +85°C
Power consumption relay open: ≤ 50mA
Power consumption relay closed: typ. 200-250 [mA]
Stand-by current (operation clamp 30): ≤ 1mA

IP Protection:
Water ingress: IP6X
Dust ingress: IPX9K

Relay outputs:
High (TYCO)  |  Low (Omron)
--- | ---
Maximum switching voltage: 32V  |  32V
Maximum switching current: 40A  |  1A
Continuous current: 15A  |  1A
Voltage drop (15A): typ. 30mV  |  
Number of relays: 3  |  

RF module:
Transmission frequency: typ. 134,2 kHz
Coding scheme: FSK
Range: approx. 6 cm

CAN-Bus (optional)
CAN bus interface: Full CAN 2.0B active SAE J1939
CAN bus speed: from 250 kbit/s up to 1Mb/s
Immobiliser Type-3

**Electrical Transients (Immunity)**
- Radiated field (absorber-lined chamber), ISO11452, Part 2
- Bulk current injection, ISO11452, Part 4

**Electrical Transients (Emissions)**
Tested according to ISO13766:2000 Earth Moving Machinery – Electromagnetic compatibility and the Agricultural Tractor EMC Directive 2000/2/EC

**Electrostatic Discharge (ESD)**
Tested according to ISO 10605

+/- 8kV (direct)
+/- 15kV (air)

**Radio Approval**
According to EN 300 330-2
Thatcham

CERTIFICATE OF COMPLIANCE

This is to certify that:

JCB Compact Products
Immobiliser 2 System

Has been demonstrated to comply with
The British Insurance Industry’s Criteria
for

Plant & Agriculture

Issue 3

and is classified as

Category P 2
TEP3-20/1009

Date Issued: 28/10/09

Peter Roberts
Chief Executive

www.thatcham.org

In 2009 JCB is certified with Thatcham 3 stars